

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

- QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended September 30, 2022
- or
- TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____

Commission file number: 001-38273



ACM Research, Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of Incorporation or Organization)

94-3290283
(I.R.S. Employer Identification No.)

42307 Osgood Road, Suite I
Fremont, California
(Address of Principal Executive Offices)

94539
(Zip Code)

Registrant's telephone number, including area code: (510) 445-3700

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol	Name of Each Exchange on which Registered
Class A Common Stock, \$0.0001 par value	ACMR	The NASDAQ Stock Market LLC

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data file required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer
Non-accelerated filer

Accelerated filer
Smaller reporting company
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date.

Class	Number of Shares Outstanding
Class A Common Stock, \$0.0001 par value	54,373,515 shares outstanding as of November 2, 2022
Class B Common Stock, \$0.0001 par value	5,086,812 shares outstanding as of November 2, 2022

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ACM Research, Inc., or ACM Research, is a Delaware corporation founded in California in 1998 to supply capital equipment developed for the global semiconductor industry. Since 2005, ACM Research has conducted its business operations principally through its subsidiary ACM Research (Shanghai), Inc., or ACM Shanghai, a limited liability corporation formed by ACM Research in the People’s Republic of China, or the PRC, in 2005. Unless the context requires otherwise, references in this report to “our company,” “our,” “us,” “we” and similar terms refer to ACM Research, Inc. and its subsidiaries, including ACM Shanghai, collectively.

Our principal corporate office is located in Fremont, California. We conduct a substantial majority of our product development, manufacturing, support and services in the PRC through ACM Shanghai. We perform, through a subsidiary of ACM Shanghai, additional product development and subsystem production in South Korea, and we conduct, through ACM Research, sales and marketing activities focused on sales of ACM Shanghai products in North America, Europe and certain regions in Asia outside mainland China. ACM Research is not a PRC operating company, and we do not conduct our operations in the PRC through the use of a variable interest entity, or VIE, or any other structure designed for the purpose of avoiding PRC legal restrictions on direct foreign investments in PRC-based companies. ACM Research has a direct ownership interest in ACM Shanghai as the result of its holding 82.5% of the outstanding shares of ACM Shanghai. Stockholders of ACM Research may never directly own equity interests in ACM Shanghai. We do not believe that our corporate structure or any other matters relating to our business operations require that we obtain any permissions or approvals from the China Securities Regulatory Commission, the Cyberspace Administration of China, or any other PRC central government authority in order to continue to list shares of Class A common stock of ACM Research on the Nasdaq Global Select Market. This determination was based on the facts aforementioned and the PRC Company Law, PRC Securities Law, cybersecurity regulations and other relevant laws, regulations and regulatory requirements in the PRC currently in effect. However, if this determination proves to be incorrect, then it could have a material adverse effect on ACM Research. See “Part II. Item IA, Risk Factors— If any PRC central government authority were to determine that existing PRC laws or regulations require that ACM Shanghai obtain the authority’s permission or approval to continue the listing of ACM Research’s Class A common stock in the United States or if those existing PRC laws and regulations, or interpretations thereof, were to change to require such permission or approval, ACM Shanghai may be unable to obtain the required permission or approval or may only be able to obtain such permission or approval on terms and conditions that impose material new restrictions and limitations on operation of ACM Shanghai, either of which could have a material adverse effect on our business, financial condition, results of operations, reputation and prospects and on the trading price of ACM Research Class A common stock.”

In addition, in the ordinary course of business, ACM Shanghai is required to obtain certain operating permits and licenses necessary for it to operate in the PRC, including business licenses, certifications relating to quality management standards, import and export-related qualifications from customs, as well as environmental and construction permits, licenses and approvals relating to construction projects. We believe ACM Shanghai has all such required permits and licenses. However, from time to time the PRC government issues new regulations, which may require additional actions on the part of ACM Shanghai to comply. If ACM Shanghai does not, or is unable to, obtain any such additional permits or licenses, ACM Shanghai may be subjected to restrictions and penalties imposed by the relevant PRC regulatory authorities, and it could have a material adverse effect on our business, financial condition, results of operations, reputation and prospects and on the trading price of ACM Research Class A common stock.

Cash amounts held by ACM Shanghai at PRC banks in mainland China are subject to a series of risk control regulatory standards from PRC bank regulatory authorities. ACM Shanghai is required to obtain approval from the State Administration of Foreign Exchange (“SAFE”) to transfer funds into or out of the PRC. SAFE requires a valid agreement to approve the transfers, which are processed through a bank. Other than these PRC foreign exchange restrictions, ACM Shanghai is not subject to any PRC restrictions and limitations on its ability to transfer funds to ACM Research or among our other subsidiaries. However, cash held by ACM Shanghai in mainland China does exceed applicable insurance limits and is subject to risk of loss, although no such losses have been experienced to date.

ACM Research (CA), Inc. (“ACM California”) periodically procures goods and services on behalf of ACM Shanghai. For these transactions, ACM Shanghai makes cash payments to ACM California in accordance with applicable transfer pricing arrangements. ACM California periodically borrows funds for working capital advances from its direct parent, CleanChip Technologies Limited (“CleanChip”). ACM California repays these intercompany loans in accordance with their terms. For sales through CleanChip and ACM Research, a certain amount of sales proceeds is repatriated back to ACM Shanghai in accordance with applicable transfer pricing arrangements in the ordinary course of business. Subsequent to June 30, 2020, with the exception of sales and services-related transfer-pricing payments in the ordinary course of business, no cash transfers, dividends or other payments or distributions have been made between the ACM Research and ACM Shanghai. We intend to retain any future earnings to finance the operations and expenses of our business, and we do not expect to distribute earnings or declare or pay any dividends in the foreseeable future.

The U.S. Holding Foreign Companies Accountable Act (the “HFCA Act”) requires that the Public Company Accounting Oversight Board (the “PCAOB”) determine whether it is unable to inspect or investigate completely registered public accounting firms located in a non-U.S. jurisdiction because of a position taken by one or more authorities in that jurisdiction. BDO China Shu Lun Pan Certified Public Accountants LLP (“BDO China”) had been our independent registered public accounting firm in recent years, including for the year ended December 31, 2021. On December 16, 2021, the PCAOB reported its determination that it was unable to inspect or investigate completely registered public accounting firms headquartered in the PRC and Hong Kong, including BDO China, because of positions taken by PRC authorities in those jurisdictions. On March 30, 2022, based on this determination, ACM Research was transferred to the SEC’s “Conclusive list of issuers identified under the HFCA.” See “Part II. Item 1A, Risk Factors— We could be adversely affected if we are unable to comply with recent and proposed legislation and regulations regarding improved access to audit and other information and audit inspections of accounting firms operating in the PRC” of this report for more information. Under current regulations, if ACM Research were to be included on this list three consecutive times due to our independent auditor being located in a jurisdiction that does not allow for PCAOB inspections, the SEC could prohibit trading in our securities and cause our securities to be delisted in the U.S., and their value may significantly decline or become worthless. Further, the “Accelerating HFCAA” could reduce the applicable threshold from three consecutive appearances to two consecutive appearances on the list. However, on June 30, 2022, stockholders of ACM Research ratified the appointment of Armanino LLP as our independent auditor for the fiscal year ending December 31, 2022. Armanino LLP is neither headquartered in the PRC or Hong Kong nor is it subject to the determinations announced by the PCAOB, and, subsequent to the filing of our 2022 annual report, we do not believe ACM Research will appear on the “Conclusive” list for a second time.

In addition to the matters discussed above, we are also subject to a number of legal and operational risks associated with our corporate structure, including as the result of a substantial portion of our operations being conducted in the PRC. Consequences of any of those risks could result in a material adverse change in our operations or cause the value of ACM Research Class A common stock to significantly decline in value or become worthless. Please carefully read the information included in “Part II. Item 1A – Risk Factors” of this report and our Annual Report on Form 10-K for the year ended December 31, 2021 and our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022, in particular the risk factors addressing the following issues:

- If any PRC central government authority were to determine that existing PRC laws or regulations require that ACM Shanghai obtain the authority’s permission or approval to continue the listing of ACM Research’s Class A common stock in the United States or if those existing PRC laws and regulations, or interpretations thereof, were to change to require such permission or approval, or if we inadvertently conclude that such permissions or approvals are not required, ACM Shanghai may be unable to obtain the required permission or approval or may only be able to obtain such permission or approval on terms and conditions that impose material new restrictions and limitations on operation of ACM Shanghai, either of which could have a material adverse effect on our business, financial condition, results of operations, reputation and prospects and on the trading price of ACM Research Class A common stock, which could decline in value or become worthless.
- PRC central government authorities may intervene in, or influence, ACM Shanghai’s PRC-based operations at any time, and those authorities’ rules and regulations in the PRC can change quickly with little or no advance notice.
- The PRC central government may determine to exert additional control over offerings conducted overseas or foreign investment in PRC-based issuers, which could result in a material change in operations of ACM Shanghai and cause significant declines in the value of ACM Research Class A common stock, or make them worthless.

Recent statements and regulatory actions by PRC central government authorities with respect to the use of VIEs and to data security and anti-monopoly concerns have not affected our ability to conduct our business operations in China. For further information, see “Part II. Item 1A – Risk Factors – Risks Related to International Aspects of Our Business” of our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022 and in this report for more information.

For purposes of this report, certain amounts in Renminbi, or RMB, have been translated into U.S. dollars solely for the convenience of the reader. The translations have been made based on the conversion rates published by the State Administration of Foreign Exchange of the People’s Republic of China.

SAPS, TEBO, ULTRA C and ULTRA FURNACE are trademarks of ACM Research. For convenience, these trademarks appear in this report without TM symbols, but that practice does not mean that ACM Research will not assert, to the fullest extent under applicable law, ACM Research’s rights to the trademarks. This report also contains other companies’ trademarks, registered marks and trade names, which are the property of those companies.

FORWARD-LOOKING STATEMENTS AND STATISTICAL DATA

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, included in this report regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans and objectives of management are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “may,” “might,” “will,” “objective,” “intend,” “should,” “could,” “can,” “would,” “expect,” “believe,” “anticipate,” “project,” “target,” “design,” “estimate,” “predict,” “potential,” “plan” or the negative of these terms, and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on our management’s belief and assumptions and on information currently available to our management. Although we believe that the expectations reflected in these forward-looking statements are reasonable, these statements relate to future events or our future operational or financial performance, and involve known and unknown risks, uncertainties and other factors, including uncertainties surrounding the COVID-19 pandemic (including effects of related PRC restrictions) and other factors described or incorporated by reference in “Item 1A. Risk Factors” of Part II of this report, that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements.

The information included under the heading “Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations – Overview,” of Part I of this report contains statistical data and estimates, including forecasts, that are based on information provided by Gartner, Inc., or Gartner, in “Forecast: Semiconductor Wafer Fab Equipment, Worldwide, 4Q21 Update” (December 2021), or the Gartner Report. The Gartner Report represents research opinions or viewpoints that are published, as part of a syndicated subscription service, by Gartner and are not representations of fact. The Gartner Report speaks as of its original publication date (and not as of the date of this report), and the opinions expressed in the Gartner Report are subject to change without notice. While we are not aware of any misstatements regarding any of the data presented from the Gartner Report, estimates, and in particular forecasts, involve numerous assumptions and are subject to risks and uncertainties, as well as change based on various factors, that could cause results to differ materially from those expressed in the data presented below.

Any forward-looking statement made by us in this report speaks only as of the date on which it is made. Except as required by law, we assume no obligation to update these statements publicly or to update the reasons actual results could differ materially from those anticipated in these statements, even if new information becomes available in the future.

You should read this report, and the documents that we reference in this report and have filed as exhibits to this report, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

PART I. FINANCIAL INFORMATION
Item 1. Financial Statements

ACM RESEARCH, INC.
Condensed Consolidated Balance Sheets
(In thousands, except per share data)
(Unaudited)

	September 30, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	\$ 336,275	\$ 562,548
Restricted cash	367	519
Short-term time deposits (note 2)	66,176	-
Trading securities (note 15)	14,164	29,498
Accounts receivable (note 4)	188,341	105,553
Income tax receivable	63	1,082
Other receivables	15,135	18,979
Inventories (note 5)	327,792	218,116
Advances to related party (note 16)	5,158	2,383
Prepaid expenses	17,771	14,256
Total current assets	971,242	952,934
Property, plant and equipment, net (note 6)	66,470	14,042
Land use right, net (note 7)	8,547	9,667
Operating lease right-of-use assets, net (note 11)	2,647	4,182
Intangible assets, net	873	477
Long-term time deposits (note 2)	70,400	-
Deferred tax assets (note 19)	6,576	13,166
Long-term investments (note 14)	18,538	12,694
Other long-term assets (note 8)	2,373	45,017
Total assets	\$ 1,147,666	\$ 1,052,179
Liabilities and Equity		
Current liabilities:		
Short-term borrowings (note 9)	\$ 50,688	\$ 9,591
Current portion of long-term borrowings (note 12)	2,260	2,410
Related party accounts payable (note 16)	6,589	7,899
Accounts payable	92,325	93,451
Advances from customers	136,610	52,824
Deferred revenue	4,911	3,180
Income taxes payable (note 19)	8,564	254
FIN-48 payable (note 19)	2,054	2,282
Other payables and accrued expenses (note 10)	40,281	31,735
Current portion of operating lease liability (note 11)	1,320	2,313
Total current liabilities	345,602	205,939
Long-term borrowings (note 12)	18,810	22,957
Long-term operating lease liability (note 11)	1,327	1,869
Deferred tax liability (note 19)	1,169	1,302
Other long-term liabilities (note 13)	6,660	8,447
Total liabilities	373,568	240,514
Commitments and contingencies (note 20)		
Equity:		
Stockholders' equity:		
Class A Common stock (1) (note 17)	5	5
Class B Common stock (1) (note 17)	1	1
Additional paid-in capital	601,431	595,045
Retained earnings	91,186	63,732
Statutory surplus reserve (note 22)	8,312	8,312
Accumulated other comprehensive income (loss)	(57,920)	9,109
Total ACM Research, Inc. stockholders' equity	643,015	676,204
Non-controlling interests	131,083	135,461
Total equity	774,098	811,665
Total liabilities and equity	\$ 1,147,666	\$ 1,052,179

(1) Prior period results have been adjusted to reflect the three-for-one stock split effected in the form of a stock dividend in March 2022. See Note 1 for details

The accompanying notes are an integral part of these condensed consolidated financial statements.

ACM RESEARCH, INC.
Condensed Consolidated Statements of Operations and Comprehensive Income (Loss)
(In thousands, except share and per share data)
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Revenue (note 3)	\$ 133,709	\$ 67,013	\$ 280,290	\$ 164,609
Cost of revenue	67,742	37,328	150,480	95,199
Gross profit	65,967	29,685	129,810	69,410
Operating expenses:				
Sales and marketing	13,133	6,363	27,494	17,460
Research and development	15,678	7,856	44,391	21,293
General and administrative	5,520	3,671	15,560	11,081
Total operating expenses	34,331	17,890	87,445	49,834
Income from operations	31,636	11,795	42,365	19,576
Interest income	2,016	33	5,965	113
Interest expense	(419)	(191)	(986)	(574)
Realized gain from sale of trading securities	1,136	-	1,136	-
Unrealized gain (loss) on trading securities	(5,281)	(919)	(9,562)	1,817
Other income (expense), net	7,207	(255)	9,949	(683)
Equity income in net income of affiliates	1,251	421	1,652	1,036
Income before income taxes	37,546	10,884	50,519	21,285
Income tax benefit (expense) (note 19)	(10,470)	266	(14,138)	3,021
Net income	27,076	11,150	36,381	24,306
Less: Net income attributable to non-controlling interests	6,072	995	8,927	2,114
Net income attributable to ACM Research, Inc.	\$ 21,004	\$ 10,155	\$ 27,454	\$ 22,192
Comprehensive income (loss):				
Net income	27,076	11,150	36,381	24,306
Foreign currency translation adjustment, net of tax	(42,416)	(409)	(80,334)	1,259
Comprehensive income (loss)	(15,340)	10,741	(43,953)	25,565
Less: Comprehensive income (loss) attributable to non-controlling interests	(1,057)	757	(4,378)	2,471
Comprehensive income (loss) attributable to ACM Research, Inc.	\$ (14,283)	\$ 9,984	\$ (39,575)	\$ 23,094
Net income attributable to ACM Research, Inc. per common share (note 2):				
Basic	\$ 0.35	\$ 0.17	\$ 0.46	\$ 0.39
Diluted	\$ 0.32	\$ 0.15	\$ 0.41	\$ 0.34
Weighted average common shares outstanding used in computing per share amounts (note 2):				
Basic (1)	59,360,790	58,267,638	59,123,895	57,340,059
Diluted (1)	65,612,665	66,127,548	65,629,273	65,191,020

(1) Prior period results have been adjusted to reflect the three-for-one stock split effected in the form of a stock dividend in March 2022. See Note 1 for details.

The accompanying notes are an integral part of these condensed consolidated financial statements.

ACM RESEARCH, INC.
Condensed Consolidated Statements of Changes in Equity
For the Nine Months Ended September 30, 2022 and 2021
(In thousands, except share and per share data)
(Unaudited)

	Common Stock Class A		Common Stock Class B		Additional Paid- in Capital	Retained earnings	Statutory Surplus Reserve	Accumulated Other Comprehensive Income	Non-controlling interests	Total Equity
	Shares (1)	Amount	Shares (1)	Amount						
Balance at December 31, 2020	50,690,079	\$ 5	5,407,818	\$ 1	\$ 102,000	\$ 29,899	\$ 4,388	\$ 4,857	\$ 67,020	\$ 208,170
Net income	-	-	-	-	-	22,192	-	-	2,114	24,306
Foreign currency translation adjustment	-	-	-	-	-	-	-	902	357	1,259
Exercise of stock options	1,693,095	-	-	-	3,129	-	-	-	-	3,129
Stock-based compensation	-	-	-	-	3,823	-	-	-	-	3,823
Exercise of stock warrants	728,043	-	-	-	1,820	-	-	-	-	1,820
Conversion of Class B common stock to Class A common stock	285,003	-	(285,003)	-	-	-	-	-	-	-
Balance at September 30, 2021	53,396,220	\$ 5	5,122,815	\$ 1	\$ 110,772	\$ 52,091	\$ 4,388	\$ 5,759	\$ 69,491	\$ 242,507
	Common Stock Class A		Common Stock Class B		Additional Paid- in Capital	Retained earnings	Statutory Surplus Reserve	Accumulated Other Comprehensive Income (Loss)	Non-controlling interests	Total Equity
	Shares (1)	Amount	Shares (1)	Amount						
Balance at December 31, 2021	53,608,929	\$ 5	5,087,814	\$ 1	\$ 595,045	\$ 63,732	\$ 8,312	\$ 9,109	\$ 135,461	\$ 811,665
Net income	-	-	-	-	-	27,454	-	-	8,927	36,381
Foreign currency translation adjustment	-	-	-	-	-	-	-	(67,029)	(13,305)	(80,334)
Exercise of stock options	763,584	-	-	-	1,150	-	-	-	-	1,150
Stock-based compensation	-	-	-	-	5,236	-	-	-	-	5,236
Conversion of Class B common stock to Class A common stock	1,002	-	(1,002)	-	-	-	-	-	-	-
Balance at September 30, 2022	54,373,515	\$ 5	5,086,812	\$ 1	\$ 601,431	\$ 91,186	\$ 8,312	\$ (57,920)	\$ 131,083	\$ 774,098

(1) Prior period results have been adjusted to reflect the three-for-one stock split effected in the form of a stock dividend in March 2022. See Note 1 for details

The accompanying notes are an integral part of these condensed consolidated financial statements.

ACM RESEARCH, INC.
Condensed Consolidated Statements of Changes in Stockholders' Equity
For the Three Months Ended September 30, 2022 and 2021
(In thousands, except share and per share data)
(Unaudited)

	<u>Common Stock Class A</u>		<u>Common Stock Class B</u>		Additional Paid-in Capital	Retained earnings	Statutory Surplus Reserve	Accumulated Other Comprehensive Income	Non-controlling interests	Total Equity
	Shares (1)	Amount	Shares (1)	Amount						
Balance at June 30, 2021	53,005,227	\$ 5	5,122,815	\$ 1	\$ 108,562	\$ 41,936	\$ 4,388	\$ 5,931	\$ 68,733	229,556
Net income	-	-	-	-	-	10,155	-	-	995	11,150
Foreign currency translation adjustment	-	-	-	-	-	-	-	(172)	(237)	(409)
Exercise of stock options	390,993	-	-	-	932	-	-	-	-	932
Stock-based compensation	-	-	-	-	1,278	-	-	-	-	1,278
Balance at September 30, 2021	53,396,220	\$ 5	5,122,815	\$ 1	\$ 110,772	\$ 52,091	\$ 4,388	\$ 5,759	\$ 69,491	\$242,507

	<u>Common Stock Class A</u>		<u>Common Stock Class B</u>		Additional Paid-in Capital	Retained earnings	Statutory Surplus Reserve	Accumulated Other Comprehensive Income (Loss)	Non-controlling interests	Total Equity
	Shares	Amount	Shares	Amount						
Balance at June 30, 2022	54,141,805	\$ 5	5,086,812	\$ 1	\$ 599,138	\$ 70,182	\$ 8,312	\$ (22,633)	\$ 132,140	\$787,145
Net income	-	-	-	-	-	21,004	-	-	6,072	27,076
Foreign currency translation adjustment	-	-	-	-	-	-	-	(35,287)	(7,129)	(42,416)
Exercise of stock options	231,710	-	-	-	400	-	-	-	-	400
Stock-based compensation	-	-	-	-	1,893	-	-	-	-	1,893
Balance at September 30, 2022	54,373,515	\$ 5	5,086,812	\$ 1	\$ 601,431	\$ 91,186	\$ 8,312	\$ (57,920)	\$ 131,083	\$774,098

(1) Prior period results have been adjusted to reflect the three-for-one stock split effected in the form of a stock dividend in March 2022. See Note 1 for details

ACM RESEARCH, INC.
Condensed Consolidated Statements of Cash Flows
(In thousands)
(Unaudited)

	Nine Months Ended September 30,	
	2022	2021
Cash flows from operating activities:		
Net income	\$ 36,381	\$ 24,306
Adjustments to reconcile net income from operations to net cash used in operating activities		
Depreciation and amortization	4,104	1,597
Realized gain on trading securities	(1,136)	-
Equity income in net income of affiliates	(1,652)	(1,036)
Unrealized loss (gain) on trading securities	9,562	(1,817)
Deferred income taxes	5,036	(4,666)
Stock-based compensation	5,236	3,823
Net changes in operating assets and liabilities:		
Accounts receivable	(96,840)	(28,135)
Other receivables	(1,309)	(3,227)
Inventories	(132,037)	(87,613)
Advances to related party (note 16)	(2,775)	(585)
Prepaid expenses	(6,387)	(1,031)
Other long-term assets	851	(3,747)
Related party accounts payable (note 16)	(1,310)	4,167
Accounts payable	10,155	53,116
Advances from customers	88,888	34,879
Deferred revenue	1,731	2,403
Income taxes payable	8,337	1,204
FIN-48 payable	(228)	-
Other payables and accrued expenses	13,755	5,938
Other long-term liabilities	(3,892)	(3,398)
Net cash flow used in operating activities	(63,530)	(3,822)
Cash flows from investing activities:		
Purchase of property and equipment	(18,417)	(5,059)
Purchase of intangible assets	(1,079)	(418)
Increase of short-term time deposits	(66,176)	-
Increase of long-term time deposits	(70,400)	-
Proceeds from selling trading securities	4,488	-
Investments in affiliates	(1,000)	-
Purchase of long term investment (Note 14)	(4,196)	-
Net cash used in investing activities	(156,780)	(5,477)
Cash flows from financing activities:		
Proceeds from short-term borrowings	50,688	17,988
Repayments of short-term borrowings	(13,694)	(28,988)
Proceeds from long-term borrowings	-	6,939
Repayments of long-term borrowings	(1,708)	(1,193)
Proceeds from exercise of stock options	1,150	3,129
Proceeds from warrant exercise to common stock	-	1,820
Net cash (used in) provided by financing activities	36,436	(305)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	\$ (42,551)	\$ 2,874
Net decrease in cash, cash equivalents and restricted cash	\$ (226,425)	\$ (6,730)
Cash, cash equivalents and restricted cash at beginning of period	563,067	71,766
Cash, cash equivalents and restricted cash at end of period	\$ 336,642	\$ 65,036
Supplemental disclosure of cash flow information:		
Interest paid, net of capitalized interest	\$ 986	\$ 574
Cash paid for income taxes	\$ 182	\$ 606
Reconciliation of cash, cash equivalents and restricted cash in condensed consolidated statements of cash flows:		
Cash and cash equivalents	336,275	64,517
Restricted cash	367	519
Cash, cash equivalents and restricted cash	\$ 336,642	\$ 65,036
Non-cash financing activities:		
Conversion of Class B common stock to Class A common stock	\$ 1,002	\$ 285,003
Cashless exercise of stock options	\$ 125	\$ 118
Non-cash investing activities:		
Transfer of prepayment for property to property plant and equipment	\$ 41,497	\$ -

ACM RESEARCH, INC.
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NOTE 1 – DESCRIPTION OF BUSINESS

ACM Research, Inc. (“ACM”) and its subsidiaries (collectively with ACM, the “Company”) develop, manufacture and sell single-wafer wet-cleaning equipment used to improve the manufacturing process and yield for advanced integrated chips. The Company markets and sells its single-wafer wet-cleaning equipment, which are based on the Company’s proprietary Space Alternated Phase Shift (“SAPS”) and Timely Energized Bubble Oscillation (“TEBO”) technologies, under the brand name “Ultra C.” These tools are designed to remove random defects from a wafer surface efficiently, without damaging the wafer or its features, even at increasingly advanced process nodes.

ACM was incorporated in California in 1998, and it initially focused on developing tools for manufacturing process steps involving the integration of ultra low-K materials and copper. The Company’s early efforts focused on stress-free copper-polishing technology, and it sold tools based on that technology in the early 2000s.

In 2006, the Company established its operational center in Shanghai in the People’s Republic of China (the “PRC”), where it operates through ACM’s subsidiary, ACM Research (Shanghai), Inc. (“ACM Shanghai”). ACM Shanghai was formed to help establish and build relationships with integrated circuit manufacturers in the PRC, and the Company initially financed its Shanghai operations in part through sales of non-controlling equity interests in ACM Shanghai.

In 2007, the Company began to focus its development efforts on single-wafer wet-cleaning solutions for the front-end chip fabrication process. The Company introduced its SAPS megasonic technology, which can be applied in wet wafer cleaning at numerous steps during the chip fabrication process, in 2009. It introduced its TEBO technology, which can be applied at numerous steps during the fabrication of small node two-dimensional conventional and three-dimensional patterned wafers, in March 2016. The Company has designed its equipment models for SAPS and TEBO solutions using a modular configuration that enables it to create a wet-cleaning tool meeting the specific requirements of a customer, while using pre-existing designs for chamber, electrical, chemical delivery and other modules. In August 2018, the Company introduced its Ultra-C Tahoe wafer cleaning tool, which can deliver high cleaning performance with significantly less sulfuric acid than typically consumed by conventional high-temperature single-wafer cleaning tools. Based on its electro-chemical plating (“ECP”) technology, the Company introduced in March 2019 its Ultra ECP AP, or “Advanced Packaging,” tool for bumping, or applying copper, tin and nickel to semiconductor wafers at the die-level, and its Ultra ECP MAP, or “Multi-Anode Partial Plating,” tool to deliver advanced electrochemical copper plating for copper interconnect applications in front-end wafer fabrication processes. The Company also offers a range of custom-made equipment, including cleaners, coaters and developers, to back-end wafer assembly and packaging factories, principally in the PRC.

In 2011, ACM Shanghai formed a wholly-owned subsidiary in the PRC, ACM Research (Wuxi), Inc. (“ACM Wuxi”), to manage sales and service operations.

In November 2016, ACM re-domesticated from California to Delaware pursuant to a merger in which ACM Research, Inc., a California corporation, was merged into a newly formed, wholly-owned Delaware subsidiary, also named ACM Research, Inc.

In June 2017, ACM formed a wholly-owned subsidiary in Hong Kong, CleanChip Technologies Limited (“CleanChip”), to act on the Company’s behalf in Asian markets outside the PRC by, for example, serving as a trading partner between ACM Shanghai and its customers, procuring raw materials and components, performing sales and marketing activities, and making strategic investments.

In August 2017, ACM purchased 18.77% of ACM Shanghai’s equity interests held by Shanghai Science and Technology Venture Capital Co., Ltd. On November 8, 2017, ACM purchased the remaining 18.36% of ACM Shanghai’s equity interests held by third parties, Shanghai Pudong High-Tech Investment Co., Ltd. and Shanghai Zhangjiang Science & Technology Venture Capital Co., Ltd. At December 31, 2017, ACM owned all of the outstanding equity interests of ACM Shanghai, and indirectly through ACM Shanghai, owned all of the outstanding equity interests of ACM Wuxi.

ACM RESEARCH, INC.
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In December 2017, ACM formed a wholly-owned subsidiary in the Republic of Korea, ACM Research Korea CO., LTD. (“ACM Korea”), to serve customers based in Republic of Korea and perform sales and marketing and research and development (“R&D”) activities for new products and solutions.

In March 2019, ACM Shanghai formed a wholly-owned subsidiary in the PRC, Shengwei Research (Shanghai), Inc. (“ACM Shengwei”), to manage activities related to the addition of future long-term production capacity.

In June 2019, CleanChip formed a wholly-owned subsidiary in California, ACM Research (CA), Inc. (“ACM California”), to provide procurement services on behalf of ACM Shanghai. In June 2019, ACM Korea was reorganized as a wholly-owned subsidiary of CleanChip.

In June 2019, ACM announced plans to complete a listing (the “STAR Listing”) of shares of ACM Shanghai on the Shanghai Stock Exchange’s Sci-Tech innovAtion boARd, known as the STAR Market, and a concurrent initial public offering (the “STAR IPO”) of ACM Shanghai shares in the PRC. ACM Shanghai is currently ACM’s primary operating subsidiary, and at the time of announcement, was wholly-owned by ACM. To meet a STAR Listing requirement that it have multiple independent stockholders in the PRC, ACM Shanghai completed private placements of its shares in June and November 2019, following which, as of September 30, 2020, the private placement investors held a total of 8.3% of the outstanding shares of ACM Shanghai and ACM Research held the remaining 91.7%. As part of the STAR Listing process, in June 2020 the ownership interests held by the private investors were reclassified from redeemable non-controlling interests to non-controlling interests as the redemption feature was terminated.

In preparation for the STAR IPO, ACM completed a reorganization in December 2019 that included the sale of all of the shares of CleanChip by ACM to ACM Shanghai for \$3,500. The reorganization and sale had no impact on ACM’s consolidated financial statements.

In August 2021, ACM formed a wholly-owned subsidiary in Singapore, ACM Research (Singapore) PTE, Ltd. (“ACM Singapore”), to perform sales, marketing, and other business development activities.

In November 2021, ACM Shanghai completed its STAR Listing and STAR IPO and its shares began trading on the STAR Market. In the STAR IPO, ACM Shanghai issued 43,355,753 shares, representing 10% of the total 433,557,100 shares outstanding after the issuance. The shares were issued at a public offering price of RMB 85.00 per share, and the net proceeds of the STAR IPO, after issuance costs, totaled \$545,512. Upon completion of the STAR IPO, ACM owned 82.5% of the outstanding ACM Shanghai shares.

In February 2022, ACM Shanghai formed a wholly-owned subsidiary in China, ACM Research (Beijing), Inc. (“ACM Beijing”), to perform sales, marketing and other business development activities.

In March 2022, ACM formed a wholly-owned subsidiary in South Korea, Hanguk ACM CO., LTD, to perform business development and other related activities.

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In March 2022, the Board of Directors of ACM declared a 3-for-1 stock split of Class A and Class B common stock effected in the form of a stock dividend (the “Stock Split”). Each stockholder of record at the close of business on March 16, 2022, received a dividend of two additional shares of Class A common stock for each then-held share of Class A common stock and two additional shares of Class B common stock for each then-held share of Class B common stock, which were distributed after the close of trading on March 23, 2022. Unless otherwise indicated, all share numbers, per share amount, share prices, exercise prices and conversion rates set forth in these notes and the accompanying condensed consolidated financial statements have been adjusted retrospectively to reflect the Stock Split.

The Company has direct or indirect interests in the following subsidiaries:

Name of subsidiaries	Place and date of incorporation	Effective interest held as at	
		September 30, 2022	December 31, 2021
ACM Research (Shanghai), Inc.	PRC, May 2005	82.5%	82.5%
ACM Research (Wuxi), Inc.	PRC, July 2011	82.5%	82.5%
CleanChip Technologies Limited	Hong Kong, June 2017	82.5%	82.5%
ACM Research Korea CO., LTD.	Korea, December 2017	82.5%	82.5%
Shengwei Research (Shanghai), Inc.	PRC, March 2019	82.5%	82.5%
ACM Research (CA), Inc.	USA, April 2019	82.5%	82.5%
ACM Research (Cayman), Inc.	Cayman Islands, April 2019	100.0%	100.0%
ACM Research (Singapore) PTE. Ltd.	Singapore, August 2021	100.0%	100.0%
ACM Research (Beijing), Inc.	PRC, February 2022	82.5%	—
Hanguk ACM CO., LTD.	Korea, March 2022	100.0%	—

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation and Principles of Consolidation

The Company’s condensed consolidated financial statements include the accounts of ACM and its subsidiaries, including ACM Shanghai and its subsidiaries, which include ACM Wuxi, ACM Shengwei, ACM Beijing, and CleanChip (the subsidiaries of which include ACM California and ACM Korea). ACM’s subsidiaries are those entities in which ACM, directly or indirectly, controls a majority of the voting power. All significant intercompany transactions and balances have been eliminated upon consolidation.

The accompanying condensed consolidated financial statements of the Company have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) for interim financial information and the rules and regulations of the Securities and Exchange Commission (the “SEC”) for reporting on Form 10-Q. Accordingly, they do not include all the information and footnotes required by GAAP for complete financial statements. The accompanying condensed consolidated financial statements should be read in conjunction with the historical consolidated financial statements of the Company for the year ended December 31, 2021 included in ACM’s Annual Report on Form 10-K for the year ended December 31, 2021.

The accompanying condensed consolidated balance sheet as of September 30, 2022, condensed consolidated statements of operations and comprehensive income (loss) for the three and nine months ended September 30, 2022 and 2021, condensed consolidated statements of changes in equity for the three and nine months ended September 30, 2022 and 2021, and condensed consolidated statements of cash flows for the nine months ended September 30, 2022 and 2021 are unaudited. In the opinion of management, these unaudited condensed consolidated financial statements of the Company reflect all adjustments that are necessary for a fair presentation of the Company’s financial position and results of operations. Such adjustments are of a normal recurring nature, unless otherwise noted. The balance sheet as of September 30, 2022 and the results of operations for the three and nine months ended September 30, 2022 are not necessarily indicative of the results to be expected for any future period.

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Common Stock Split

Unless otherwise indicated, all prior period share and per share amounts, common stock, other capital, and retained earnings information presented in the accompanying financial statements and these notes thereto has been retroactively adjusted to reflect the impact of the Stock Split (Note 1). Proportional adjustments were also made to outstanding awards under the Company's stock-based compensation plans.

Reclassification

Certain prior year amounts related to related party transactions have been reclassified to conform to the current year presentation. Also, a portion of the prior period balance for retained earnings on the Company's consolidated balance sheet as of December 31, 2021 has been reclassified to Statutory surplus reserve to conform to the current period presentation. These reclassifications did not have a material impact on the previously reported financial statements.

New Restrictions by U.S. Department of Commerce for PRC-based Semiconductor Producers

Substantially all of ACM Shanghai's customers and a significant portion of its operations are based in the PRC. In 2021, 48.9% of our revenue was derived from two customers: Shanghai Huali Microelectronics Corporation, together with Huahong Semiconductor Ltd., collectively known as The Shanghai Huahong (Group) Company, Ltd., or The Huali Huahong Group, a leading PRC-based foundry, accounted for 28.1% of our revenue; and Yangtze Memory Technologies Co., Ltd., a leading PRC-based memory chip company, together with one of its subsidiaries, accounted for 20.8% of our revenue; In 2020, 75.8% of our revenue was derived from three customers: The Huali Huahong Group accounted for 36.9% of our revenue; Yangtze Memory Technologies Co., Ltd., together with one of its subsidiaries, accounted for 26.8% of our revenue; and Semiconductor Manufacturing International Corporation, a leading PRC-based foundry, accounted for 12.1% of our revenue.

In early October, 2022, the U.S. government enacted new rules aimed at restricting U.S. support for the PRC's ability to manufacture advanced semiconductors. The rules include new export license requirements for exports to the PRC of additional types of semiconductor manufacturing items and items for use in manufacturing designated types of semiconductor manufacturing equipment in the PRC, as well as new restrictions in connection with the supply of semiconductor manufacturing equipment to certain IC manufacturing and development facilities in the PRC. In addition, U.S. persons are effectively barred from engaging in certain activities related to the development and production of certain semiconductors in China, even if no items subject to the EAR are involved. These rules may impact the supply of some items sourced from the U.S. or that are otherwise subject to control under the EAR in connection with the manufacture and supply of ACM Shanghai tools meeting certain characteristics or intended for certain customers. As such, these new rules may directly impact ACM Shanghai's ability to meet its future production plans, or indirectly impact the spending plans of ACM Shanghai's customer base. Also as part of the recent October 2022 actions, Yangtze Memory Technologies Co., Ltd. (YMTC), a leading PRC memory chip company was added to the Unverified List of the EAR alongside a number of other Chinese entities. The Unverified List identifies parties for whom BIS has been unable to confirm their bona fides (i.e., legitimacy and reliability about the end-use and end-user of items subject to the EAR). Entities listed on the Unverified List are ineligible to receive items subject to the EAR by means of a license exception if a U.S. export license is required. Challenges faced by YMTC and its key suppliers as a result of the listing could indirectly impact YMTC's demand for, or ACM Shanghai's ability to supply, ACM Shanghai products. ACM and ACM Shanghai are evaluating the potential direct impact of the regulations, including potential required modifications to their business policies and practices in the PRC, and any expected changes in the capital spending plans of ACM Shanghai's customer base.

COVID-19 Assessment

The worldwide COVID-19 health pandemic and related government and private sector responsive actions have adversely affected the economies and financial markets of many countries and specifically have negatively impacted the Company's business operations, including in the PRC and the United States. The continuation of the COVID-19 pandemic could continue to result in economic uncertainty and global economic policies that could reduce demand for the Company's products and its customers' chips and have a material adverse impact on the Company's business, operating results and financial condition.

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The Company conducts substantially all of its product development, manufacturing, support and services in the PRC, and those activities have been directly impacted by COVID-19 and related restrictions on transportation and public appearances.

- In March 2022, several regions in China began to experience elevated levels of COVID-19 infections, and the PRC government instituted policies to restrict the spread of the virus. The policies began with an increase of “spot quarantines,” under which a positive polymerase chain reaction (PCR) or other test would result in the quarantining of individual buildings, groups of buildings, or even full neighborhoods. The policies were later expanded to full-city quarantines, including in the City of Shanghai, where substantially all of ACM Shanghai’s operations are located. COVID-19 related restrictions in Shanghai began to limit employee access to, and logistics activities of, ACM Shanghai’s offices and production facilities in the Pudong district of Shanghai in March 2022, and therefore limited ACM Shanghai’s ability to ship finished products to customers and to produce new products. Spot quarantines in mid-March 2022 began to impact a number of ACM Shanghai’s employees and led to a closure of ACM Shanghai’s administrative and R&D offices in Zhangjiang in the Pudong district. A subsequent quarantine of the entire Pudong region of Shanghai was imposed in late March 2022 and impacted the operation of ACM Shanghai’s Chuansha production facility. Although the facility remained partially operational with a number of personnel staying on-site for a prolonged period, the level of production declined significantly versus more normal levels. Furthermore, a number of the Company’s customers have substantial operations based in operations areas of the PRC, including in the City of Shanghai, subject to full-city restrictions, which began limiting the operations of those customers since the first quarter of 2022, including inhibiting their ability to receive, implement and operate new tools for their manufacturing facilities. As a result, in some cases, ACM Shanghai was required to defer shipments of finished products to these customers because of operational and logistical limitations affecting customers other than, or in addition to, ACM Shanghai.
- In late April 2022, ACM Shanghai began to increase the level of its operations at the Chuansha manufacturing site using the “closed loop method,” in which a limited collection of workers remain together as a group between a single hotel, the ACM Shanghai facility, and a dedicated bus transportation route, also referred to as “two spots and one line,” and had resumed substantially all of its Chuansha manufacturing site operations by the end of the second quarter of 2022. On July 1, 2022, the Company transitioned operations at the Chuansha facility to a more normal production process, in which workers were able to return home following their factory shifts.
- In mid-June 2022, substantially all of ACM Shanghai’s R&D and administrative employees were allowed to return to work at the ZhangJiang facility following a 6-8 weeks period of restricted access during which many employees had continued to work from home. ACM Shanghai has established several policies to help avoid or limit future outbreaks among employees and aimed at protecting employee safety and limiting the possibility of a facility reclosing.

During the first six months of 2022, the Company experienced a negative impact to revenue and shipments as a result of restricted access and logistics to its Shanghai-based production and administrative facilities. Thirteen tools amounting to \$13 million in revenue and \$24 million in shipments that could not be shipped to customers in the three-months ended March 30, 2022 were subsequently shipped in the three months ended June 30, 2022. As a result of the restrictions, the Company experienced a modest increase to operational costs due to increased logistics costs and inefficiencies that resulted from the restrictions, and an increase in cash used in operations due in part to an increase in accounts receivables that resulted from a shift of shipments towards the latter part of the period.

During the three and nine-months ended September 30, 2022, the Company experienced general inefficiencies in administrative, research and development and other activities due to some employees who were required to quarantine ‘in place’ at their residence due presumably to the detected possible exposure to COVID infections. In many cases, the employees were able to work remotely to mitigate the effects. The Company anticipates the PRC’s zero-covid policy will impact its PRC operations for the foreseeable future in the form of regular testing and/or required quarantines-in-place. Closures or reductions of operations or production, whether of ACM Shanghai or of some of its key customers, may be extended or re-introduced during the remainder of 2022 as the result of business interruptions arising from protective measures being taken by the PRC and other governmental agencies or of other consequences of COVID-19.

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The Company's corporate headquarters are located in Fremont, California. The effects of actions taken by local governmental agencies in the future may negatively impact productivity, disrupt the business of the Company and delay timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on the Company's ability to conduct its business in the ordinary course.

To date, the Company's operations in South Korea, including the R&D center and production facilities of ACM Korea and the business development activities of Hanguk ACM CO., LTD, have been largely unaffected directly by government restrictions relating to the COVID-19 pandemic.

The worldwide prolonged and broad-based shift to remote working environments resulting from COVID-19 continues to create inherent productivity, connectivity, and oversight challenges and could affect the Company's ability to enhance, develop and support existing products and services, detect and prevent spam and problematic content, hold product sales and marketing events, and generate new sales leads. In addition, the changed environment under which the Company is operating could have an effect on its internal controls over financial reporting as well as its ability to comply with a number of timing and quality requirements. Additional or extended governmental quarantines, restrictions or regulations could significantly impact the ability of the Company's employees and vendors to work productively. Governmental restrictions have been inconsistent globally and it remains unclear when a return to worksite locations or travel will be permitted or what restrictions will be in place in those environments. As the Company continues to return its workforce to the office in 2022, it may experience increased costs as it prepares and maintains its facilities for a safe work environment and experiments with hybrid work models and it may suffer additional adverse effects on its ability to compete effectively and maintain its corporate culture.

Extended periods of interruption to the Company's corporate, development or manufacturing facilities due to the COVID-19 pandemic could cause the Company to lose revenue and market share, which would depress its financial performance and could be difficult to recapture. The Company's business may also be harmed if travel to or from the PRC or the United States continues to be restricted or inadvisable or if members of management and other employees are absent because they contract COVID-19, they elect not to come to work due to the illness affecting others in the Company's office or laboratory facilities, or they are subject to quarantines or other governmentally imposed restrictions.

Use of Estimates

The preparation of the condensed consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the balance sheet date and the reported revenues and expenses during the reported period in the condensed consolidated financial statements and accompanying notes. The Company's significant accounting estimates and assumptions include, but are not limited to, those used for revenue recognition and deferred revenue, the valuation and recognition of fair value of trading securities, stock-based compensation arrangements, realization of deferred tax assets, assessment for impairment of long-lived assets, allowance for doubtful accounts, inventory valuation, depreciable lives of property, plant and equipment and useful lives of intangible assets.

Management evaluates these estimates and assumptions on a regular basis. Actual results could differ from those estimates and assumptions.

Cash and Cash Equivalents

Cash and cash equivalents consist of cash on hand, bank deposits that are unrestricted as to withdrawal and use, and highly liquid investments with an original maturity date of three months or less at the date of purchase.

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The following table presents cash and cash equivalents, according to jurisdiction as of September 30, 2022 and December 31, 2021:

	September 30, 2022	December 31, 2021
United States	\$ 27,796	\$ 34,852
Mainland China	216,116	469,494
China Hong Kong	78,398	52,527
South Korea	13,964	5,675
Singapore	1	-
Total	<u>\$ 336,275</u>	<u>\$ 562,548</u>

The amounts in mainland China do not include short-term and long-term time deposits which totaled \$136,576 and \$0 at September 30, 2022 and December 31, 2021, respectively.

Cash held in the U.S. exceeds the Federal Deposit Insurance Corporation (“FDIC”) insurance limits and is subject to risk of loss. No losses have been experienced to date.

For cash amounts held by ACM Shanghai at PRC banks in mainland China are subject to a series of risk control regulatory standards from PRC bank regulatory authorities. ACM Shanghai is required to obtain approval from the State Administration of Foreign Exchange (“SAFE”) to transfer funds into or out of the PRC. SAFE requires a valid agreement to approve the transfers, which are processed through a bank. Other than these PRC foreign exchange restrictions, ACM Shanghai is not subject to any PRC restrictions and limitations on its ability to transfer funds to ACM Research or among our other subsidiaries. However, cash held by ACM Shanghai in mainland China does exceed applicable insurance limits and is subject to risk of loss, although no such losses have been experienced to date.

ACM California periodically procures goods and services on behalf of ACM Shanghai. For these transactions, ACM Shanghai makes cash payments to ACM California in accordance with applicable transfer pricing arrangements. For the nine months ended September 30, 2022, cash payments from ACM Shanghai to ACM California for the procurement of goods and services were \$24.6 million and \$1.6 million, respectively. ACM California periodically borrows funds for working capital advances from its direct parent, CleanChip. ACM California repays these intercompany loans in accordance with their terms. For sales through CleanChip and ACM Research, a certain amount of sales proceeds is repatriated back to ACM Shanghai in accordance with applicable transfer pricing arrangements in the ordinary course of business. Subsequent to June 30, 2020, with the exception of sales and services-related transfer-pricing payments in the ordinary course of business, no cash transfers, dividends or other payments or distributions have been made between the ACM Research and ACM Shanghai. We intend to retain any future earnings to finance the operations and expenses of our business, and we do not expect to distribute earnings or declare or pay any dividends in the foreseeable future.

Amounts held in South Korea exceed the Korea Deposit Insurance Corporation (“KDIC”) insurance limits and is subject to risk of loss. No losses have been experienced to date.

There is no additional restriction for the transfer of cash from bank accounts in the U.S., South Korea, and Hong Kong. For sales through CleanChip and ACM Research, a certain amount of sales proceeds is repatriated back to ACM Shanghai in accordance with the transfer pricing arrangements in the ordinary course of business.

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For the nine months ended September 30, 2022 and 2021, no transfers, dividends, or distributions have been made between ACM Research and its subsidiaries, including ACM Shanghai, or to holders of ACM Research Class A common stock.

Time Deposits

Time deposits are deposited with banks in mainland China with fixed periods and interest rates which cannot be withdrawn before maturity. They are also subject to the risk control regulatory standards described above upon maturity.

Time deposits consisted of the following:

	September 30, 2022	December 31, 2021
Deposit in China Merchant Bank which will mature on January 29, 2023 with an annual interest rate of 2.25%	\$ 38,016	\$ -
Deposit in China Everbright Bank which will mature on January 29, 2023 with an annual interest rate of 2.25%	14,080	-
Deposit in China Industrial Bank which will mature on January 30, 2023 with an annual interest rate of 2.15%	14,080	-
Deposit in China Merchant Bank which will mature on January 29, 2024 with an annual interest rate of 2.85%	28,160	-
Deposit in Bank of Ningbo which will mature on February 17, 2024 with an annual interest rate of 2.85%	42,240	-
	<u>\$ 136,576</u>	<u>\$ -</u>

For the three and nine months ended September 30, 2022, respectively, interest income related to time deposits was \$929 and \$2,468, respectively.

Intangible Assets, Net

Intangible assets consist of capitalized software license and other related fees for items used for finance, manufacturing, and research and development purposes. Assets are valued at cost at the time of acquisition and are amortized over their beneficial periods. If a contract specifies a license period, then the intangible asset is amortized over a term not exceeding the license period. For those intangible assets with contracts that do not specify a license term or for which local law does not specify a license term, management estimates the amortization period based on the period over which the asset is expected to contribute directly or indirectly to the cash flows in accordance with ASC 350, *Intangibles—Goodwill and Other*. The factors include, but are not limited to, the change of technology and the change of type of product. The Company estimated these intangible assets have a useful life of 10 years or less, and accordingly, they are amortized up to 10 years.

Revenue Recognition

The Company derives revenue principally from the sale of semiconductor capital equipment. Revenue from contracts with customers is recognized using the following five steps pursuant ASC Topic 606, *Revenue from Contracts with Customers*:

1. Identify the contract(s) with a customer;
2. Identify the performance obligations in the contract;
3. Determine the transaction price;
4. Allocate the transaction price to the performance obligations in the contract; and
5. Recognize revenue when (or as) the entity satisfies a performance obligation.

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A contract contains a promise (or promises) to transfer goods or services to a customer. A performance obligation is a promise (or a group of promises) that is distinct. The transaction price is the amount of consideration a company expects to be entitled from a customer in exchange for providing the goods or services.

The unit of account for revenue recognition is a performance obligation (a good or service). A contract may contain one or more performance obligations. Performance obligations are accounted for separately if they are distinct. A good or service is distinct if the customer can benefit from the good or service either on its own or together with other resources that are readily available to the customer, and the good or service is distinct in the context of the contract. Otherwise, performance obligations are combined with other promised goods or services until the Company identifies a bundle of goods or services that is distinct. Promises in contracts which do not result in the transfer of a good or service are not performance obligations, as well as those promises that are administrative in nature, or are immaterial in the context of the contract. The Company has addressed whether various goods and services promised to the customer represent distinct performance obligations. The Company applied the guidance of ASC Topic 606 in order to verify which promises should be assessed for classification as distinct performance obligations. The Company's performance obligations in connection with a sale of equipment generally include production, delivery and installation, together with the provision of a warranty. Given that the Company's products are customized based on specifications of its customers, the Company determines that the promise to the customer is to provide a customized product solution. The product and customization services are inputs into the combined item for which the customer has contracted and, as a result, the product and installation services are not separately identifiable and are combined into a single performance obligation. Delivery of goods to a customer is not a separate performance obligation since control of the goods normally does not transfer to the customer before shipment. The Company's warranties provide assurance that its products will function as expected and in accordance with certain specifications. The Company's warranties are intended to safeguard the customer against existing defects and do not provide any incremental service to the customer. They are not separate performance obligations and accounted for under ASC 460, *Guarantees*. Production, delivery and installation of a product, together with provision of a warranty, are a single unit of accounting.

The transaction price is allocated to all the separate performance obligations in an arrangement. It reflects the amount of consideration to which the Company expects to be entitled in exchange for transferring goods or services, which may include an estimate of variable consideration to the extent that it is probable of not being subject to significant reversals in the future based on the Company's experience with similar arrangements. The transaction price excludes amounts collected on behalf of third parties, such as sales taxes. This is done on a relative selling price basis using standalone selling prices ("SSP"). The SSP represents the price at which the Company would sell that good or service on a standalone basis at the inception of the contract. Given the requirement for establishing SSP for all performance obligations, if the SSP is directly observable through standalone sales, then such sales should be considered in the establishment of the SSP for the performance obligation.

For some sale contracts, in addition to the sale of semiconductor capital equipment, the Company also provides certain spare parts to the customers. The Company defers revenue associated with spare parts sold together with its tool products, including production, delivery, installation and warranty which are accounted for as one performance obligation, based on stand-alone observable selling prices for which it receives payments in advance and recognizes the revenue upon the subsequent shipment of the spare parts, which is expected within one year. The deferred revenue was \$4,911 and \$3,180 at September 30, 2022 and December 31, 2021, respectively.

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Revenue is recognized when the Company satisfies each performance obligation by transferring control of the promised goods or services to the customer. Goods or services can transfer at a point in time (upon the acceptance of the products or upon the arrival at the destination as stipulated in the shipment terms) in a sale arrangement. In general, the Company recognizes revenue when a tool has been demonstrated to meet the customer's predetermined specifications and is accepted by the customer. If terms of the sale provide for a lapsing customer acceptance period, the Company recognizes revenue as of the earlier of the expiration of the lapsing acceptance period and customer acceptance. In the following circumstances, however, the Company recognizes revenue upon shipment or delivery, when legal title to the tool is passed to a customer as follows:

- When the customer has previously accepted the same tool with the same specifications and the Company can objectively demonstrate that the tool meets all of the required acceptance criteria;
- When the sales contract or purchase order contains no acceptance agreement or lapsing acceptance provision and the Company can objectively demonstrate that the tool meets all of the required acceptance criteria;
- When the customer withholds acceptance due to issues unrelated to product performance, in which case revenue is recognized when the system is performing as intended and meets predetermined specifications; or
- When the Company's sales arrangements do not include a general right of return.

The Company offers maintenance services, which consist principally of the installation and replacement of parts and small-scale modifications to the equipment. The related revenue and costs of revenue are recognized when parts have been delivered and installed and the customers have obtained control of the parts.

The Company incurs costs related to the acquisition of its contracts with customers in the form of sales commissions. Sales commissions are paid to third party representatives and distributors. Contractual agreements with these parties outline commission structures and rates to be paid. Generally speaking, the contracts are all individual procurement decisions by the customers and are not for significant periods of time, nor do they include renewal provisions. As such, all contracts have an economic life of significantly less than a year. Accordingly, the Company expenses sales commissions when incurred. These costs are recorded within sales and marketing expenses. The Company, therefore, does not have contract assets.

The Company does not incur any costs to fulfill the contracts with customers that are not already reported in compliance with another applicable standard (for example, inventory or plant, property and equipment).

The Company receives payments from customers prior to the transfer of control either upon contract sign-off and/or the delivery of evaluation tools, which are recorded as advances from customers.

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Basic and Diluted Net Income per Common Share

Basic and diluted net income per common share are calculated as follows:

	<u>Three Months Ended September 30,</u>		<u>Nine Months Ended September 30,</u>	
	<u>2022</u>	<u>2021</u>	<u>2022</u>	<u>2021</u>
Numerator:				
Net income	\$ 27,076	\$ 11,150	\$ 36,381	\$ 24,306
Less: Net income attributable to non-controlling interests	6,072	995	8,927	2,114
Net income available to common stockholders, basic	<u>\$ 21,004</u>	<u>\$ 10,155</u>	<u>\$ 27,454</u>	<u>\$ 22,192</u>
Less: Dilutive effect arising from stock-based awards by ACM Shanghai	321	-	465	-
Net income available to common stockholders, diluted	<u>\$ 20,683</u>	<u>\$ 10,155</u>	<u>\$ 26,989</u>	<u>\$ 22,192</u>
Weighted average shares outstanding, basic (1)	59,360,790	58,267,638	59,123,895	57,340,059
Effect of dilutive securities	6,251,875	7,859,910	6,505,378	7,850,961
Weighted average shares outstanding, diluted	<u>65,612,665</u>	<u>66,127,548</u>	<u>65,629,273</u>	<u>65,191,020</u>
Net income per common share:				
Basic	<u>\$ 0.35</u>	<u>\$ 0.17</u>	<u>\$ 0.46</u>	<u>\$ 0.39</u>
Diluted	<u>\$ 0.32</u>	<u>\$ 0.15</u>	<u>\$ 0.41</u>	<u>\$ 0.34</u>

(1) Prior period results have been adjusted to reflect the three-for-one stock split effected in the form of a stock dividend in March 2022. See Note 1 for details.

ACM Research has been authorized to issue Class A and Class B common stock since redomesticating in Delaware in November 2016. The two classes of common stock are substantially identical in all material respects, except for voting rights. Since ACM Research did not declare any cash dividends during the three and nine months ended September 30, 2022 or 2021, the net income per common share attributable to each class is the same under the “two-class” method. As such, the two classes of common stock have been presented on a combined basis in the condensed consolidated statements of operations and comprehensive income (loss) and in the above computation of net income per common share.

Diluted net income per common share reflects the potential dilution from securities, including stock options and issued warrants, that could share in ACM Research’s earnings. Certain potential dilutive securities were excluded from the net income per share calculation because the impact would be anti-dilutive. ACM Research’s potential dilutive securities consist of stock options for the three and nine months ended September 30, 2022 and 2021.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to credit risk consist principally of cash and cash equivalents, time deposits, and accounts receivable. The Company deposits and invests its cash with financial institutions that management believes are creditworthy.

The Company is potentially subject to concentrations of credit risks in its accounts receivable. For the three months ended September 30, 2022 and 2021, three customers accounted for 61.4% and three customers accounted for 77.1% of revenue, respectively. For the nine months ended September 30, 2022 and 2021, three customers accounted for 50.1% and three customers accounted for 65.6% of revenue, respectively.

As of September 30, 2022 and December 31, 2021, two customers accounted for 56.1% and two customers accounted for 53.8%, respectively, of the Company’s accounts receivables. The Company believes that the receivable balances from these largest customers do not represent a significant credit risk based on past collection experience.

Recent Accounting Pronouncements Not Yet Adopted

In June 2016, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, 2016-13, *Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. ASU 2016-13 replaced the pre-existing incurred loss impairment methodology with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. ASU 2016-13 requires use of a forward-looking expected credit loss model for accounts receivables, loans and other financial instruments. ASU 2016-13 is effective for fiscal years beginning after December 15, 2019, with early adoption permitted but the effective date is changed by ASU 2019-10 below.

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In November 2019, the FASB issued ASU 2019-10, *Financial Instruments – Credit Losses (Topic 326), Derivatives and Hedging (Topic 815), and Leases (Topic 842): Effective Dates*. In advance of the issuance of ASU 2019-10, the Company adopted ASU 2017-12, *Derivatives and Hedging (Topic 815)* and ASU 2016-02, *Leases (Topic 842)* since January 1, 2019. ASU 2019-10 defers the effective date of ASU 2016-13 for public filers that are considered small reporting companies (“SRC”) as defined by the SEC to fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. Since the Company was eligible to be an SRC based on its SRC determination as of November 15, 2019 (which is the issuance date of ASU 2019-10) in accordance with SEC regulations, the Company will adopt amendments in ASU 2016-13 for the year beginning January 1, 2023. Adoption of the standard requires using a modified retrospective approach through a cumulative-effect adjustment to retained earnings as of the effective date to align existing credit loss methodology with the new standard. The Company is evaluating the impact of this standard on its condensed consolidated financial statements, including accounting policies, processes and systems and expects the standard will not have a significant impact on its condensed consolidated financial statements.

NOTE 3 – REVENUE FROM CONTRACTS WITH CUSTOMERS

The Company assesses revenues based upon the nature or type of goods or services it provides and the geographic location of the related businesses. The following tables present disaggregated revenue information:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Single wafer cleaning, Tahoe and semi-critical cleaning equipment	\$ 99,720	\$ 49,448	\$ 198,336	\$ 127,322
ECP (front-end and packaging), furnace and other technologies	24,521	8,200	57,269	13,750
Advanced packaging (excluding ECP), services & spares	9,468	9,365	24,685	23,537
Total Revenue By Product Category	\$ 133,709	\$ 67,013	\$ 280,290	\$ 164,609
Wet-cleaning and other front-end processing tools	\$ 117,941	\$ 49,448	\$ 229,195	\$ 127,322
Advanced packaging, other processing tools, services and spares	15,768	17,565	51,095	37,287
Total Revenue Front-end and Back-End	\$ 133,709	\$ 67,013	\$ 280,290	\$ 164,609
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Mainland China	\$ 131,180	\$ 66,887	\$ 273,585	\$ 164,319
Other Regions	2,529	126	6,705	290
	\$ 133,709	\$ 67,013	\$ 280,290	\$ 164,609

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Below are the accounts receivables and contract liabilities balances as of:

	<u>September 30,</u> <u>2022</u>	<u>December 31,</u> <u>2021</u>
Accounts receivable	\$ 188,341	\$ 105,553
Advances from customers	136,610	52,824
Deferred revenue	4,911	3,180

During the nine-months ended September 30, 2022, advances from customers increased by \$83.8 million, due to an increase of payments made by customers for first tools under evaluation, and an increase in pre-payments for tools made by customers prior to delivery.

NOTE 4 – ACCOUNTS RECEIVABLE

Accounts receivable consisted of the following:

	<u>September 30,</u> <u>2022</u>	<u>December 31,</u> <u>2021</u>
Accounts receivable	\$ 188,341	\$ 105,553
Less: Allowance for doubtful accounts	-	-
Total	<u>\$ 188,341</u>	<u>\$ 105,553</u>

The \$82.8 million increase in accounts receivable for the first nine months of 2022 corresponds to a \$115.7 million increase in revenue for the same period.

The Company reviews accounts receivable on a periodic basis and makes general and specific allowances when there is doubt as to the collectability of individual balances. Based on the age of the balance, a customer's payment history and credit worthiness, current economic trends and reasonable and supportable forecasts, the Company determined there were no collectability issues as of September 30, 2022 and December 31, 2021, and no allowance for doubtful accounts was necessary.

NOTE 5 – INVENTORIES

Inventories consisted of the following:

	<u>September 30,</u> <u>2022</u>	<u>December 31,</u> <u>2021</u>
Raw materials	\$ 145,071	\$ 90,552
Work-in-process	73,533	35,840
Finished goods	109,188	91,724
Total inventory	<u>\$ 327,792</u>	<u>\$ 218,116</u>

Inventories are stated at the lower of cost or net realizable value on a moving weighted average basis. At September 30, 2022 and December 31, 2021, the value of finished goods inventory, which is comprised of first-tools, for which customers were contractually obligated to take ownership upon acceptance totaled \$79,821 and \$71,889, respectively.

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The \$92.2 million increase in raw materials and work-in-process inventory at September 30, 2022 compared to December 31, 2021 was due to additional purchase of supplies to support a higher level of expected total shipments for the next several quarters, and to reduce the risk of supply chain delays to meet anticipated customer demand for the Company's products. The \$17.5 million increase in finished goods inventory at September 30, 2022 compared to December 31, 2021 primarily reflects a higher value of first-tools under evaluation by existing or prospective customers, due to shipments made, net of customer acceptances during the period.

The Company's products each require a certain degree of customization, and the substantial majority of the work-in-process inventory and finished goods inventory is built to meet a specific customer order for repeat shipment of first tool delivery. At the end of each period, the Company assesses the status of each item in work-in-process and finished goods and inventory. The Company recognizes a loss or impairment if in management's judgement the inventory cannot be sold or used for production, if it has been damaged or should be considered as obsolete, or if the net realizable value is lower than the cost.

At the end of each period, the Company also assesses the status of its raw materials. The Company recognizes a loss or impairment for any raw materials aged more than three years for which the Company determines it is not likely to be used in future production. The three-year aging is based on the Company's assessment of technology change, its requirement to maintain stock for warranty coverage, and other factors.

During the three and nine months ended September 30, 2022, inventory write-downs of \$1,157 and \$1,739 were recognized in cost of revenue, respectively.

NOTE 6 – PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment consisted of the following:

	September 30,	December 31,
	2022	2021
Buildings and plants	\$ 37,168	\$ -
Manufacturing equipment	8,060	7,973
Office equipment	3,410	2,012
Transportation equipment	193	217
Leasehold improvement	6,448	4,134
Total cost	55,279	14,336
Less: Total accumulated depreciation and amortization	(8,511)	(5,900)
Construction in progress	19,702	5,606
Total property, plant and equipment, net	<u>\$ 66,470</u>	<u>\$ 14,042</u>

Depreciation and amortization expense was \$1,075 and \$501 for the three months ended September 30, 2022 and 2021, respectively, and \$3,281 and \$1,407 for the nine months ended September 30, 2022 and 2021, respectively. Buildings and plants represent Lingang housing property that was transferred to ACM Shengwei in January 2022 at a value of \$41,497, which includes the purchase price and accumulated interest, and with estimated useful lives of 30-years (Note 8). Buildings and plants are pledged as security for loans from China Merchants Bank (Note 12). Construction in progress primarily reflects costs incurred related to the construction of several facilities in Lingang by ACM Shengwei, and are scheduled to begin production in 2023 and beyond.

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NOTE 7 – LAND USE RIGHT, NET

A summary of land use right is as follows:

	September 30, 2022	December 31, 2021
Land use right purchase amount	\$ 8,950	\$ 9,966
Less: accumulated amortization	(403)	(299)
Land use right, net	<u>\$ 8,547</u>	<u>\$ 9,667</u>

In 2020, ACM Shanghai, through its wholly-owned subsidiary ACM Shengwei, entered into an agreement for a 50-year land use right in the Lingang region of Shanghai. In July 2020, ACM Shengwei began a multi-year construction project for a new 1,000,000 square foot development and production center that will incorporate new manufacturing systems and automation technologies and will provide floor space to support significantly increased production capacity and related research and development activities.

The amortization for the three months ended September 30, 2022 and 2021 was \$45 and \$49, respectively, and for the nine months ended September 30, 2022 and 2021 was \$144 and \$147, respectively.

The annual amortization of land use right for each of the next five years is as follows:

	Year ending December 31,
remainder of 2022	\$ 50
2023	200
2024	200
2025	200
2026	200

NOTE 8 – OTHER LONG-TERM ASSETS

Other long-term assets consisted of the following:

	September 30, 2022	December 31, 2021
Prepayment for property - Lingang	\$ -	\$ 42,111
Prepayment for property, plant and equipment and other non-current assets	240	440
Prepayment for property - lease deposit	385	429
Security deposit for land use right	694	773
Others	1,054	1,264
Total other long-term assets	<u>\$ 2,373</u>	<u>\$ 45,017</u>

Prepayment for property – Lingang is for the housing in Lingang, Shanghai and consists of (1) the contractual amount to acquire the property and (2) capitalized interest charges on the long-term loan related to acquisition of the property, which amounted to \$1,048 at the time of transfer in 2022 and \$986 as of December 31, 2021. Pursuant to contractual agreements, ownership of the housing in Lingang, Shanghai was transferred to ACM Shengwei in January 2022 at a value of \$41,497 at the time of transfer, and \$42,111 as of December 31, 2021, which reflected the purchase price and cumulative capitalized interest charges related to the long-term loan from China Merchants Bank (Note 12). Subsequent to the transfer of ownership, Prepayment for property – Lingang was reclassified to property, plant and equipment (Note 6).

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NOTE 9 – SHORT-TERM BORROWINGS

Short-term borrowings consisted of the following:

	September 30,	December 31,
	2022	2021
Line of credit up to RMB 100,000 from Bank of Shanghai Pudong Branch,		
1)due on June 7,2022 with an annual interest rate of 2.7% and fully repaid on June 7, 2022.(1)	\$ -	\$ 4,616
Line of credit up to RMB 150,000 from China Everbright Bank,		
1)due on October 21,2022 with annual interest rate of 1.95% and fully repaid on September 27, 2022.	-	3,407
2)due on August 17,2023 with an annual interest rate of 3.40%.	8,448	-
3)due on September 1,2023 with an annual interest rate of 3.60%.	8,448	-
Line of credit up to RMB 100,000 from Bank of Communications,		
1)due on October 25,2022 with an annual interest rate of 3.85% and fully repaid on July 1, 2022.	-	1,568
2)due on August 11,2023 with an annual interest rate of 3.60%.	8,448	-
3)due on September 5,2023 with an annual interest rate of 3.50%.	5,632	-
Line of credit up to RMB 40,000 from Bank of China,		
1)due on August 26,2023 with an annual interest rate of 3.15%.	5,632	-
Line of credit up to RMB 100,000 from China Merchants Bank,		
1)due on July 21,2023 with an annual interest rate of 3.50%.	1,267	-
2)due on July 27,2023 with an annual interest rate of 3.50%.	1,267	-
3)due on August 1,2023 with an annual interest rate of 3.50%.	1,267	-
4)due on August 3,2023 with an annual interest rate of 3.50%.	1,267	-
5)due on August 7,2023 with an annual interest rate of 3.50%.	1,267	-
6)due on August 14,2023 with an annual interest rate of 3.50%.	1,267	-
7)due on August 15,2023 with an annual interest rate of 3.50%.	1,268	-
8)due on August 21,2023 with an annual interest rate of 3.50%.	986	-
9)due on August 28,2023 with an annual interest rate of 3.50%.	1,267	-
10)due on September 13,2023 with an annual interest rate of 3.50%.	1,267	-
11)due on September 20,2023 with an annual interest rate of 3.50%.	1,267	-
12)due on September 29,2023 with an annual interest rate of 3.50%.	423	-
Total	\$ 50,688	\$ 9,591

(1) Guaranteed by CleanChip

For the three months ended September 30, 2022 and 2021, interest expense related to short-term borrowings amounted to \$201 and \$176, respectively, and for the nine months ended September 30, 2022 and 2021, interest expense related to short-term borrowings amounted to \$326 and \$556, respectively.

NOTE 10 – OTHER PAYABLES AND ACCRUED EXPENSES

Other payables and accrued expenses consisted of the following:

	September 30,	December 31,
	2022	2021
Accrued commissions	\$ 13,007	\$ 12,507
Accrued warranty	8,543	6,631
Accrued payroll	6,892	5,684
Accrued professional fees	73	785
Accrued machine testing fees	1,105	149
Others	10,661	5,979
Total	\$ 40,281	\$ 31,735

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NOTE 11 – LEASES

The Company leases space under non-cancelable operating leases for several office and manufacturing locations. These leases do not have significant rent escalation holidays, concessions, leasehold improvement incentives, or other build-out clauses. Further, the leases do not contain contingent rent provisions.

Most leases include one or more options to renew. The exercise of lease renewal options is typically at the Company's sole discretion; therefore, the majority of renewals to extend the lease terms are not included in the Company's right-of-use assets and lease liabilities as they are not reasonably certain of exercise. The Company regularly evaluates the renewal options, and when they are reasonably certain of exercise, the Company includes the renewal period in its lease term.

As most of the Company's leases do not provide an implicit rate, the Company uses its incremental borrowing rate based on the information available at the lease commencement date in determining the present value of the lease payments. The Company has a centrally managed treasury function; therefore, based on the applicable lease terms and the current economic environment, it applies a portfolio approach for determining the incremental borrowing rate.

The components of lease expense were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Operating lease cost	\$ 776	\$ 632	\$ 2,133	\$ 1,807
Short-term lease cost	162	105	550	258
Lease cost	<u>\$ 938</u>	<u>\$ 737</u>	<u>\$ 2,683</u>	<u>\$ 2,065</u>

Supplemental cash flow information related to operating leases was as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash outflow from operating leases	<u>\$ 938</u>	<u>\$ 737</u>	<u>\$ 2,683</u>	<u>\$ 2,065</u>

As of September 30, 2022, maturities of outstanding lease liabilities for all operating leases were as follows:

	December 31,
remainder of 2022	\$ 412
2023	1,303
2024	959
2025	61
2026	43
2027	8
Total lease payments	<u>\$ 2,786</u>
Less: Interest	<u>(139)</u>
Present value of lease liabilities	<u>\$ 2,647</u>

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The weighted average remaining lease terms and discount rates for all operating leases were as follows:

	<u>September 30, 2022</u>	<u>December 31, 2021</u>
Remaining lease term and discount rate:		
Weighted average remaining lease term (years)	1.97	1.37
Weighted average discount rate	4.27%	4.54%

NOTE 12 – LONG-TERM BORROWINGS

Long-term borrowings consisted of the following:

	<u>September 30, 2022</u>	<u>December 31, 2021</u>
Loan from China Merchants Bank	\$ 15,368	\$ 18,390
Loans from Bank of China	5,702	6,977
Less: Current portion	(2,260)	(2,410)
	<u>\$ 18,810</u>	<u>\$ 22,957</u>

The loan from China Merchants Bank is for the purpose of purchasing housing property in Lingang, Shanghai. The loan is repayable in 120 total installments with the last installment due in November 2030, with an annual interest rate of 3.95%. The loan is pledged by the property of ACM Shengwei and guaranteed by ACM Shanghai. The housing property was transferred to ACM Shengwei in January 2022 (Note 6). As of September 30, 2022, the right certificate of the pledged property has not been obtained and the procedures of the formal pledge registration in the China Merchants Bank had not been completed. On October 21, 2022, an updated notification was received by ACM Shengwei from China Merchants Bank stating that the absence of the right certificate shall not be regarded as a default as the project developer has not yet delivered the right certificate to ACM Shengwei due to COVID-related administrative delays.

Scheduled principal payments for the outstanding long-term loan as of September 30, 2022 are as follows:

Year ending December 31	
2022	\$ 471
2023	2,277
2024	6,707
2025	1,778
2026	1,849
Thereafter	7,988
	<u>\$ 21,070</u>

For the three months ended September 30, 2022 and 2021, respectively, interest related to long-term borrowings of \$218 and \$232 was incurred, of which \$218 and \$15 was charged to interest expenses and \$0 and \$217 was capitalized as property, plant and equipment and other long-term assets, respectively.

For the nine months ended September 30, 2022 and 2021, respectively, interest related to long-term borrowings of \$720 and \$776 was incurred, of which \$660 and \$18 was charged to interest expenses and \$60 and \$758 was capitalized as property, plant and equipment and other long-term assets, respectively.

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NOTE 13 – OTHER LONG-TERM LIABILITIES

Other long-term liabilities represent government subsidies received from PRC governmental authorities for development and commercialization of certain technology but not yet recognized. Other long-term liabilities consisted of the following unearned government subsidies:

	September 30, 2022	December 31, 2021
Subsidies to Stress Free Polishing project, commenced in 2008 and 2017	\$ 372	\$ 791
Subsidies to Electro Copper Plating project, commenced in 2014	123	160
Subsidies to other cleaning tools, commenced in 2020	882	1,014
Subsidies to SW Lingang R&D development in 2021	4,824	5,958
Other	459	524
Total	<u>\$ 6,660</u>	<u>\$ 8,447</u>

NOTE 14 – LONG-TERM INVESTMENT

On September 6, 2017, ACM and Ninebell Co., Ltd. (“Ninebell”), a Korean company that is one of the Company’s principal material suppliers, entered into an ordinary share purchase agreement, effective as of September 11, 2017, pursuant to which Ninebell issued to ACM ordinary shares representing 20% of Ninebell’s post-closing equity for a purchase price of \$1,200, and a common stock purchase agreement, effective as of September 11, 2017, pursuant to which ACM issued 133,334 shares of Class A common stock to Ninebell for a purchase price of \$1,000 at \$7.50 per share. The investment in Ninebell is accounted for under the equity method.

On June 27, 2019, ACM Shanghai and Shengyi Semiconductor Technology Co., Ltd. (“Shengyi”), a company based in Wuxi, China that is one of the Company’s component suppliers, entered into an agreement pursuant to which Shengyi issued to ACM Shanghai shares representing 15% of Shengyi’s post-closing equity for a purchase price of \$109. The investment in Shengyi is accounted for under the equity method.

On September 5, 2019, ACM Shanghai entered into a Partnership Agreement with six other investors, as limited partners, and Beijing Shixi Qingliu Investment Co., Ltd., as general partner and manager, with respect to the formation of Hefei Shixi Chanheng Integrated Circuit Industry Venture Capital Fund Partnership (LP) (“Hefei Shixi”), a Chinese limited partnership based in Hefei, China. Pursuant to such Partnership Agreement, on September 30, 2019, ACM Shanghai invested RMB 30,000 (\$4,200), which represented 10% of the partnership’s total subscribed capital. The investment in Hefei Shixi is accounted for under the equity method.

On October 29, 2021, ACM Shanghai and Waferworks (Shanghai) Co., Ltd (“Waferworks”), a company based in Shanghai and one of the Company’s customers, entered into an agreement pursuant to which Waferworks issued to ACM Shanghai shares representing 0.25% of Waferworks’ post-closing equity for a purchase price of \$1,568. As there is no readily determinable fair value, the Company measures the investment in Waferworks at cost minus impairment, if any.

On August 17, 2022, ACM Singapore and Wooil Flucon Co., Ltd. (“Wooil”), a company based in South Korea and a potential component supplier to the Company, entered into an agreement pursuant to which Wooil, on September 1, 2022, issued to ACM Singapore shares representing 20% of Wooil’s post-closing equity for a purchase price of \$1,000. The investment in Wooil is accounted for under the equity method.

Pursuant to an Agreement entered into on September 19, 2022 (the “Agreement”), ACM Shanghai became a limited partner of the Nuode Asset Fund Pujiang No. 783 Single Asset Management Plan (“Nuode Asset Fund”) a Chinese limited partnership formed by Nuode Asset Management Co., Ltd, a financial services firm based in Shanghai, China. Nuode Asset Fund was formed to establish a special fund with the purpose to participate in certain technology related investments in China. Subsequent to the future purchase, any investment will be held by Nuode Asset Fund and restricted for a minimum period of six months. The limited partners of the Nuode Asset Fund contributed a total of RMB 160 million (\$22,160) to the fund, of which ACM Shanghai contributed RMB 30 million (\$4,196), or 18.75% of the total contribution, on September 27, 2022. As of September 30, 2022, no investment had been made by Nuode Asset Fund, and the Company elected to measure this investment at cost, less impairments if any.

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The Company treats each equity investment in the consolidated financial statements under the equity method and they are classified as long-term investments. Under the equity method, an investment is initially recorded at cost, adjusted for any excess of the Company's share of the incorporated-date fair values of the investee's identifiable net assets over the cost of the investment (if any). Thereafter, the investment is adjusted for the post incorporation change in the Company's share of the investee's net assets and any impairment loss relating to the investment. The Company concluded that the investments were not impaired and did not record any impairment charges related to the investments for any prior periods.

	September 30,	December 31,
	2022	2021
Equity investee:		
Ninebell	\$ 4,447	\$ 3,051
Wooil	1,014	-
Shengyi	510	211
Hefei Shixi	6,963	7,864
Subtotal	12,934	11,126
Other investee:		
Waferworks	1,408	1,568
Nuode Asset Fund	4,196	-
Total	\$ 18,538	\$ 12,694

For the three months ended September 30, 2022 and 2021, the Company's share of equity investees' net income was \$1,251 and \$421, respectively, and \$1,652 and \$1,036 for the nine months ended September 30, 2022 and 2021, respectively, which amounts were included in equity income in net income of affiliates in the accompanying condensed consolidated statements of operations and comprehensive income.

NOTE 15 – TRADING SECURITIES

Pursuant to a Partnership Agreement dated June 9, 2020 (the "Partnership Agreement") and a Supplementary Agreement thereto dated June 15, 2020 (the "Supplementary Agreement"), ACM Shanghai became a limited partner of Qingdao Fortune-Tech Xinxing Capital Partnership (L.P.), a Chinese limited partnership based in Shanghai (the "Partnership") of which China Fortune-Tech Capital Co., Ltd serves as general partner and thirteen unaffiliated entities serve, with ACM Shanghai, as limited partners. The Partnership was formed to establish a special fund that would purchase, in a strategic placement, shares of Semiconductor Manufacturing International Corporation, or SMIC, to be listed on the STAR Market. The limited partners of the Partnership contributed to the fund a total of RMB 2.224 billion (\$315,000), of which ACM Shanghai contributed RMB 100 million (\$14,200), or 4.3% of the total contribution, on June 18, 2020.

Upon the closing of the SMIC offering in July 2020, the initial number of SMIC shares owned by the Partnership was apportioned to all of the limited partners in proportion to their respective capital contributions (4.3% in the case of ACM Shanghai). An individual limited partner will be able to instruct the general partner to sell, on behalf of the limited partner, all or a portion of the limited partner's apportioned shares, subject to compliance with all laws, regulations, trading rules, the Partnership Agreement and the Supplementary Agreement. Alternatively, limited partners holding at least 30% of the total SMIC shares held by the Partnership will be able, pursuant to a call auction in accordance with the Supplementary Agreement, to cause the general partner to arrange to sell all of the shares desired to be offered by each of the limited partners that complies with procedural requirements provided in the Supplementary Agreement.

As SMIC was listed on the STAR Market in July 2020, ACM Shanghai's investment is accounted for as trading securities and is stated at fair market value, which is classified as Level 1 of the hierarchy established under ASC 820, *Fair Value Measurement*, with valuations based on quoted prices for identical securities in active markets at September 30, 2022 and December 31, 2021.

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The components of trading securities were as follows:

	<u>September 30,</u> <u>2022</u>	<u>December 31,</u> <u>2021</u>
Trading securities listed in Shanghai Stock Exchange		
Cost	\$ 10,295	\$ 15,363
Market value	14,164	29,498
	<u>Three Months Ended September 30,</u> <u>2022</u>	<u>Nine Months Ended September 30,</u> <u>2022</u>
	<u>2021</u>	<u>2021</u>
	<i>(in thousands)</i>	<i>(in thousands)</i>
Unrealized gain (loss) on trading securities	\$ (5,281)	\$ (919)
	\$ (9,562)	\$ 1,817

For the three and nine months ended September 30, 2022, the Company received \$4,488 in proceeds from the sale of SMIC shares, including a realized gain of \$1,136.

NOTE 16 – RELATED PARTY BALANCES AND TRANSACTIONS

Ninebell

Ninebell is an equity investee of ACM (Note 14) and is the Company's principal supplier of robotic delivery system subassemblies used in our single-wafer cleaning equipment. The Company purchases equipment through arms-length transactions from Ninebell for production in the ordinary course of business. The Company pays for a portion of the equipment in advance and is obligated for the remaining amounts upon receipt of the product. All related party outstanding balances are short-term in nature and are expected to be settled in cash.

Shengyi

Shengyi is an equity investee of ACM Shanghai (Note 14) and is one of the Company's component suppliers in China. The Company purchases components from Shengyi for production in the ordinary course of business. The Company incurs a service fee related to installation and hook-up fees which is recorded within cost of revenue on the Company's condensed consolidated statements of operations and comprehensive income (loss). The Company pays for a portion of the raw materials in advance and is obligated for the remaining amounts upon receipt of the product.

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The following tables reflect related party transactions in our condensed consolidated financial statements:

	September 30, 2022	December 31, 2021
Advances to related party		
Ninebell	\$ 5,158	\$ 2,383

	September 30, 2022	December 31, 2021
Accounts payable		
Ninebell	\$ 4,333	\$ 5,703
Shengyi	2,256	2,196
Total	\$ 6,589	\$ 7,899

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Purchase of materials				
Ninebell	\$ 9,834	\$ 7,455	\$ 27,500	\$ 21,833
Shengyi	2,298	1,108	3,760	1,753
Total	\$ 12,132	\$ 8,563	\$ 31,260	\$ 23,586

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Service fee charged by				
Shengyi	\$ 277	\$ 144	\$ 315	\$ 403

NOTE 17 – COMMON STOCK

In March 2022, ACM effectuated the Stock Split, which was a 3-for-1 stock split of Class A and Class B common stock in the form of a stock dividend (Note 1). Each stockholder of record at the close of business on March 16, 2022, received a dividend of two additional shares of Class A common stock for each then-held share of Class A common stock and two additional shares of Class B common stock for each then-held share of Class B common stock, which were distributed after the close of trading on March 23, 2022.

ACM is authorized to issue 150,000,000 shares of Class A common stock and 5,307,816 shares of Class B common stock, each with a par value of \$0.0001. Each share of Class A common stock is entitled to one vote, and each share of Class B common stock is entitled to twenty votes and is convertible at any time into one share of Class A common stock. Shares of Class A common stock and Class B common stock are treated equally, identically and ratably with respect to any dividends declared by the Board of Directors of ACM unless such Board of Directors declares different dividends to the Class A common stock and Class B common stock by getting approval from a majority of common stockholders.

During the three months ended September 30, 2022, ACM issued 231,710 shares of Class A common stock upon option exercises by employees and non-employees.

During the nine months ended September 30, 2022, ACM issued 763,584 shares of Class A common stock upon option exercises by employees and non-employees, and an additional 1,002 shares of Class A common stock upon conversion of an equal number of shares of Class B common stock.

During the three months ended September 30, 2021, ACM issued 390,993 shares of Class A common stock upon option exercises by employees and non-employees.

During the nine months ended September 30, 2021, ACM issued 1,693,095 shares of Class A common stock upon option exercises by employees and non-employees, and an additional 285,003 shares of Class A common stock upon conversion of an equal number of shares of Class B common stock. During the nine months ended September 30, 2021, ACM issued 728,043 shares of Class A common stock upon the exercise of warrants to purchase shares of Class A common stock.

At September 30, 2022 and December 31, 2021, the number of shares of Class A common stock issued and outstanding was 54,373,515 and 53,608,929, respectively.

At September 30, 2022 and December 31, 2021, the number of shares of Class B common stock issued and outstanding was 5,086,812 and 5,087,814, respectively.

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NOTE 18 – STOCK-BASED COMPENSATION

ACM's stock-based compensation consists of employee and non-employee awards issued under its 1998 Stock Option Plan, its 2016 Omnibus Incentive Plan and as standalone options. The vesting condition may consist of a service period determined by the Board of Directors for a grant or certain performance conditions determined by the Board of Directors for a grant. The fair value of the stock options granted with service period based condition is estimated at the date of grant using the Black-Scholes option pricing model. The fair value of the stock options granted with market based condition is estimated at the date of grant using the Monte Carlo simulation model.

The following table summarizes the components of stock-based compensation expense included in the consolidated statements of operations:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Stock-Based Compensation Expense:				
Cost of revenue	\$ 130	\$ 108	\$ 383	\$ 289
Sales and marketing expense	349	417	1,277	1,400
Research and development expense	666	293	1,733	801
General and administrative expense	748	460	1,843	1,333
	\$ 1,893	\$ 1,278	\$ 5,236	\$ 3,823

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Stock-based compensation expense by type:				
Employee stock option plan	\$ 1,798	\$ 1,179	\$ 4,943	\$ 3,481
Non-employee stock option plan	12	12	35	82
Subsidiary stock option plan	83	87	258	260
	\$ 1,893	\$ 1,278	\$ 5,236	\$ 3,823

Employee Awards

The following table summarizes the Company's employee share option activities during the nine months ended September 30, 2022:

	Number of Option Shares (1)	Weighted Average Grant Date Fair Value	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term
Outstanding at December 31, 2021	8,402,247	\$ 2.45	\$ 5.88	6.53 years
Granted	1,653,300	10.31	22.41	
Exercised	(379,290)	1.13	2.83	
Forfeited/cancelled	(229,650)	11.61	25.51	
Outstanding at September 30, 2022	9,446,607	\$ 3.66	\$ 8.42	6.39 years
Vested and exercisable at September 30, 2022	6,118,215			

(1) Prior period results have been adjusted to reflect the Stock Split effected in March 2022. See Note 1 for details.

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As of September 30, 2022 and December 31, 2021, \$17,579 and \$9,544, respectively, of total unrecognized employee stock-based compensation expense, net of estimated forfeitures, related to stock-based awards for ACM were expected to be recognized over a weighted-average period of 1.53 years and 1.61 years, respectively. Total recognized compensation cost may be adjusted for future changes in estimated forfeitures.

The fair value of options granted to employees with a service period based condition is estimated on the grant date using the Black-Scholes valuation with following assumptions:

	Nine Months Ended September 30, 2022 (6)	Year-ended December 31, 2021 (6)
Fair value of common share(1)	\$ 16.83-25.45	\$ 27.58-37.33
Expected term in years(2)	5.50-6.25	6.25
Volatility(3)	49.43-50.87%	48.53-49.47%
Risk-free interest rate(4)	1.7%-3.04%	1.00%-1.44%
Expected dividend(5)	0%	0%

- (1) Equal to closing value on the grant date.
- (2) Expected term of share options is based on the average of the vesting period and the contractual term for each grant according to Staff Accounting Bulletin 110.
- (3) Volatility is calculated based on the historical volatility of ACM's comparable companies in the period equal to the expected term of each grant.
- (4) Risk-free interest rate is based on the yields of U.S. Treasury securities with maturities similar to the expected term of the share options in effect at the time of grant.
- (5) Expected dividend is assumed to be 0% as ACM has no history or expectation of paying a dividend on its common stock.
- (6) Prior period results have been adjusted to reflect the Stock Split effected in March 2022. See Note 1 for details.

Non-employee Awards

The following table summarizes the Company's non-employee share option activities during the nine months ended September 30, 2022:

	Number of Option Shares (1)	Weighted Average Grant Date Fair Value	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term
Outstanding at December 31, 2021	2,067,018	\$ 0.33	\$ 0.97	3.98 years
Granted	-	-	-	
Exercised	(384,294)	0.21	0.52	
Expired	-	-	-	
Forfeited/cancelled	(6,510)	0.19	0.43	
Outstanding at September 30, 2022	1,676,214	\$ 0.36	\$ 1.08	3.58 years
Vested and exercisable at September 30, 2022	1,653,714			

- (1) Prior period results have been adjusted to reflect the Stock Split effected in March 2022. See Note 1 for details.

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As of September 30, 2022 and December 31, 2021, \$67 and \$102, respectively, of total unrecognized non-employee stock-based compensation expense, net of estimated forfeitures, related to stock-based awards were expected to be recognized over a weighted-average period of 0.05 years and 0.06 years, respectively. Total recognized compensation cost may be adjusted for future changes in estimated forfeitures.

ACM Shanghai Option Grants

In January 2020, ACM Shanghai adopted a 2019 Stock Option Incentive Plan (the “Subsidiary Stock Option Plan”) that provides for, among other incentives, the granting to officers, directors, employees of options to purchase shares of ACM Shanghai’s common stock. The fair value of the stock options granted is estimated at the date of grant based on the Black-Scholes option pricing model using assumptions generally consistent with those used for ACM’s stock options. Because ACM Shanghai shares have a short history of trading on a public market, the expected volatility is estimated with reference to the average historical volatility of a group of publicly traded companies that are believed to have similar characteristics to ACM Shanghai.

The following table summarizes the ACM Shanghai stock option activities during the nine months ended September 30, 2022:

	Number of Option Shares in ACM Shanghai	Weighted Average Grant Date Fair Value	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term
Outstanding at December 31, 2021	5,377,500	\$ 0.24	\$ 2.04	2.50 years
Outstanding at September 30, 2022	5,377,500	\$ 0.24	\$ 1.97	1.76 years
Vested and exercisable at September 30, 2022	-			

During the three months ended September 30, 2022 and 2021, the Company recognized stock-based compensation expense of \$83 and \$87, respectively, and during the nine months ended September 30, 2022 and 2021, the Company recognized stock-based compensation expense of \$258 and \$260, respectively, related to stock option grants of ACM Shanghai.

As of September 30, 2022 and December 31, 2021, \$249 and \$525, respectively, of total unrecognized non-employee stock-based compensation expense, net of estimated forfeitures, related to ACM Shanghai stock-based awards were expected to be recognized over a weighted-average period of 0.75 years and 1.5 years, respectively. Total recognized compensation cost may be adjusted for future changes in estimated forfeitures.

NOTE 19 – INCOME TAXES

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carry-forwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period during which such rates are enacted.

The Company considers all available evidence to determine whether it is more likely than not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become realizable. Management considers the scheduled reversal of deferred tax liabilities (including the impact of available carryback and carry-forward periods) and projected taxable income in assessing the realizability of deferred tax assets. In making such judgments, significant weight is given to evidence that can be objectively verified.

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As of each reporting date, management considers new evidence, both positive and negative, that could affect its view of the future realization of deferred tax assets. Prior to September 30, 2019, the Company had recorded a valuation allowance for the full amount of net deferred tax assets in the United States, as the realization of deferred tax assets was uncertain. Since September 30, 2019, the Company has not maintained a valuation allowance except for a partial valuation allowance on certain U.S. deferred tax assets. In order to recognize the remaining U.S. deferred tax assets that continue to be subject to a valuation allowance, the Company will need to generate sufficient U.S. taxable income in future periods before the expiration of the deferred tax assets governed by the tax code.

ACM Shanghai has shown a three-year historical cumulative profit and has projections of future income. As a result, the Company does not maintain a valuation allowance.

The Company accounts for uncertain tax positions in accordance with the authoritative guidance on income taxes under which the Company may only recognize or continue to recognize tax positions that meet a more likely than not threshold. The Company recognizes accrued interest and penalties related to unrecognized tax benefits as a component of the provision for income taxes.

The Company's effective tax rate differs from statutory rates of 21% for U.S. federal income tax purposes and 12.5% to 25% for Chinese income tax purposes due to the effects of the valuation allowance and certain permanent differences from book-tax differences. As a result, the Company recorded income tax benefit (expense) of \$(14,138) and \$3,021 during the nine months ended September 30, 2022 and 2021, respectively. The increase in our effective income tax rate for the nine months ended September 30, 2022 compared to the same period of the prior year was primarily due to a new requirement to capitalize and amortize previously deductible research and experimental expenses resulting from a change in Section 174 made by the Tax Cuts and Jobs Act of 2017 (the "TCJA") which became effective on January 1, 2022, and a decrease in discrete tax benefits associated with stock-based compensation deductions. Under the TCJA, the Company is required to capitalize, and subsequently amortize R&D expenses over fifteen years for research activities conducted outside of the U.S. The capitalization of overseas R&D expenses resulted in a significant increase in the Company's global intangible low-taxed income inclusion. Congress is considering legislation, but legislation has not passed, that would defer the capitalization requirement to later years.

As of September 30, 2022, the Company had total unrecognized tax benefits of \$6,066, as compared to \$6,066 and \$570 as of December 31, 2021 and 2020 respectively. The significant increase in 2021 was primarily because the Company claimed a deduction for realized gains on stock option exercises for China-based employees on its Chinese tax return. As of December 31, 2021, the Company assessed that the deduction did not meet the "more likely than not" threshold given this deduction was not regular and may be subject to scrutiny by the tax authority. If recognized, \$5,950 would affect the effective tax rate. The Company will recognize interest and penalties, when they occur, related to uncertain tax provisions as a component of tax expense. For the nine months ended September 30, 2022, \$142 of interest or penalties was recognized.

The Company files income tax returns in the United States and state and foreign jurisdictions. The federal, state and foreign income tax returns are under the statute of limitations subject to tax examinations for the tax years ended December 31, 1999 through December 31, 2021. To the extent the Company has tax attribute carry-forwards, the tax years in which the attribute was generated may still be adjusted upon examination by the U.S. Internal Revenue Service, state or foreign tax authorities to the extent utilized in a future period.

The Company's effective tax rate differs from statutory rates of 21% for U.S. federal income tax purposes and 12.5% to 25% for Chinese income tax purposes due to the effects of the valuation allowance and certain permanent differences as it pertains to book-tax differences in the treatment of stock-based compensation and non-US research expenses. The Company's three PRC subsidiaries, ACM Shanghai, ACM Wuxi and Shengwei, are liable for PRC corporate income taxes at the rates of 12.5%, 25% and 25%, respectively. Pursuant to the Corporate Income Tax Law of the PRC, ACM's PRC subsidiaries generally would be liable for PRC corporate income taxes as a rate of 25%. According to Guoshuihan 2009 No. 203, an entity certified as an "advanced and new technology enterprise" is entitled to a preferential income tax rate of 15%. ACM Shanghai was certified as an "advanced and new technology enterprise" in 2012 and again in 2016, 2018, and 2021, with an effective period of three years. In 2021, ACM Shanghai was certified as an eligible integrated circuit production enterprise and is entitled to a preferential income tax rate of 12.5% from January 1, 2020 to December 31, 2022.

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Income tax benefit (expense) was as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Total income tax benefit (expense)	\$ (10,470)	\$ 266	\$ (14,138)	\$ 3,021

NOTE 20 – COMMITMENTS AND CONTINGENCIES

The Company leases offices under non-cancelable operating lease agreements. See Note 11 for future minimum lease payments under non-cancelable operating lease agreements with initial terms of one year or more.

As of September 30, 2022, the Company had \$2,263 of open capital commitments.

Covenants in Shengwei’s Grant Contract for State-owned Construction Land Use Right in Shanghai City with the China (Shanghai) Pilot Free Trade Zone Lingang Special Area Administration require, among other things, that Shengwei pay liquidated damages in the event that (a) it does not make a total investment (including the costs of construction, fixtures, equipment and grant fees) of at least RMB 450.0 million (\$63,400) or (b) within six years after the land use right is obtained, the Company does not (i) generate a minimum specified amount of annual sales of products manufactured on the granted land or (ii) pay to the PRC at least RMB 157.6 million (\$22,000) in annual total taxes (including value-added taxes, corporate income tax, personal income taxes, urban maintenance and construction taxes, education surcharges, stamp taxes, and vehicle and shipping taxes) as a result of operations in connection with the granted land.

As of September 30, 2022 and December 31, 2021, the Company had paid in total \$23,082 and \$13,265, respectively for its Lingang-related investments.

In the normal course of business, the Company is subject to contingencies, including legal proceedings and environmental claims arising out of the normal course of businesses that relate to a wide range of matters, including among others, contracts breach liability. The Company records accruals for such contingencies based upon the assessment of the probability of occurrence and, where determinable, an estimate of the liability. Management may consider many factors in making these assessments including past history, scientific evidence and the specifics of each matter. Some of these contingencies involve claims that are subject to substantial uncertainties and unascertainable damages.

The Company’s management has evaluated all such proceedings and claims that existed as of September 30, 2022 or December 31, 2021. In the opinion of management, no provision for liability nor disclosure was required as of September 30, 2022 related to any claim against the Company because: (a) there is not a reasonable possibility that a loss exceeding amounts already recognized (if any) may be incurred with respect to such claim; (b) a reasonably possible loss or range of loss cannot be estimated; or (c) such estimate is immaterial.

As of September 30, 2022, the Company had no outstanding legal proceedings.

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NOTE 21 – SEGMENT INFORMATION

Selected disaggregated revenue information is provided in Note 3.

The balance of selected long-term assets by geography as of September 30, 2022 and December 31, 2021 are presented in the following table:

	<u>September 30,</u> <u>2022</u>	<u>December 31,</u> <u>2021</u>
Long-lived assets by geography:		
Mainland China	\$ 76,964	\$ 71,534
South Korea	3,053	1,324
United States	20	50
Total	\$ 80,037	\$ 72,908

NOTE 22 – STATUTORY SURPLUS RESERVE

In accordance with the PRC's Foreign Enterprise Law, ACM Shanghai, ACM Shengwei, and ACM Wuxi are required to make appropriation to reserve funds, comprising the statutory surplus reserve and discretionary surplus reserve, based on after-tax net income in accordance with generally accepted accounting principles of PRC ("PRC GAAP").

Appropriations to the statutory surplus reserve are required to be at least 10% of the after-tax net income determined in accordance with PRC GAAP until the reserve is equal to 50% of the entities' registered capital. The amount is calculated annually at the end of each calendar year. The balances of statutory reserve funds were \$8,312 as of September 30, 2022 and December 31, 2021, and are presented as statutory reserve on the Company's condensed consolidated balance sheets.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion of our financial condition and results of operations together with our condensed consolidated financial statements and the related notes and other financial information included elsewhere in this report and our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, or our Annual Report. The following discussion contains forward-looking statements that reflect our plans, estimates, and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include those discussed in Part I, Item 1A. "Risk Factors" in our Annual Report and in Part II, Item 1A. "Risk Factors" in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022, as well as those discussed below and elsewhere in this report, particularly in the section titled "Item 1A. Risk Factors" in Part II below.

Corporate Background

ACM Research was incorporated in California in 1998 and redomesticated in Delaware in 2016. We perform strategic planning, marketing, and financial activities at our global corporate headquarters in Fremont, California. ACM Research is neither a PRC operating company nor do we conduct our operations in the PRC through the use of VIEs.

Initially we focused on developing tools for chip manufacturing process steps involving the integration of ultra-low-K materials and copper. In the early 2000s we sold tools based on stress-free copper polishing technology. In 2007 we began to focus our development efforts on single-wafer wet-cleaning solutions for the front-end chip fabrication process. Since that time, we have strategically built our technology base and expanded our product offerings:

- In 2009 we introduced *SAPS* megasonic technology, which can be applied in wet wafer cleaning at numerous steps during the chip fabrication process.
- In 2016 we introduced *TEBO* technology, which can be applied at numerous steps during the fabrication of small node conventional two-dimensional and three-dimensional patterned wafers.
- In August 2018 we introduced the *Ultra-C Tahoe* wafer cleaning tool, which delivers high cleaning performance with significantly less sulfuric acid than typically consumed by conventional high temperature single-wafer cleaning tools.
- In March 2019 we introduced (a) the *Ultra ECP AP* or Advanced Wafer Level Packaging tool, a back-end assembly tool used for bumping, or applying copper, tin and nickel to wafers at the die-level prior to packaging, and (b) the *Ultra ECP MAP* or Multi Anode Plating tool, a front-end process tool that utilizes our proprietary technology to deliver world-class electrochemical copper plating for copper interconnect applications.
- In April 2020 we introduced the *Ultra Furnace*, our first system developed for multiple dry processing applications.
- In May 2020 we introduced the *Ultra C Family* of semi-critical cleaning systems, including the *Ultra C b* for backside clean, the *Ultra C wb* automated wet bench, and the *Ultra C s* scrubber.

To help us establish and build relationships with chip manufacturers in the PRC, in 2006 we moved our operational center to Shanghai and began to conduct our business through our subsidiary ACM Shanghai. Since that time, we have expanded our geographic presence:

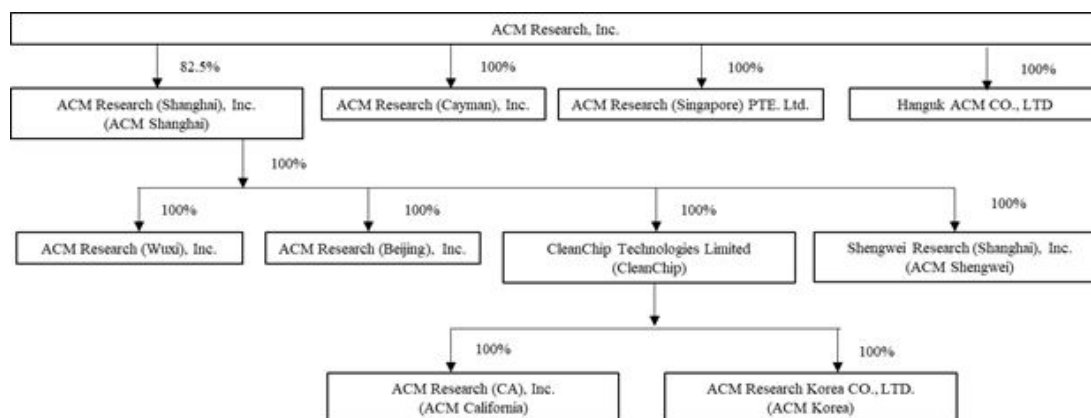
- In 2011 we formed a wholly-owned subsidiary in the PRC, *ACM Research (Wuxi), Inc.*, which now is a wholly-owned subsidiary of ACM Shanghai, to manage sales and service operations.
- In June 2017 we formed a subsidiary in Hong Kong, *CleanChip Technologies Limited*, which now is a wholly-owned subsidiary of ACM Shanghai, to act on our behalf in Asian markets outside the PRC by, for example, serving as a trading partner between ACM Shanghai and its customers, procuring raw materials and components, performing sales and marketing activities, and making strategic investments.

- In December 2017 we formed a subsidiary in the Republic of Korea, *ACM Research Korea CO., LTD.*, which now is an indirect wholly-owned subsidiary of ACM Shanghai, to serve our customers based in the Republic of Korea and perform sales and marketing and R&D activities.
- In March 2019 ACM Shanghai formed a wholly-owned subsidiary in the PRC, *Shengwei Research (Shanghai), Inc.*, or ACM Shengwei, to manage activities related to the addition of future long-term production capacity.
- In June 2019 CleanChip Technologies Limited formed a wholly-owned subsidiary in California, *ACM Research (CA), Inc.*, to provide procurement services on behalf of ACM Shanghai.
- In August 2021 we formed a wholly-owned subsidiary in Singapore, *ACM Research (Singapore) PTE, Ltd.*, to perform sales, marketing, and other business development activities.
- In February 2022, ACM Shanghai formed a wholly-owned subsidiary in China, *ACM Research (Beijing), Inc.*, to perform sales, marketing and other business development activities.
- In March 2022, ACM formed a wholly-owned subsidiary in South Korea, *Hanguk ACM CO., LTD.*, to perform business development and other related activities.

We currently conduct the majority of our product development, support and services, and substantially all of our manufacturing, at ACM Shanghai. Our Shanghai operations position us to be near many of our current and potential new customers in the PRC (including Taiwan), South Korea and throughout Asia, providing convenient access and reduced shipping and manufacturing costs.

- ACM Shanghai's initial factory is located in the Pudong Region of Shanghai and has a total of 36,000 square feet of available floor space.
- ACM Shanghai's second production facility is located in the Chuansha district of Pudong, approximately 11 miles from our initial factory. In September 2018 we announced the opening of the first building of the second production facility. The first building initially had a total of 50,000 square feet of available floor space for production capacity, which was increased by 50,000 square feet in the second quarter of 2020. In February 2021 ACM Shanghai leased a second building immediately adjacent to the second factory, which increased the available floor space for production by another 100,000 square feet, bringing the total available floor space for production capacity of second production facility to 200,000 square feet.
- In July 2020 ACM Shanghai began a multi-year construction project to build a development and production center in the Lingang region of Shanghai. The new facility is expected to have a total of 1,000,000 square feet of available floor space for production capacity, with initial production of the first building to begin in the mid-2023 timeframe.
- In January 2022 ACM Shanghai completed the purchase of a housing facility in the Lingang region of Shanghai to assist in employee retention and recruitment in connection with its new R&D center and factory currently under construction.

The following chart depicts our corporate organization as of September 30, 2022:



A detailed description of how cash is transferred through our organization is set forth under “Note 2 – Summary of Significant Accounting Policies – Cash and Cash Equivalents” to the Consolidated Financial Statements of this report.

Risks Associated with Corporate Structure

We are subject to a number of legal and operational risks associated with our corporate structure, including as the result of a substantial portion of our operations being conducted in the PRC. Consequences of any of those risks could result in a material adverse change in our operations or cause the value of ACM Research Class A common stock to significantly decline in value or become worthless. Please carefully read the information included in “Part II, Item 1A – Risk Factors” of this report and our Annual Report on Form 10-K for the year ended December 31, 2021 and our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022, in particular the risk factors addressing the following issues:

- If any PRC central government authority were to determine that existing PRC laws or regulations require that ACM Shanghai obtain the authority’s permission or approval to continue the listing of ACM Research’s Class A common stock in the United States or if those existing PRC laws and regulations, or interpretations thereof, were to change to require such permission or approval, or if we inadvertently conclude that permissions or approvals are not required, ACM Shanghai may be unable to obtain the required permission or approval or may only be able to obtain such permission or approval on terms and conditions that impose material new restrictions and limitations on operation of ACM Shanghai, either of which could have a material adverse effect on our business, financial condition, results of operations, reputation and prospects and on the trading price of ACM Research Class A common stock, which could decline in value or become worthless.
- PRC central government authorities may intervene in, or influence, ACM Shanghai’s PRC-based operations at any time, and those authorities’ rules and regulations in the PRC can change quickly with little or no advance notice.
- The PRC central government may determine to exert additional control over offerings conducted overseas or foreign investment in PRC-based issuers, which could result in a material change in operations of ACM Shanghai and the value of ACM Research Class A common stock.

Permissions or Approvals to Operate in the PRC

The business of ACM Shanghai is subject to complex laws and regulations in the PRC that can change quickly with little or no advance notice. To date, beyond the COVID-19-related restrictions in 2022, we have not experienced such intervention or influence by PRC central government authorities or a change in those authorities’ rules and regulations that have had a material impact on ACM Shanghai or ACM Research.

ACM Research is not a PRC operating company, and we do not conduct our operations in the PRC through the use of a variable interest entity, or VIE, or any other structure designed for the purpose of avoiding PRC legal restrictions on direct foreign investments in PRC-based companies. ACM Research has a direct ownership interest in ACM Shanghai as the result of its holding 82.5% of the outstanding shares of ACM Shanghai. Stockholders of ACM Research may never directly own equity interests in ACM Shanghai. As a result, we have determined that our corporate structure or any other matters relating to our business operations require that we obtain any permissions or approvals from the China Securities Regulatory Commission, the Cyberspace Administration of China, or any other PRC central government authority in order to continue to list shares of Class A common stock of ACM Research on the Nasdaq Global Select Market. This determination was based on the facts aforementioned and the PRC Company Law, PRC Securities Law, cybersecurity regulations and other relevant laws, regulations and regulatory requirements in the PRC currently in effect. However, if this determination proves to be incorrect, then it could have a material adverse effect on ACM Research. See “Part II. Item 1A, Risk Factors— If any PRC central government authority were to determine that existing PRC laws or regulations require that ACM Shanghai obtain the authority’s permission or approval to continue the listing of ACM Research’s Class A common stock in the United States or if those existing PRC laws and regulations, or interpretations thereof, were to change to require such permission or approval, ACM Shanghai may be unable to obtain the required permission or approval or may only be able to obtain such permission or approval on terms and conditions that impose material new restrictions and limitations on operation of ACM Shanghai, either of which could have a material adverse effect on our business, financial condition, results of operations, reputation and prospects and on the trading price of ACM Research Class A common stock.”

In addition, in the ordinary course of business, ACM Shanghai is required to obtain certain operating permits and licenses necessary for it to operate in the PRC, including business licenses, certifications relating to quality management standards, import- and export-related qualifications from customs, as well as environmental and construction permits, licenses and approvals relating to construction projects. We believe ACM Shanghai has all such required permits and licenses. However, from time to time the PRC government issues new regulations, which may require additional actions on the part of ACM Shanghai to comply. If ACM Shanghai does not, or is unable to, obtain any such additional permits or licenses, ACM Shanghai may be subjected to restrictions and penalties imposed by the relevant PRC regulatory authorities, it could have a material adverse effect on our business, financial condition, results of operations, reputation and prospects and on the trading price of ACM Research Class A common stock.

See “Part II. Item 1A—Risk Factors—Risks Related to International Aspects of Our Business—PRC central government authorities may intervene in, or influence, ACM Shanghai’s PRC-based operations at any time, and those authorities’ rules and regulations in the PRC can change quickly with little or no advance notice” for more information.

Our Independent Registered Public Accounting Firm

The U.S. Holding Foreign Companies Accountable Act (the “HFCA Act”) requires that the Public Company Accounting Oversight Board (the “PCAOB”) determine whether it is unable to inspect or investigate completely registered public accounting firms located in a non-U.S. jurisdiction because of a position taken by one or more authorities in that jurisdiction. BDO China Shu Lun Pan Certified Public Accountants LLP (“BDO China”) had been our independent registered public accounting firm in recent years, including for the year ended December 31, 2021. On December 16, 2021, the PCAOB reported its determination that it was unable to inspect or investigate completely registered public accounting firms headquartered in the PRC and Hong Kong, including BDO China, because of positions taken by PRC authorities in those jurisdictions. On March 30, 2022, based on this determination, ACM Research was transferred to the SEC’s “Conclusive list of issuers identified under the HFCA.” See “Part II. Item 1A, Risk Factors— We could be adversely affected if we are unable to comply with recent and proposed legislation and regulations regarding improved access to audit and other information and audit inspections of accounting firms operating in the PRC” of this report for more information. Under current regulations, if ACM Research were to be included on this list three consecutive times due to our independent auditor being located in a jurisdiction that does not allow for PCAOB inspections, the SEC could prohibit trading in our securities and cause our securities to be delisted in the U.S., and their value may significantly decline or become worthless. Further, the “Accelerating HFCAA” could reduce the applicable threshold from three consecutive appearances to two consecutive appearances on the list. However, on June 30, 2022, stockholders of ACM Research ratified the appointment of Armanino LLP as our independent auditor for the fiscal year ending December 31, 2022. Armanino LLP is neither headquartered in the PRC or Hong Kong nor is it subject to the determinations announced by the PCAOB, and subsequent to the filing of our 2022 annual report, we do not believe ACM Research will appear on the “Conclusive” list for a second time.

Overview

We supply advanced, innovative capital equipment developed for the global semiconductor industry. Fabricators of advanced integrated circuits, or chips, can use our wet-cleaning and other front-end processing tools in numerous steps to improve product yield, even at increasingly advanced process nodes. We have designed these tools for use in fabricating foundry, logic and memory chips, including dynamic random-access memory, or DRAM, and 3D NAND-flash memory chips. We also develop, manufacture and sell a range of advanced packaging tools to wafer assembly and packaging customers.

Revenue from wet-cleaning and other front-end processing tools totaled \$117.9 million, or 88.2% of total revenue, for the three months ended September 30, 2022, as compared to \$49.4 million, or 73.8% of total revenue, for the same period in 2021. Revenue from wet-cleaning and other front-end processing tools totaled \$229.2 million, or 81.8% of total revenue, for the nine months ended September 30, 2022, as compared to \$127.3 million, or 77.3% of total revenue, for the same period in 2021. Selling prices for our wet-cleaning and other front-end processing tools range from \$0.7 million to more than \$5 million. Our customers for wet-cleaning and other front-end processing tools have included Huali Microelectronics Corporation, The Huahong Group, Semiconductor Manufacturing International Corporation, or SMIC, Shanghai SK Hynix Inc., Yangtze Memory Technologies Co., Ltd, and ChangXin Memory Technologies.

Revenue from advanced packaging, other back-end processing tools, services and spares totaled \$15.8 million, or 11.8% of total revenue, for the three months ended September 30, 2022, as compared to \$17.6 million, or 26.2% of total revenue, for the same period in 2021. Revenue from advanced packaging, other back-end processing tools, services and spares totaled \$51.1 million, or 18.2% of total revenue, for the nine months ended September 30, 2022, as compared to \$37.3 million, or 22.7% of total revenue, for the same period in 2021. Selling prices for these tools range from \$0.5 million to \$4 million. Our customers for advanced packaging, and other processing tools have included: Jiangyin Changdian Advanced Packaging Co. Ltd., a PRC-based wafer bumping packaging house that is a subsidiary of JCET Group Co., Ltd.; Nantong Tongfu Microelectronics Co., Ltd., a PRC-based chip assembly and testing company that is a subsidiary of Nantong Fujitsu Microelectronics Co., Ltd.; Nepes Co., Ltd., a semiconductor packaging company based in South Korea which acquired the operations of Deca Technologies' Philippines manufacturing facility in 2020; and Wafer Works Corporation, a PRC-based wafer supplier.

We estimate, based on third-party reports and on customer and other information, that our current product portfolio addresses approximately \$8 billion of the global wafer equipment market. By product line, we estimate an approximately \$3.7 billion market opportunity is addressed by our wafer cleaning equipment, \$2.9 billion by our furnace equipment, \$730 million by our electro-chemical plating or ECP equipment, and more than \$650 million by our stress-free polishing, advanced packaging, wafer processing, and other processing equipment. By major equipment segment, Gartner estimates a 2021 worldwide semiconductor wafer fab equipment, or WFE, market size of \$88.1 billion, of which \$4.1 billion is for wafer cleaning equipment (auto wet stations, single-wafer spray processors, batch spray processors, and other clean process equipment), \$3.4 billion is for furnace equipment (tube CVD, oxidation/diffusion furnace, and batch atomic layer deposition), and \$764 million is for electro-chemical deposition, or ECD. Based on Gartner's estimates, total available global market for these equipment segments increased by 30.1% from \$6.4 billion in 2020 to \$8.3 billion in 2021, and is expected to increase by 8.3% to \$8.9 billion in 2022. These segments are part of the worldwide semiconductor WFE market, which based on Gartner's estimates increased by 35.6% from \$64.9 billion in 2020 to \$88.1 billion in 2021, and is expected to increase by 10.7% to \$97.5 billion in 2022.

We have focused our selling efforts on establishing a referenceable base of leading foundry, logic and memory chip makers, whose use of our products can influence decisions by other manufacturers. We believe this customer base has helped us penetrate the mature chip manufacturing markets and build credibility with additional industry leaders. We have used a “demo-to-sales” process to place evaluation equipment, or “first tools,” with a number of selected customers.

Since 2009 we have delivered more than 335 wet-cleaning and other front-end processing tools, more than 270 of which have been accepted by customers and thereby generated revenue to us. The balance of the delivered tools are awaiting customer acceptance should contractual conditions be met. To date, a substantial majority of our sales of single-wafer wet-cleaning equipment for front-end manufacturing have been to customers located in Asia, and we anticipate that a substantial majority of our revenue from these products will continue to come from customers located in this region for the foreseeable future.

We have begun to add to our efforts to further address customers in North America, Western Europe and Southeast Asia by expanding our direct sales and services teams and increasing our global marketing activities. Our U.S. operation includes sales, marketing and services personnel to expand and support major new customer initiatives for the products of ACM Shanghai to additional regions beyond mainland China. As of September 30, 2022, we have delivered one tool for evaluation to a U.S. lab of a global semiconductor capital equipment vendor, and two tools to the U.S. facility of a major U.S. semiconductor manufacturer. Both of these evaluations are supported by our U.S. services team.

We are focused on building a strategic portfolio of intellectual property to support and protect our key innovations. Our tools have been developed using our key proprietary technologies:

- *Space Alternated Phase Shift, or SAPS, technology for flat and patterned (deep via or deep trench with stronger structure) wafer surfaces.* SAPS technology employs alternating phases of megasonic waves to deliver megasonic energy in a highly uniform manner on a microscopic level. We have shown SAPS technology to be more effective than conventional megasonic and jet spray technologies in removing random defects across an entire wafer, with increasing relative effectiveness at more advanced production nodes.
- *Timely Energized Bubble Oscillation, or TEBO, technology for patterned wafer surfaces at advanced process nodes.* TEBO technology has been developed to provide effective, damage-free cleaning for 2D and 3D patterned wafers with fine feature sizes. We have demonstrated the damage-free cleaning capabilities of TEBO technology on patterned wafers for feature nodes as small as 1xnm (16 to 19 nanometers, or nm), and we have shown TEBO technology can be applied in manufacturing processes for patterned chips with 3D architectures having aspect ratios as high as 60-to-1.
- *Tahoe technology for cost and environmental savings.* Tahoe technology delivers high cleaning performance using significantly less sulfuric acid and hydrogen peroxide than is typically consumed by conventional high-temperature single-wafer cleaning tools.
- *ECP technology for advanced metal plating.* Our Ultra ECP ap, or Advanced Packaging, technology was developed for back-end assembly processes to deliver a more uniform metal layer at the notch area of wafers prior to packaging. Our Ultra ECP map, or Multi-Anode Partial Plating, technology was developed for front-end wafer fabrication processes to deliver advanced electrochemical copper plating for copper interconnect applications. Ultra ECP map offers improved gap-filling performance for ultra-thin seed layer applications, which is critical for advanced nodes at 28nm, 14nm and beyond.

In 2020 we introduced and delivered a range of new tools intended to broaden our revenue opportunity with global semiconductor manufacturers. Product extensions include the Ultra SFP ap tool for advanced packaging solutions, the Ultra C VI 18-chamber single wafer cleaning tool for advanced memory devices, and the Ultra ECP 3d platform for through-silicon-via, or tsv, application. New product lines include the Ultra fn Furnace, our first dry processing tool, and a suite of semi-critical cleaning systems which include single wafer back side cleaning, scrubber, and auto bench cleaning tools.

We have been issued more than 411 patents in the United States, the People’s Republic of China, or PRC, Japan, Singapore, South Korea and Taiwan.

We conduct a substantial majority of our product development, manufacturing, support and services in the PRC, with additional product development and subsystem production in South Korea. Substantially all of our integrated tools are built to order at our manufacturing facilities in the Pudong region of Shanghai, which now encompass a total of 236,000 square feet of floor space for production capacity, with 100,000 square feet having been added in 2021 with the lease of a second building in the Pudong region of Shanghai. In May 2020 ACM Shanghai, through its wholly-owned subsidiary Shengwei Research (Shanghai), Inc., entered into an agreement for a land use right in the Lingang region of Shanghai. In 2020 Shengwei Research (Shanghai), Inc. began a multi-year construction project for a new 1,000,000 square foot development and production center that will incorporate state-of-the-art manufacturing systems and automation technologies, and will provide floor space to support significantly increased production capacity and related research and development, or R&D, activities. We expect to complete construction of the first Lingang manufacturing building and commence initial production in the mid-2023 timeframe. Our experience has shown that chip manufacturers in the PRC and throughout Asia demand equipment meeting their specific technical requirements and prefer building relationships with local suppliers. We will continue to seek to leverage our local presence in the PRC and South Korea through our subsidiaries to address the growing market for semiconductor manufacturing equipment in the region by working closely with regional chip manufacturers to understand their specific requirements, encourage them to adopt our technologies, and enable us to design innovative products and solutions to address their needs.

Recent Developments

COVID-19

The worldwide COVID-19 health pandemic and related government and private sector responsive actions have adversely affected the economies and financial markets of many countries and specifically have negatively impacted the Company’s business operations, including in the PRC and the United States. The continuation of the COVID-19 pandemic could continue to result in economic uncertainty and global economic policies that could reduce demand for the Company’s products and its customers’ chips and have a material adverse impact on the Company’s business, operating results and financial condition. For an explanation of some of the risks we potentially face, please read carefully the information provided under “Item 1A. Risk Factors—Risks Related to the COVID-19 Pandemic,” of part I of this report.

The following summary reflects our expectations and estimates based on information known to us as of the date of this filing:

- *Operations:* We conduct substantially all of our product development, manufacturing, support and services in the PRC through ACM Shanghai, and those activities have been directly impacted by COVID-19 and related restrictions on transportation and public appearances.

In March 2022, several regions in China began to experience elevated levels of COVID-19 infections, and the PRC government instituted policies to restrict the spread of the virus. The policies began with an increase of “spot quarantines,” under which a positive polymerase chain reaction (PCR) or other test would result in the quarantining of individual buildings, groups of buildings, or even full neighborhoods. The policies were later expanded to full-city quarantines, including in the City of Shanghai, where substantially all of ACM Shanghai’s operations are located. COVID-19 related restrictions in Shanghai began to limit employee access to, and logistics activities of, ACM Shanghai’s offices and production facilities in the Pudong district of Shanghai in March 2022, and therefore limited ACM Shanghai’s ability to ship finished products to customers and to produce new products. Spot quarantines in mid-March 2022 began to impact a number of ACM Shanghai’s employees and led to a closure of ACM Shanghai’s administrative and R&D offices in Zhangjiang in the Pudong district. A subsequent quarantine of the entire Pudong region of Shanghai was imposed in late March 2022 and impacted the operation of ACM Shanghai’s Chuansha production facility. Furthermore, a number of our customers have substantial operations based in operations areas of the PRC, including in the City of Shanghai, subject to the full-city restrictions, which began limiting the operations of those customers since the first quarter of 2022, including inhibiting their ability to receive, implement and operate new tools for their manufacturing facilities. As a result, in some cases, ACM Shanghai has been required to defer shipments of finished products to these customers because of operational and logistics limitations affecting customers rather than, or in addition to, ACM Shanghai.

In late April 2022, ACM Shanghai began to resume some operations at the Chuansha manufacturing site using the “closed loop method,” in which a limited collection of workers remains together as a group between a single hotel, the ACM Shanghai facility, and a dedicated bus transportation route, also referred to as “two spots and one line,” and had resumed substantially all of its Chuansha manufacturing site operations by the end of the second quarter of 2022.

In mid-June 2022, substantially all of ACM Shanghai’s R&D and administrative employees at its Zhangjiang facility were allowed to return to work under strict safety protocols after a period of restricted access to the building that for many employees was partially mitigated by being able to work from home. ACM Shanghai has established several policies to help avoid or limit future outbreaks among employees and thus protect employee safety and limit the possibility of a facility reclosing. We anticipate that the effects of the PRC restrictions may continue for several months, with a gradual return of PRC operations, production capacity, and global logistics as Shanghai and other areas in the PRC begin to reopen. We cannot assure that closures or reductions of PRC operations or production, whether of ACM Shanghai or of some of its key customers, may not be extended in upcoming months as the result of business interruptions arising from protective measures being taken by the PRC and other governmental agencies or of other consequences of COVID-19.

Our corporate headquarters are located in Fremont, California in the San Francisco Bay Area and are the subject of a number of state and county public health directives and orders. These actions have not negatively impacted our business to date, however, because of the limited number of employees at our headquarters and the nature of the work they generally perform. To date we have not experienced absenteeism of management or other key employees, other than certain of our executive officers being delayed in traveling between the PRC, our California office, and other global locations.

- *Customers:* Our customers’, including the customers of ACM Shanghai, business operations have been, and are continuing to be, subject to business interruptions arising from the COVID-19 pandemic. Historically substantially all of our revenue has been derived from customers located in the PRC and surrounding areas that have been impacted by COVID-19. Two customers that accounted for 48.9% of our revenue in 2021 are based in the PRC, and three customers that accounted for 75.8% of our revenue in 2020, and 73.8% of our revenue in 2019 are based in the PRC and South Korea. One of those customers, Yangtze Memory Technologies Co., Ltd. — which accounted for 20.2% of our 2021 revenue, 26.8% of our 2020 revenue, and 27.5% of our 2019 revenue — is based in Wuhan. While Yangtze Memory Technologies Co., Ltd. and other key customers continued to operate their fabrication facilities without interruption during and after the first quarter of 2020, some customers have been forced to restrict access of service personnel and deliveries to and from their facilities. We have experienced longer and in some cases more costly shipping expenses in the delivery of tools to certain customers.
- *Suppliers:* Our global supply chain includes components sourced from the PRC, Japan, Taiwan, the United States and Europe. While, to date, we have not experienced material issues with our supply chain beyond the logistics related to the Shanghai facilities of ACM Shanghai, supply chain constraints have intensified due to COVID-19, contributing to global shortages in the supply of semiconductors and other materials, and in some cases the pricing of materials used in the production of our own tools. As with our customers, we continue to be in close contact with our key suppliers to help ensure we are able to identify any potential supply issues that may arise.

- *Projects:* Our strategy includes a number of plans to support the growth of our core business, including ACM Shanghai's acquisition of a land use right in the Lingang area of Shanghai where ACM Shanghai began construction of a new R&D center and factory in July 2020. The extent to which COVID-19 impacts these projects will depend on future developments that are highly uncertain, but to date, the timing of these ongoing projects has not been delayed or significantly disrupted by COVID-19 or related government measures.

During the first six months of 2022, the Company experienced a negative impact to revenue and shipments as a result of restricted access and logistics to its Shanghai-based production and administrative facilities. Thirteen tools amounting to \$13 million in revenue and \$24 million in shipments that could not be shipped to customers in the three-months ended March 30, 2022 were subsequently shipped in the three months ended June 30, 2022. As a result of the restrictions, the Company experienced a modest increase to operational costs due to increased logistics costs and inefficiencies that resulted from the restrictions, and an increase in cash used in operations due in part to an increase in accounts receivables that resulted from a shift of shipments towards the latter part of the period.

During the three and nine-months ended September 30, 2022, the Company experienced general inefficiencies in administrative, research and development and other activities due to some employees who were required to quarantine 'in place' at their residence due presumably to the detected possible exposure to COVID infections. In many cases, the employees were able to work remotely to mitigate the effects. The Company anticipates the PRC's zero-covid policy will impact its PRC operations for the foreseeable future in the form of regular testing and/or required quarantines-in-place. The Company cannot assure that closures or reductions of operations or production, whether of ACM Shanghai or of some of its key customers, may not be extended or re-introduced during the remainder of 2022 as the result of business interruptions arising from protective measures being taken by the PRC and other governmental agencies or of other consequences of COVID-19.

PRC Government Research and Development Funding

ACM Shanghai has received seven special government grants. The first grant, which was awarded in 2008, relates to the development and commercialization of 65nm to 45nm stress-free polishing technology. The second grant was awarded in 2009 to fund interest expense on short-term borrowings. The third grant was made in 2014 and relates to the development of electro copper-plating technology. The fourth grant was made in June 2018 and related to development of polytetrafluoroethylene. The fifth grant was made in 2020, and relates to the development of Tahoe single bench cleaning technologies. As of December 31, 2021, the fourth and fifth grants had been fully utilized. The sixth grant was made in 2020, and relates to the development of other cleaning technologies. The seventh grant was made in 2021, and relates to the development of the R&D and production center in the Lin-gang Special Area of Shanghai. These governmental authorities provide significant funding, although ACM Shanghai and ACM Shengwei is also required to invest certain amounts in the projects.

The governmental grants contain certain operating conditions, and we are required to go through a government due diligence process once the project is complete. The grants therefore are recorded as long-term liabilities upon receipt, although we are not required to return any funds ACM Shanghai receives. Grant amounts are recognized in our statements of operations and comprehensive income as follows:

- Government subsidies relating to current expenses are recorded as reductions of those expenses in the periods in which the current expenses are recorded. For the nine months ended September 30, 2022 and 2021, related government subsidies recognized as reductions of relevant expenses in the consolidated statements of operations and comprehensive income (loss) were \$0.3 million and \$7.1 million, respectively.
- Government subsidies related to depreciable assets are credited to income over the useful lives of the related assets for which the grant was received. For the nine months ended September 30, 2022 and 2021, related government subsidies recognized as other income in the consolidated statements of operations and comprehensive income (loss) were \$232,000 and \$136,000, respectively.

Unearned government subsidies received are deferred for recognition and recorded as other long-term liabilities (see Note 13 in the Notes to Condensed Consolidated Financial Statements included herein under “Item 1. Financial Statements.”) in the balance sheet until the criteria for such recognition are satisfied.

Net Income Attributable to Non-Controlling Interests

In 2019 ACM Shanghai sold a total number of shares representing 8.3% of its outstanding ACM Shanghai shares, after which ACM Research held the remaining 91.7% of ACM Shanghai’s outstanding shares. In 2021 ACM Shanghai sold a total number shares representing an additional 10% of its outstanding ACM Shanghai shares in its STAR IPO, after which ACM Research held the remaining 82.5% of ACM Shanghai’s outstanding shares. As a result, we reflect the portion of our net income allocable to the minority holders of ACM Shanghai shares as net income attributable to non-controlling interests.

Critical Accounting Policies and Estimates

There were no significant changes in our critical accounting policies or significant judgments or estimates during the three months ended September 30, 2022 to augment the critical accounting estimates disclosed under the heading “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report, other than those described in the notes to the condensed consolidated financial statements included in this report. For information regarding the impact of recently adopted accounting standards, refer to note 2 to the condensed consolidated financial statements included in this report.

Recent Accounting Pronouncements

A discussion of recent accounting pronouncements is included in our Annual Report and is updated in note 2 to the condensed consolidated financial statements included in this report.

Results of Operations

The following table sets forth our results of operations for the periods presented, as percentages of revenue.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Revenue	100.0%	100.0%	100.0%	100.0%
Cost of revenue	50.7	55.7	53.7	57.8
Gross margin	49.3	44.3	46.3	42.2
Operating expenses:				
Sales and marketing	9.8	9.5	9.8	10.6
Research and development	11.7	11.7	15.8	12.9
General and administrative	4.1	5.5	5.6	6.7
Total operating expenses, net	25.6	26.7	31.2	30.3
Income from operations	23.7	17.6	15.1	11.9
Interest income (expense), net	1.2	(0.2)	1.8	(0.3)
Realized gain from sale of trading securities	0.8	0.0	0.4	0.0
Unrealized gain (loss) on trading securities	(3.9)	(1.4)	(3.4)	1.1
Other income (expense), net	5.4	(0.4)	3.5	(0.4)
Equity income in net income of affiliates	0.9	0.6	0.6	0.6
Income before income taxes	28.1	16.2	18.0	12.9
Income tax benefit (expense)	(7.8)	0.4	(5.0)	1.8
Net income	20.3	16.6	13.0	14.8
Less: Net income attributable to non-controlling interests	4.5	1.5	3.2	1.3
Net income attributable to ACM Research, Inc.	15.8%	15.1%	9.8%	13.5%

Comparison of Three Months Ended September 30, 2022 and 2021
Revenue

	Three Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Revenue	\$ 133,709	\$ 67,013	99.5%	\$ 66,696
Single wafer cleaning, Tahoe and semi-critical cleaning equipment	\$ 99,720	\$ 49,448	101.7%	\$ 50,272
ECP (front-end and packaging), furnace and other technologies	24,521	8,200	NM	16,321
Advanced packaging (excluding ECP), services & spares	9,468	9,365	1.1%	103
Total Revenue by Product Category	\$ 133,709	\$ 67,013	99.5%	\$ 66,696
Wet-cleaning and other front-end processing tools	\$ 117,941	\$ 49,448	138.5%	\$ 68,493
Advanced packaging, other processing tools, services and spares	15,768	17,565	-10.2%	-1,797
Total Revenue Front and Back-End	\$ 133,709	\$ 67,013	99.5%	\$ 66,696

Revenue increased by \$66.7 million in the three months ended September 30, 2022 as compared to the same period in 2021. The increase was driven primarily by higher sales of single wafer cleaning, Tahoe and semi-critical cleaning equipment, and increased contribution from newer ECP (front-end and packaging), furnace and other technologies. The impact to our Shanghai production operations from COVID-19-related restrictions was lower for the period as compared to the impact experienced during the first six months of 2022. The increased demand from PRC-based customers is due in part to their longer term commitment to increase production capacity to achieve a greater share of the mainland China semiconductor market.

Cost of Revenue and Gross Margin

	Three Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Cost of revenue	\$ 67,742	\$ 37,328	81.5%	\$ 30,414
Gross profit	65,967	29,685	122.2%	36,282
Gross margin	49.3%	44.3%	11.4%	504

Cost of revenue increased \$30.4 million and gross profit increased \$36.3 million in the three months ended September 30, 2022 as compared to the corresponding period in 2021 due to the increased sales volume, and an increase in gross margin. The increased gross margin versus the prior-year period was primarily due to a higher mix of ECP (front-end and packaging), furnace, and other technologies, and a positive impact due to a change in the RMB to US dollar currency exchange rate.

Gross margin may vary from period to period, primarily related to the level of utilization and the timing and mix of revenue. We expect gross margin to be between 40.0% and 45.0% for the foreseeable future, with direct manufacturing costs approximating 50.0% to 55.0% of revenue and overhead costs totaling 5.0% of revenue.

Operating Expenses

	Three Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Sales and marketing expense	\$ 13,133	\$ 6,363	106.4%	\$ 6,770
Research and development expense	15,678	7,856	99.6%	7,822
General and administrative expense	5,520	3,671	50.4%	1,849
Total operating expenses	<u>\$ 34,331</u>	<u>\$ 17,890</u>	<u>91.9%</u>	<u>\$ 16,441</u>

Sales and marketing expense increased by \$6.8 million in the three months ended September 30, 2022 as compared to the corresponding period in 2021, and reflected an increase of \$3.4 million due to higher costs of tools built for promotional purposes for current or potential new customers, an increase of \$3.0 million due to increased costs for personnel, commissions, outside services, travel & entertainment and other costs, and an increase of \$0.4 million due to warranty accruals.

Sales and marketing expense consists primarily of:

- compensation of personnel associated with pre- and after-sale services and support and other sales and marketing activities, including stock-based compensation;
- sales commissions paid to independent sales representatives;
- fees paid to sales consultants;
- cost of trade shows;
- costs of tools built for promotional purposes for current or potential new customers;
- travel and entertainment; and
- allocated overhead for rent and utilities.

We expect that, for the foreseeable future, sales and marketing expenses will increase in dollars, as we incur additional costs associated with growing our customer base in mainland China and regions outside of mainland China.

Research and development expense increased by \$7.8 million in the three months ended September 30, 2022 as compared to the corresponding period in 2021, reflecting an increase of \$3.4 million in costs of components, costs of tools built for product development purposes, and costs of other research and development supplies, and an increase of \$3.0 million for personnel, stock-based compensation, and travel & entertainment costs to support product development, and an increase of \$1.4 million for outside services and other R&D related expenses.

Research and development expense represented 11.7% and 11.7% of our revenue in the three months ended September 30, 2022 and 2021, respectively. Without reduction by grant amounts received from PRC governmental authorities (see “—Government Research and Development Funding”), gross research and development expense totaled \$15.9 million, or 11.9% of total revenue, in the three months ended September 30, 2022 as compared to \$9.3 million, or 13.8% of revenue, in the corresponding period in 2021. Research and development expense relates to the development of new products and processes and encompasses our research, development and customer support activities. Research and development expense consists primarily of:

- compensation of personnel associated with our research and development activities, including stock based compensation;
- costs of components and other research and development supplies;
- costs of tools built for product development purposes;
- travel expense associated with the research of technical requirements for product development purposes and testing of concepts under consideration;
- amortization of costs of software used for research and development purposes; and

- allocated overhead for rent and utilities.

We expect that, for the foreseeable future, research and development expenses will increase in dollars, as we incur additional costs to expand our product portfolio to address additional production steps and expand our research and development team to new regions.

General and administrative expense increased \$1.8 million in the three months ended September 30, 2022 as compared to the corresponding period in 2021. General and administrative expense consists primarily of:

- compensation of executive, accounting and finance, human resources, information technology, and other administrative personnel, including stock-based compensation;
- professional fees, including accounting and corporate legal and defense fees;
- other corporate expenses including insurance; and
- allocated overhead for rent and utilities.

We expect that, for the foreseeable future, general and administrative expenses will increase in dollars, as we incur additional costs associated with growing our business, ACM Research operating a public company in the United States and ACM Shanghai operating as a public company in the PRC.

Income from Operations

	Three Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Income from operations	\$ 31,636	\$ 11,795	168.2%	\$ 19,841

Income from operations increased by \$19.8 million during the three months ended September 30, 2022 as compared to the prior year period, due to \$36.3 million increase in gross profit, partly offset by a \$16.4 million increase in operating expenses.

Interest income (expense), net, Other Income (expense), net

	Three Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Interest Income	\$ 2,016	\$ 33	6009.1%	\$ 1,983
Interest Expense	(419)	(191)	119.4%	(228)
Interest Income (expense), net	\$ 1,597	\$ (158)	-1110.8%	\$ 1,755
Other income (expense), net	\$ 7,207	\$ (255)	-2926.3%	\$ 7,462

Interest income (expense), net consists of interest earned on our cash and equivalents, restricted cash accounts, and short term and long term time deposits, offset by interest expense incurred from outstanding short-term and long-term borrowings. We realized \$1.6 million of interest income (expense), net in the three months ended September 30, 2022 as compared to an expense of \$158,000 of interest income (expense), net in the corresponding period in 2021. The significant change from the year-ago-period resulted from a slightly lower balance of cash and equivalents and time deposits together with higher interest rates on these balances, partly offset by a higher balance of short-term and long-term borrowings.

Other income (expense), net primarily reflects (a) gains or losses recognized from the impact of exchange rates on our foreign currency-denominated working-capital transactions and (b) depreciation of assets acquired with government subsidies, as described under “—Government Research and Development Funding” above. We realized \$7.2 million of other income (expense) in the three months ended September 30, 2022, of which \$6.4 million was due to gains realized from transactions that resulted from changes in the RMB-to-U.S. dollar exchange rate, as compared to a loss of (\$0.3) million in the corresponding period in 2021.

Realized gain and unrealized loss from trading securities, and equity income in net income of affiliates.

	Three Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Realized gain from sale of trading securities	\$ 1,136	\$ -	100.0%	\$ 1,136
Unrealized (loss) on trading securities	\$ (5,281)	\$ (919)	474.6%	\$ (4,362)
Equity income in net income of affiliates	\$ 1,251	\$ 421	197.1%	\$ 830

We recorded a realized gain from sale of trading securities of \$1.1 million for the three months ended September 30, 2022 due to a sale of ACM Shanghai’s indirect investment in SMIC shares on the STAR Market as is described in note 15 to the condensed consolidated financial statements included in this report.

We recorded an unrealized loss on trading securities of \$5.3 million for the three months ended September 30, 2022 as compared to an unrealized loss of \$0.9 million for the same period in 2021, based on a change in market value of ACM Shanghai’s indirect investment in SMIC shares on the STAR Market as is described in note 15 to the condensed consolidated financial statements included in this report.

Equity income in net income of affiliates increased by \$0.8 million for the three months ended September 30, 2022 due to higher net income from investments in affiliates (note 14).

Income Tax Benefit (Expense)

The following presents components of income tax benefit (expense) for the indicated periods:

	Three Months Ended September 30,	
	2022	2021
	<i>(in thousands)</i>	
Total income tax benefit (expense)	\$ (10,470)	\$ 266

We recognized a tax expense of \$10.5 million for the three months ended September 30, 2022 as compared to a tax benefit of \$266,000 for the prior year period. The increased tax expense in 2022 primarily resulted from the tax effect of increased operating profit generated and an increase in our effective income tax rate. The increase in our effective income tax rate for the three months ended September 30, 2022 compared to the same period of the prior year was primarily due to a new requirement to capitalize and amortize previously deductible research and experimental expenses resulting from a change in Section 174 made by the Tax Cuts and Jobs Act of 2017 (the “TCJA”) which became effective on January 1, 2022, and a decrease in discrete tax benefits associated with stock-based compensation deductions. The capitalization of overseas R&D expenses resulted in a significant increase in our global intangible low-taxed income inclusion. Congress is considering legislation, but legislation has not passed, that would defer the capitalization requirement to later years.

Our effective tax rate differs from statutory rates of 21% for U.S. federal income tax purposes and 12.5% to 25% for Chinese income tax purposes due to the treatment of stock-based compensation including the impact from stock option exercises and non-US research expenses. Our two PRC subsidiaries, ACM Shanghai and ACM Research (Wuxi), Inc., are liable for PRC corporate income taxes at the rates of 12.5% and 25%, respectively. Pursuant to the Corporate Income Tax Law of the PRC, our PRC subsidiaries generally would be liable for PRC corporate income taxes at a rate of 25%. According to Guoshuihan 2009 No. 203, an entity certified as an “advanced and new technology enterprise” is entitled to a preferential income tax rate of 15%. ACM Shanghai was certified as an “advanced and new technology enterprise” in 2012 and again in 2016, 2018, and 2021 with an effective period of three years. In 2021, ACM Shanghai was certified as an eligible integrated circuit production enterprise and is entitled to a preferential income tax rate of 12.5% from January 1, 2020 to December 31, 2022.

We file income tax returns in the United States and state and foreign jurisdictions. Those federal, state and foreign income tax returns are under the statute of limitations subject to tax examinations for 1999 through 2021. To the extent we have tax attribute carryforwards, the tax years in which the attribute was generated may still be adjusted upon examination by the Internal Revenue Service or state or foreign tax authorities to the extent utilized in a future period.

Net Income Attributable to Non-Controlling Interests

	Three Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Net income attributable to non-controlling interests	\$ 6,072	\$ 995	510.3%	\$ 5,077

In 2019 ACM Shanghai sold a total number of shares representing 8.3% of its outstanding ACM Shanghai shares, after which ACM Research held the remaining 91.7% of ACM Shanghai’s outstanding shares. In 2021 ACM Shanghai sold a total number shares representing an additional 10% of its outstanding ACM Shanghai shares in its STAR IPO, after which ACM Research held the remaining 82.5% of ACM Shanghai’s outstanding shares. As a result, we reflect, the portion of our net income allocable to the minority holders of ACM Shanghai shares as net income attributable to non-controlling interests.

In the three months ended September 30, 2022, this amount totaled \$6.1 million as compared to \$1.0 million in the corresponding period in 2021.

Foreign currency translation adjustment

	Three Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Foreign currency translation adjustment	\$ (42,416)	\$ (409)	10270.7%	\$ (42,007)

We recorded a foreign currency translation adjustment of (\$42.4) million for the three months ended September 30, 2022, as compared to (\$0.4) million for the same period in 2021, based on the net effect of RMB to dollar exchange rate fluctuations for the period on the converted value of ACM Shanghai’s RMB-denominated balances to U.S. dollar equivalents. The amount was especially large due to a significant weakening of the RMB versus the U.S. dollar during the period.

Comparison of Nine Months Ended September 30, 2022 and 2021
Revenue

	Nine Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Revenue	\$ 280,290	\$ 164,609	70.3%	\$ 115,681
Single wafer cleaning, Tahoe and semi-critical cleaning equipment	\$ 198,336	\$ 127,322	55.8%	\$ 71,014
ECP (front-end and packaging), furnace and other technologies	57,269	13,750	316.5%	43,519
Advanced packaging (excluding ECP), services & spares	24,685	23,537	4.9%	1,148
Total Revenue By Product Category	\$ 280,290	\$ 164,609	70.3%	\$ 115,681
Wet-cleaning and other front-end processing tools	\$ 229,195	\$ 127,322	80.0%	\$ 101,873
Advanced packaging, other processing tools, services and spares	51,095	37,287	37.0%	13,808
Total Revenue Front-end and Back-End	\$ 280,290	\$ 164,609	70.3%	\$ 115,681

Revenue increased by \$115.7 million in the nine months ended September 30, 2022 as compared to the same period in 2021. The increase was driven primarily by higher sales of single wafer cleaning, Tahoe and semi-critical cleaning equipment, and increased contribution from newer ECP (front-end and packaging), furnace and other technologies. Revenue was impacted by COVID-19 related restrictions which reduced production output and logistics to and from our facilities for several months particularly during the first half of the year, with a return to more normal operations in the August timeframe. The increased demand from PRC-based customers is due in part to their longer term commitment to increase production capacity to achieve a greater share of the mainland China semiconductor market.

Cost of Revenue and Gross Margin

	Nine Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Cost of revenue	\$ 150,480	\$ 95,199	58.1%	\$ 55,281
Gross profit	\$ 129,810	\$ 69,410	87.0%	\$ 60,400
Gross margin	46.3%	42.2%	4.15%	415

Cost of revenue increased \$55.3 million and gross profit increased \$60.4 million in the nine months ended September 30, 2022 as compared to the corresponding period in 2021 due to the increased sales volume, and an increase in gross margin. The increased gross margin versus the prior-year period was primarily due to a higher mix of ECP (front-end and packaging), furnace, and other technologies, and a positive impact due to a change in the RMB to US dollar currency exchange rate.

Gross margin may vary from period to period, primarily related to the level of utilization and the timing and mix of purchase orders. We expect gross margin to be between 40.0% and 45.0% for the foreseeable future, with direct manufacturing costs approximating 50.0% to 55.0% of revenue and overhead costs totaling 5.0% of revenue.

Operating Expenses

	Nine Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Sales and marketing expense	\$ 27,494	\$ 17,460	57.5%	\$ 10,034
Research and development expense	44,391	21,293	108.5%	23,098
General and administrative expense	15,560	11,081	40.4%	4,479
Total operating expenses	\$ 87,445	\$ 49,834	75.5%	\$ 37,611

Sales and marketing expense increased by \$10.0 million in the nine months ended September 30, 2022 as compared to the corresponding period in 2021, and reflected an increase of \$5.2 million due to higher costs of tools built for promotional purposes for current or potential new customers, and an increase of \$3.5 million due increased costs for personnel, commissions, outside services, travel & entertainment costs, and an increase of \$1.3 million due to warranty accruals.

Sales and marketing expense consists primarily of:

- compensation of personnel associated with pre- and after-sale services and support and other sales and marketing activities, including stock-based compensation;
- sales commissions paid to independent sales representatives;
- fees paid to sales consultants;
- cost of trade shows;
- costs of tools built for promotional purposes for current or potential new customers;
- travel and entertainment; and
- allocated overhead for rent and utilities.

We expect that, for the foreseeable future, sales and marketing expenses will increase in dollars, as we incur additional costs associated with growing our customer base in mainland China and regions outside of mainland China.

Research and development expense increased by \$23.1 million in the nine months ended September 30, 2022 as compared to the corresponding period in 2021, reflecting an increase of \$9.4 million for personnel, stock-based compensation, and travel & entertainment costs to support product development, an increase of \$8.4 million in costs of components, costs of tools built for product development purposes, and an increase of \$5.3 million for outside services, and other R&D related expenses.

Research and development expense represented 15.8% and 12.9% of our revenue in the nine months ended September 30, 2022 and 2021, respectively. Without reduction by grant amounts received from PRC governmental authorities (see “—Government Research and Development Funding”), gross research and development expense totaled \$44.7 million, or 15.9% of total revenue, in the nine months ended September 30, 2022 and \$28.4 million, or 17.3% of revenue, in the corresponding period in 2021. Research and development expense relates to the development of new products and processes and encompasses our research, development and customer support activities. Research and development expense consists primarily of:

- compensation of personnel associated with our research and development activities, including stock based compensation;
- costs of components and other research and development supplies;
- costs of tools built for product development purposes;
- travel expense associated with the research of technical requirements for product development purposes and testing of concepts under consideration;
- amortization of costs of software used for research and development purposes; and
- allocated overhead for rent and utilities.

We expect that, for the foreseeable future, research and development expenses will increase in dollars, as we incur additional costs to expand our product portfolio to address additional production steps and expand our research and development team to new regions.

General and administrative expense increased \$4.5 million in the nine months ended September 30, 2022 as compared to the corresponding period in 2021. General and administrative expense consists primarily of:

- compensation of executive, accounting and finance, human resources, information technology, and other administrative personnel, including stock-based compensation;

- professional fees, including accounting and corporate legal and defense fees;
- other corporate expenses including insurance; and
- allocated overhead for rent and utilities.

We expect that, for the foreseeable future, general and administrative expenses will increase in dollars, as we incur additional costs associated with growing our business, ACM Research operating a public company in the United States and ACM Shanghai operating a public company in the PRC.

Income from operations

	Nine Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Income from operations	\$ 42,365	\$ 19,576	116.4%	\$ 22,789

Income from operations increased by \$22.8 million during the nine months ended September 30, 2022 as compared to the prior year period, due to an \$60.4 million increase in gross profit, partly offset by a \$37.6 million increase in operating expenses.

Interest income (expense), net, Other Income (expense), net

	Nine Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Interest Income	\$ 5,965	\$ 113	5178.8%	\$ 5,852
Interest Expense	(986)	(574)	71.8%	(412)
Interest Income (expense), net	<u>\$ 4,979</u>	<u>\$ (461)</u>	<u>-1180.0%</u>	<u>\$ 5,440</u>
Other income (expense), net	\$ 9,949	\$ (683)	-1556.7%	\$ 10,632

Interest income (expense), net consists of interest earned on our cash and equivalents and restricted cash accounts, offset by interest expense incurred from outstanding short-term borrowings. We realized \$5.0 million of interest income (expense), net in the nine months ended September 30, 2022 as compared to (\$461,000) of interest income (expense), net in the corresponding period in 2021. The significant increase from the year-ago-period resulted from a higher balance of cash and equivalents and time deposits, and higher interest rates on these balances.

Other income, net primarily reflects (a) gains or losses recognized from the impact of exchange rates on our foreign currency-denominated working-capital transactions and (b) depreciation of assets acquired with government subsidies, as described under “—Government Research and Development Funding” above. We realized \$9.9 million of other income (expense) in the three months ended September 30, 2022, of which \$8.8 million was due to gains realized from transactions that resulted from changes in the RMB-to-U.S. dollar exchange rate, as compared to a loss of (\$0.7) million in the corresponding period in 2021. The variance was due primarily to the impact to transactions that resulted from changes in the RMB-to-U.S. dollar exchange rate during the respective periods.

Unrealized loss from trading securities and equity income in net income of affiliates

	Nine Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Realized gain from sale of trading securities	\$ 1,136	\$ -	100.0%	\$ 1,136
Unrealized gain (loss) on trading securities	\$ (9,562)	\$ 1,817	-626.3%	\$ (11,379)
Equity income in net income of affiliates	\$ 1,652	\$ 1,036	59.5%	\$ 616

We recorded a realized gain from sale of trading securities of \$1.1 million for the nine months ended September 30, 2022, due to a sale of ACM Shanghai's indirect investment in SMIC shares on the STAR Market as is described in note 15 to the condensed consolidated financial statements included in this report.

We recorded an unrealized loss on trading securities of \$9.6 million for the nine months ended September 30, 2022, as compared to an unrealized gain of \$1.8 million for the same period in 2021, based on a change in market value of ACM Shanghai's indirect investment in SMIC shares on the STAR Market as is described in note 15 to the condensed consolidated financial statements included in this report.

Equity income in net income of affiliates increased by \$0.6 million for the nine months ended September 30, 2022.

Income Tax Benefit (Expense)

The following presents components of income tax benefit (expense) for the indicated period:

	Nine Months Ended September 30,	
	2022	2021
	<i>(in thousands)</i>	
Total income tax benefit (expense)	\$ (14,138)	\$ 3,021

We recognized a tax expense of \$14.1 million for the nine months ended September 30, 2022 as compared to a tax benefit of \$3 million for prior year period. The increased tax expense in 2022 primarily resulted from the tax effect of increased operating profit generated and an increase in our effective income tax rate. The increase in our effective income tax rate for the nine months ended September 30, 2022 compared to the same period of the prior year was primarily due to a new requirement to capitalize and amortize previously deductible research and experimental expenses resulting from a change in Section 174 made by the TCJA which became effective on January 1, 2022, and a decrease in discrete tax benefits associated with stock-based compensation deductions. The capitalization of overseas R&D expenses resulted in a significant increase in our global intangible low-taxed income inclusion. Congress is considering legislation, but legislation has not passed, that would defer the capitalization requirement to later years.

Our effective tax rate differs from statutory rates of 21% for U.S. federal income tax purposes and 12.5% to 25% for Chinese income tax purposes due to the treatment of stock-based compensation including the impact from stock option exercises and non-US research expenses. Our two PRC subsidiaries, ACM Shanghai and ACM Research (Wuxi), Inc., are liable for PRC corporate income taxes at the rates of 12.5% and 25%, respectively. Pursuant to the Corporate Income Tax Law of the PRC, our PRC subsidiaries generally would be liable for PRC corporate income taxes at a rate of 25%. According to Guoshuihan 2009 No. 203, an entity certified as an "advanced and new technology enterprise" is entitled to a preferential income tax rate of 15%. ACM Shanghai was certified as an "advanced and new technology enterprise" in 2012 and again in 2016, 2018, and 2021, with an effective period of three years. In 2021, ACM Shanghai was certified as an eligible integrated circuit production enterprise and is entitled to a preferential income tax rate of 12.5% from January 1, 2020 to December 31, 2022.

We file income tax returns in the United States and state and foreign jurisdictions. Those federal, state and foreign income tax returns are under the statute of limitations subject to tax examinations for 1999 through 2021. To the extent we have tax attribute carryforwards, the tax years in which the attribute was generated may still be adjusted upon examination by the Internal Revenue Service or state or foreign tax authorities to the extent utilized in a future period.

Net Income Attributable to Non-Controlling Interests

	<u>Nine Months Ended September 30,</u>		<u>% Change</u>	<u>Absolute Change</u>
	<u>2022</u>	<u>2021</u>		
	<i>(in thousands)</i>			
Net income attributable to non-controlling interests	\$ 8,927	\$ 2,114	322.3%	\$ 6,813

In 2019 ACM Shanghai sold shares representing 8.3% of its outstanding ACM Shanghai shares, after which ACM Research held the remaining 91.7% of ACM Shanghai's outstanding shares. In 2021 ACM Shanghai sold a total number shares representing an additional 10% of its outstanding ACM Shanghai shares in its STAR IPO, after which ACM Research held the remaining 82.5% of ACM Shanghai's outstanding shares. As a result, we reflect, the portion of our net income allocable to the minority holders of ACM Shanghai shares as net income attributable to non-controlling interests.

In the nine months ended September 30, 2022, this amount totaled \$8.9 million as compared to \$2.1 million in the corresponding period in 2021.

Foreign currency translation adjustment

	<u>Nine Months Ended September 30,</u>		<u>% Change</u>	<u>Absolute</u>
	<u>2022</u>	<u>2021</u>		
	<i>(in thousands)</i>			
Foreign currency translation adjustment	\$ (80,334)	\$ 1,259	-6480.8%	\$ (81,593)

We recorded a foreign currency translation adjustment of (\$80.3) million for the nine months ended September 30, 2022, as compared to \$1.3 million for the same period in 2021, based on the net effect of RMB to dollar exchange rate fluctuations for the period on the converted value of ACM Shanghai's RMB-denominated balances to U.S. dollar equivalents. The amount was especially large due to a significant weakening of the RMB versus the U.S. dollar during the period.

Liquidity and Capital Resources

During the first nine months of 2022, we funded our technology development and operations principally through our beginning global cash balances, including the cash balances at ACM Shanghai, and borrowings by ACM Shanghai from local financial institutions. Cash and cash equivalents, short-term time deposits and long-term time deposits were \$472.9 million at September 30, 2022, compared to \$562.5 million at December 31, 2021. The \$89.7 million decrease was primarily driven by \$36.8 million provided by financing activities, offset by \$63.9 million of cash used by operations, a \$42.6 million decline from the effect of exchange rate on cash, cash equivalents and restricted cash, and \$20.2 million net cash used in investing activities.

	September 30, 2022	December 31, 2021
	<i>(In thousands)</i>	
<i>Cash and cash equivalents and time deposits:</i>		
Cash and cash equivalents	336,275	562,548
Short-term time deposits	66,176	-
Long-term time deposits	70,400	-
Total	\$ 472,851	\$ 562,548

Our future working capital needs beyond the next twelve months will depend on many factors, including the rate of our business and revenue growth, the payment schedules of our customers, the timing and magnitude of our capital expenditures, and the timing of investment in our research and development as well as sales and marketing. We believe our existing cash and cash equivalents and short-term and long-term time deposits, our cash flow from operating activities, and bank borrowings by ACM Shanghai will be sufficient to meet our anticipated cash needs within our longer term planning horizon.

ACM Shanghai has historically participated in certain PRC government-sponsored grant and subsidy programs, as described under “—Key Components of Results of Operations—PRC Government Research and Development Funding” and “—Contractual Obligations” and we expect that ACM Shanghai will continue to take advantage of these programs when they are available and fit with our business strategy. ACM Shanghai generally applies for these grants and subsidies through the applicable PRC government agency’s defined processes. Periodically, the public relations department researches the availability of these grants and subsidies through the PRC government agencies with whom ACM Shanghai files business surveys and taxes. Management of ACM Shanghai then assesses which grants and subsidies for which ACM Shanghai may be eligible and submits the relevant application. The decision to award the grant to ACM Shanghai is made by the relevant PRC government agencies based on suitability and the merits of the application. Neither ACM Research, nor ACM Shanghai or any of our other subsidiaries, has any direct relationship with any PRC government agency, and our anticipated cash needs for the next twelve months neither anticipate, nor require, receipt of any PRC government grants or subsidies.

To the extent our cash and cash equivalents, cash flow from operating activities and short-term bank borrowings are insufficient to fund our future activities in accordance with our strategic plan, we may determine to raise additional funds through public or private debt or equity financings or additional bank credit arrangements. We also may need to raise additional funds in the event we determine in the future to effect one or more acquisitions of businesses, technologies and products. If additional funding is necessary or desirable, we may not be able to obtain bank credit arrangements or to affect an equity or debt financing on terms acceptable to us or at all.

Restrictions under PRC laws and regulations as well as restrictions under ACM Shanghai’s bank loan agreements, may significantly restrict ACM Shanghai’s ability to transfer a portion of ACM Shanghai’s net assets to ACM Research, other subsidiaries of ACM Research and to holders of ACM Research Class A common stock. See “Item 1A. Risk Factors—Regulatory Risks—The PRC’s currency exchange control and government restrictions on investment repatriation may impact our ability to transfer funds outside of the PRC, which could materially and adversely affect our ability to grow, make investments or acquisitions that could benefit our business, otherwise fund and conduct our business, or pay dividends on our common stock” in our Annual Report.

For the nine months ended September 30, 2022 and 2021, no transfers, dividends, or distributions have been made between ACM Research, and its subsidiaries, including ACM Shanghai, or to holders of ACM Research Class A common stock.

Our cash and cash equivalents at September 30, 2022 were held for working capital purposes and other potential investments. ACM Shanghai, our only direct PRC subsidiary, is, however, subject to PRC restrictions on distributions to equity holders. The use of proceeds raised by the STAR Market IPO, without further approvals, are limited to specific usage. We currently intend for ACM Shanghai to retain all available funds any future earnings for use in the operation of its business and do not anticipate its paying any cash dividends. Our accounts receivable balance fluctuates from period to period, which affects our cash flow from operating activities. Fluctuations vary depending on cash collections, client mix, and the timing of shipment and acceptance of our tools.

We have never declared or paid cash dividends on our capital stock. We intend to retain all available funds and any future earnings to support the operation of and to finance the growth and development of our business and do not anticipate paying any cash dividends in the foreseeable future.

Cash Flow Used in Operating Activities. Net cash used by operations of \$63.9 million during the nine months ended September 30, 2022 consisted of:

	Nine Months Ended September 30,	
	2022	2021
	<i>(In thousands)</i>	
Net Income	\$ 36,381	\$ 24,306
Depreciation and amortization	4,104	1,597
Realized gain on trading securities	(1,136)	-
Equity income in net income of affiliates	(1,652)	(1,036)
Unrealized loss (gain) on trading securities	9,562	(1,817)
Deferred income taxes	5,036	(4,666)
Stock-based compensation	5,236	3,823
Net changes in operating assets and liabilities:	(121,061)	(26,029)
Net cash flow used in operating activities	\$ (63,530)	\$ (3,822)

Significant changes in operating asset and liability accounts included the following uses of cash: increases of inventories of \$132 million (Note 5), and an increase of accounts receivable of \$96.8 million (Note 4). As described under “—Key Components of Results of Operations—PRC Government Research and Development Funding,” ACM Shanghai has received research and development grants from local and central PRC governmental authorities. ACM Shanghai received \$48,000 payments related to such grants in the first nine months of 2022, as compared to cash receipts of \$4.2 million in the same period of 2021.

The uses of cash are offset by the following significant sources of cash: an increase in advances from customers of \$88.9 (Note 3), an increase in other payables and accrued expenses of \$10.6 million, and an increase in accounts payable of \$10.2 million.

Cash Flow from Investing Activities. Net cash used for investing activities, excluding net cash used to purchase time deposits, for the nine-months ended September 30, 2022 was \$20.2 million, primarily consisting of \$18.4 million purchase of property and equipment, \$4.2 million purchase of long term investment (Note 14), \$1 million investments in affiliates (Note 14), and \$1.1 million purchase of intangible assets, offset by \$4.5 million in proceeds from selling trading securities (Note 15).

Cash Flow from Financing Activities. Net cash provided by financing for the nine-months ended September 30, 2022 was \$36.8 million, primarily consisting of \$35.7 million net proceeds from short and long-term borrowings, and \$1.2 million in proceeds from the exercise of stock options.

ACM Shanghai, together with its subsidiaries, has short-term and long-term borrowings with five banks, as follows:

<u>Lender</u>	<u>Agreement Date</u>	<u>Maturity Date</u>	<u>Annual Interest Rate</u>	<u>Maximum Borrowing Amount(1)</u>	<u>Amount Outstanding at September 30, 2022</u>
				<i>(in thousands)</i>	
China Everbright Bank	July 2021	September 2023	3.40%~3.60%	RMB150,000	RMB120,000
				\$ 21,120	\$ 16,896
Bank of Communications	August 2022	September 2023	3.50%~3.60%	RMB100,000	RMB100,000
				\$ 14,080	\$ 14,080
Bank of China	August 2022	August 2023	3.15%	RMB40,000	RMB40,000
				\$ 5,632	\$ 5,632
China Merchants Bank	October 2021	October 2022	3.50%	RMB100,000	RMB100,000
				\$ 14,080	14,080.00
China Merchants Bank	November 2020	Repayable by installments and the last installments repayable in November 2030	3.95%	RMB128,500	RMB109,149
				\$ 18,093	\$ 15,368
Bank of China	June 2021	Repayable by installments and the last installments repayable in June 2024	2.60%	RMB10,000	RMB9,000
				\$ 1,408	\$ 1,267
Bank of China	September, 2021	Repayable by installments and the last installments repayable in September 2021	2.60%	RMB35,000	RMB31,500
				\$ 4,928	\$ 4,435
				<u>\$ 79,341</u>	<u>\$ 71,758</u>

(1) Converted from RMB to dollars as of September 30, 2022. All of the amounts owing under the line of credit with Bank of Shanghai Pudong Branch are guaranteed by CleanChip Technologies LTD, a wholly-owned subsidiary of ACM Shanghai. The loan from China Merchants Bank is secured by a pledge of the property of ACM Shengwei and guaranteed by ACM Shanghai, as described above under “—Contractual Obligations.”

Effect of exchange rate changes on cash, cash equivalents and restricted cash. The value of our cash, and cash equivalents declined \$42.6 million during the first nine months of 2022. The impact of fluctuations of the RMB to U.S. dollar currency exchange rate on a significant balance of these items held in RMB-denominated accounts (Note 2) contributed to the change.

Contractual Obligations

Grant Contract for State-owned Construction Land Use Right in Shanghai City

In 2020 ACM Shanghai, through its wholly-owned subsidiary ACM Shengwei, entered into a Grant Contract for State-owned Construction Land Use Right in Shanghai City (Category of R&D Headquarters and Industrial Projects), or the Grant Agreement, with the China (Shanghai) Pilot Free Trade Zone Lin-gang Special Area Administration, or the Grantor. ACM Shengwei obtained rights to use approximately 43,000 square meters (10.6 acres) of land in the Lingang Heavy Equipment Industrial Zone of Lin-gang Special Area of China (Shanghai) Pilot Free Trade Zone, or the Land Use Right, for a period of fifty years, commencing on the date of delivery of the land in July 2020, which we refer to as the Delivery Date.

In exchange for its land use rights, ACM Shengwei paid aggregate grant fees of RMB 61.7 million (\$9.5 million), or the Grant Fees, and a performance deposit of RMB 12.3 million (\$1.9 million), which is equal to 20% of the aggregate grant fees, to secure its achievement of the following performance milestones:

- the start of construction within 6 months after the Delivery Date (60% of the performance deposit), or Construction Start Milestone;
- the completion of construction within 30 months after the Delivery Date (20% of the performance deposit), or Construction Completion Milestone; and
- the start of production within 42 months after the Delivery Date (20% of the performance deposit), or Production Start Milestone.

Upon satisfaction of a milestone, the portion of the performance deposit attributable to that milestone will be repayable to ACM Shengwei within ten business days. If the achievement of any of the above milestones is delayed or abandoned, ACM Shengwei may be subject to additional penalties and may lose its rights to both the use of the granted land and any partially completed facilities on that land.

The status of the performance milestones for the period ended September 30, 2022 is as follows:

- ACM Shengwei achieved the Construction Start Milestone and 60% of the performance deposit was refunded to ACM Shanghai in 2020.
- The Construction Completion Milestone is required to be met prior to January 9, 2023. Although this date has not yet been reached, due to COVID-19 related restrictions, ACM Shengwei has experienced delays and does not expect to meet the milestone, and plans to file a request for an extension in December 2022. We cannot guarantee the extension will be met or that ACM Shengwei will be refunded this 20% portion of the performance deposit.

Contractual penalties in the case of a delay of Construction Completion Milestone:

- o If ACM Shengwei fails to complete the construction pursuant to the date agreed under the Grant Agreement or any extended completion date approved by the Grantor, ACM Shengwei shall pay 50% of the deposit for timely completion of construction as liquidated damages;
- o If the ACM Shengwei delays the completion for more than six months beyond the date agreed under the Grant Agreement, or beyond any extended completion date approved by the Grantor, it shall pay the total deposit for timely completion of construction as liquidated damages.
- o If the delay is more than one year, the Grantor is entitled to terminate the Grant Agreement and take back the Land Use Right. In such case, the Grantor shall refund the Grant Fees for the remaining land use term after deducting the deposit agreed under the Grant Agreement and refund the deposit for timely commencement of production and relevant bank interests in full to ACM Shengwei.
- The Production Start Milestone is required to be met prior to January 9, 2024. Although this date has not yet been reached, ACM Shengwei plans to also file a request for an extension of this milestone due to COVID-related delays. We cannot guarantee the extension will be met or that ACM Shengwei will be refunded this 20% portion of the performance deposit.

Contractual penalties in the case of a delay of Production Start Milestone:

- o If ACM Shengwei fails to commence production pursuant to the date agreed under the Grant Agreement or any extended commencement date approved by the Grantor, ACM Shengwei shall pay the total deposit for timely commencement of production as liquidated damages;
- o If ACM Shengwei fails to commence production pursuant to the extended commencement of production date, the Grantor is entitled to terminate the Grant Agreement and take back the Land Use Right. In such case, the Grantor shall refund the Grant Fees for the remaining land use term after deducting the deposit agreed under the Grant Agreement to ACM Shengwei.

In addition to the milestones, covenants in the Grant Agreement require that, among other things, ACM Shengwei will be required to pay liquidated damages in the event that:

(a) it does not make a total investment (including the costs of construction, fixtures, equipment and grant fees) of at least RMB 450.0 million (\$63.4 million). ACM Shengwei shall pay the liquidated damages equal to the same proportion of the Grant Fees as the proportion of the actual shortfall amount of investment in the total agreed investment amount or the investment intensity.

(b) within six years after the Delivery Date, or prior to July 9, 2026, it does not (i) generate a minimum specified amount of annual sales of products manufactured on the granted land or (ii) pay to the PRC at least RMB 157.6 million (\$22.2 million) in annual total taxes (including value-added taxes, corporate income tax, personal income taxes, urban maintenance and construction taxes, education surcharges, stamp taxes, and vehicle and shipping taxes) as a result of operations in connection with the granted land.

If the total tax revenue of the project fails to reach but is no less than 80% of the standard agreed under the Grant Agreement, ACM Shengwei shall pay 20% of the actual shortfall amount of the tax revenue as liquidated damages. If the total tax revenue of the project fails to reach 80% of the standard agreed under the Grant Agreement within 1 month after the agreed date of reaching target production, the Grantor is entitled to terminate this Contract, take back the Land Use Right, and shall refund the Grant Fees for the remaining Land Use Term to ACM Shengwei.

If the Grant Agreement is terminated because of breach of any terms above, the Grantor shall take back the buildings, fixtures and auxiliary facilities on the land area and provide ACM Shengwei with corresponding compensation according to the residual value of the buildings, fixtures and auxiliary facilities when they are taken back. The total cumulative investment of land, buildings and construction in progress related to ACM Shengwei amounted to \$23.1 million and \$13.3 million at September 30, 2022 and December 31, 2021, respectively.

Loan and Mortgage Contract for Lingang, Shanghai Housing Units

In connection with its financing the purchase of housing units in Lingang, Shanghai, or the Property, in November 2020 ACM Shengwei entered into a Loan and Mortgage Contract, or the Loan Agreement, with China Merchants Bank Co., Ltd., Shanghai Pilot Free Trade Zone Lin-Gang Special Area Sub-branch, or the Lender, pursuant to which ACM Shengwei obtained a loan in the aggregate amount of \$19.6 million. The loan under the Loan Agreement is secured by a pledge of the Property, which ACM Shengwei's subsidiary received ownership of in January 2022, and is guaranteed by ACM Shanghai. Under the Loan Agreement, ACM Shengwei must deliver the right certificate of the Property within sixty days of the execution of the Loan Agreement or the Lender has the right to, among other things, declare a breach of contract and enforce its remedies under the Loan Agreement, which remedies include the ability to declare any borrowings outstanding, together with accrued and unpaid interest and fees, to be immediately due and payable. As of the date of this report, ACM Shengwei and its developer have been unable to obtain the required right certificate of the Property due to administrative difficulties related to the COVID 19 pandemic and, as a result, the procedures of the formal pledge registration by the Lender have not been completed. The Lender delivered an updated letter to ACM Shengwei on October 21, 2022 confirming that it is aware of the cause of the delay in ACM Shengwei's delivery of the right certificate of the Property and as of the date of this report has not taken any action to date as a result of the delay. The Lender could, however, assert at any time that the delay is a breach of contract and, among other remedies, could seek to declare the amounts owing under the Loan Agreement to be due and payable. The Shanghai Lingang Industrial Zone Public Rental Housing Construction and Operation Management Co., Ltd., or the Developer, delivered a letter to ACM Shengwei on August 4, 2022, citing a force majeure delay due to the COVID-19-related restrictions in Shanghai for the delay of the initial registration of the housing ownership, and that it expected to complete the initial registration of housing ownership by the end of August 2022. ACM Shanghai has confirmed the Developer has completed the initial registration of the housing ownership with local PRC authorities, and, as of the date of this filing, expects to receive the right certificate before December 31, 2022. See "Risks Related to International Aspects of Our Business—As the result of administrative delays in the PRC related to the COVID-19 pandemic, ACM Research's indirect subsidiary ACM Shengwei has not been able to obtain the right certificate of property in Lingang, Shanghai as required by its Loan and Mortgage Contract, and our liquidity, financial position and business would be adversely affected if the lender bank were to assert successfully that the failure to obtain the right certificate is a breach of the Loan and Mortgage Contract" in Item 1A. Risk Factors of Part II of our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022.

How We Evaluate Our Operations

We present information below with respect to four measures of financial performance:

- We define "shipments" of tools to include (a) a "repeat" delivery to a customer of a type of tool that the customer has previously accepted, for which we recognize revenue upon delivery, and (b) a "first-time" delivery of a "first tool" to a customer on an approval basis, for which we may recognize revenue in the future if contractual conditions are met, or if a purchase order is received.
- We define "adjusted EBITDA" as net income excluding interest expense (net), income tax benefit (expense), depreciation and amortization, unrealized (gain) loss on trading securities, and stock-based compensation. We define adjusted EBITDA to also exclude restructuring costs, although we have not incurred any such costs to date.
- We define "free cash flow" as net cash provided by operating activities less purchases of property and equipment (net of proceeds from disposals).
- We define "adjusted operating income (loss)" as our income (loss) from operations excluding stock-based compensation.

These financial measures are not based on any standardized methodologies prescribed by accounting principles generally accepted in the United States, or GAAP, and are not necessarily comparable to similarly titled measures presented by other companies.

We have presented shipments, adjusted EBITDA, free cash flow and adjusted operating income (loss) because they are key measures used by our management and board of directors to understand and evaluate our operating performance, to establish budgets and to develop operational goals for managing our business. We believe that these financial measures help identify underlying trends in our business that could otherwise be masked by the effect of the expenses that we exclude. In particular, we believe that the exclusion of the expenses eliminated in calculating adjusted EBITDA and adjusted operating income (loss) can provide useful measures for period-to-period comparisons of our core operating performance and that the exclusion of property and equipment purchases from operating cash flow can provide a usual means to gauge our capability to generate cash. Accordingly, we believe that these financial measures provide useful information to investors and others in understanding and evaluating our operating results, enhancing the overall understanding of our past performance and future prospects, and allowing for greater transparency with respect to key financial metrics used by our management in its financial and operational decision-making.

Shipments, adjusted EBITDA, free cash flow and adjusted operating income (loss) are not prepared in accordance with GAAP, and should not be considered in isolation of, or as an alternative to, measures prepared in accordance with GAAP.

Shipments

We consider shipments a key operating metric as it reflects the total value of products delivered to customers and prospective customers by our productive assets.

Shipments consist of two components:

- a shipment to a customer of a type of tool that the customer has previously accepted, for which we recognize revenue when the tool is delivered; and
- a shipment to a customer of a type of tool that the customer is receiving and evaluating for the first time, in each case a “first tool,” for which we may recognize revenue at a later date, subject to the customer’s acceptance of the tool upon the tool’s satisfaction of applicable contractual requirements or subject to the customer’s subsequent discretionary commitment to purchase the tool.

“First tool” shipments can be made to either an existing customer that has not previously accepted that specific type of tool in the past — for example, a delivery of a SAPS V tool to a customer that previously had received only SAPS II tools — or to a new customer that has never purchased any tool from us.

Shipments in the three and nine months ended September 30, 2022 totaled \$163 million and \$342 million, as compared to \$99 million and \$255 million for the same periods in 2021. Repeat tool shipments in the three and nine months ended September 30, 2022 totaled \$112 million and \$209 million, as compared to \$58 million and \$145 million for the same periods in 2021. First tool shipments in the three- and nine-months ended September 30, 2022 totaled \$51 million and \$133 million, as compared to \$41 million and \$110 million for the same periods in 2021.

The dollar amount attributed to a “first tool” shipment is equal to the consideration we expect to receive if any and all contractual requirements are satisfied and the customer accepts the tool, or if the customer subsequently determines in its discretion to purchase the tool. There are a number of limitations related to the use of shipments in evaluating our business, including that customers have significant, or in some cases total, discretion in determining whether to accept or purchase our tools after evaluation and their decision not to accept or purchase delivered tools is likely to result in our inability to recognize revenue from the delivered tools. “First tool” shipments reflect the value of incremental new products under evaluation delivered to our customers or prospective customers for a given period and is used as an internal key metric to reflect future potential revenue opportunity. The cumulative cost of “first tool” shipments under evaluation at customers which have not been accepted by the customer is carried at cost and reflected in finished goods inventory (see note 5 to the condensed consolidated financial statements included in this report). “First tool” shipments exclude deliveries to customers for which ACM does not have a basis to expect future revenue.

Adjusted EBITDA

There are a number of limitations related to the use of adjusted EBITDA rather than net income (loss), which is the nearest GAAP equivalent. Some of these limitations are:

- adjusted EBITDA excludes depreciation and amortization and, although these are non-cash expenses, the assets being depreciated or amortized may have to be replaced in the future;

- we exclude stock-based compensation expense from adjusted EBITDA and adjusted operating income (loss), although (a) it has been, and will continue to be for the foreseeable future, a significant recurring expense for our business and an important part of our compensation strategy and (b) if we did not pay out a portion of our compensation in the form of stock-based compensation, the cash salary expense included in operating expenses would be higher, which would affect our cash position;
- the expenses and other items that we exclude in our calculation of adjusted EBITDA may differ from the expenses and other items, if any, that other companies may exclude from adjusted EBITDA when they report their operating results;
- adjusted EBITDA does not reflect changes in, or cash requirements for, working capital needs;
- adjusted EBITDA does not reflect interest expense, or the requirements necessary to service interest or principal payments on debt;
- adjusted EBITDA does not reflect income tax expense (benefit) or the cash requirements to pay taxes;
- adjusted EBITDA does not reflect historical cash expenditures or future requirements for capital expenditures or contractual commitments;
- although depreciation and amortization charges are non-cash charges, the assets being depreciated and amortized will often have to be replaced in the future, and adjusted EBITDA does not reflect any cash requirements for such replacements; and
- adjusted EBITDA includes expense reductions and non-operating other income attributable to PRC governmental grants, which may mask the effect of underlying developments in net income, including trends in current expenses and interest expense, and free cash flow includes the PRC governmental grants, the amount and timing of which can be difficult to predict and are outside our control.

The following table reconciles net income, the most directly comparable GAAP financial measure, to adjusted EBITDA:

	Nine Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Adjusted EBITDA Data:				
Net Income	\$ 36,381	\$ 24,306	49.7%	\$ 12,075
Interest expense (income), net	(4,979)	461	-1180.0%	(5,440)
Income tax expense (benefit)	14,138	(3,021)	-568.0%	17,159
Depreciation and amortization	4,104	1,597	157.0%	2,507
Stock based compensation	5,236	3,823	37.0%	1,413
Unrealized (gain) loss on trading securities	9,562	(1,817)	-626.3%	11,379
Adjusted EBITDA	\$ 64,442	\$ 25,349	154.2%	\$ 39,093

The \$39.1 million increase in adjusted EBITDA for the nine months ended September 30, 2022 as compared to the same period in 2021 reflected a \$17.2 million impact from a change in income tax benefit (expense), a \$12.1 million increase in net income, an \$11.4 million increase in unrealized (gain) loss on trading securities, a \$1.4 million increase in stock based compensation, and a \$2.5 million increase in depreciation and amortization, partly offset by a \$5.4 million impact from an increase in interest income, net.

We do not exclude from adjusted EBITDA expense reductions and non-operating other income attributable to PRC governmental grants because we consider and incorporate the expected amounts and timing of those grants in incurring expenses and capital expenditures. If we did not receive the grants, our cash expenses therefore would be lower, and our cash position would not be affected, to the extent we have accurately anticipated the amounts of the grants. For additional information regarding our PRC grants, please see “—Key Components of Results of Operations—PRC Government Research and Development Funding.”

Free Cash Flow

The following table reconciles net cash provided by (used in) operating activities, the most directly comparable GAAP financial measure, to free cash flow:

	Nine Months Ended September 30,		% Change 2022 v 2021	Absolute Change 2022 v 2021
	2022	2021		
	<i>(in thousands)</i>			
Free Cash Flow Data:				
Net cash used in operating activities	\$ (63,530)	\$ (3,822)	1562.2%	\$ (59,708)
Purchase of property and equipment	(18,417)	(5,059)	264.0%	(13,358)
Free cash flow	\$ (81,947)	\$ (8,881)	822.7%	\$ (73,066)

The \$73.1 million decrease in free cash flow for the nine months ended September 30, 2022 as compared to the same period in 2021 reflected the factors driving net cash used in operating activities, an increase of purchases of property and equipment, and an increase of purchase of intangible assets. Consistent with our methodology for calculating adjusted EBITDA, we do not adjust free cash flow for the effects of PRC government subsidies, because we take those subsidies into account in incurring expenses and capital expenditures. We do not adjust free cash flow for the effects of time-deposits, which for our internal purposes are considered as largely similar to cash.

Adjusted Operating Income

Adjusted operating income excludes stock-based compensation from income from operations. Although stock-based compensation is an important aspect of the compensation of our employees and executives, determining the fair value of certain of the stock-based instruments we utilize involves a high degree of judgment and estimation and the expense recorded may bear little resemblance to the actual value realized upon the vesting or future exercise of the related stock-based awards. Furthermore, unlike cash compensation, the value of stock options, which is an element of our ongoing stock-based compensation expense, is determined using a complex formula that incorporates factors, such as market volatility, that are beyond our control. Management believes it is useful to exclude stock-based compensation in order to better understand the long-term performance of our core business and to facilitate comparison of our results to those of peer companies. The use of non-GAAP financial measures excluding stock-based compensation has limitations, however. If we did not pay out a portion of our compensation in the form of stock-based compensation, the cash salary expense included in operating expenses would be higher and our cash holdings would be less. The following tables reflect the exclusion of stock-based compensation, or SBC, from line items comprising income from operations:

	Nine Months Ended September 30,					
	2022			2021		
	Actual (GAAP)	SBC	Adjusted (Non- GAAP)	Actual (GAAP)	SBC	Adjusted (Non-GAAP)
	<i>(in thousands)</i>					
Revenue	\$ 280,290	\$ -	\$ 280,290	\$ 164,609	\$ -	\$ 164,609
Cost of revenue	(150,480)	(383)	(150,097)	(95,199)	(289)	(94,910)
Gross profit	129,810	(383)	130,193	69,410	(289)	69,699
Operating expenses:						
Sales and marketing	(27,494)	(1,277)	(26,217)	(17,460)	(1,400)	(16,060)
Research and development	(44,391)	(1,733)	(42,658)	(21,293)	(801)	(20,492)
General and administrative	(15,560)	(1,843)	(13,717)	(11,081)	(1,333)	(9,748)
Income (loss) from operations	42,365	(5,236)	47,601	19,576	(3,823)	23,399

Adjusted operating income for the nine months ended September 30, 2022 increased by \$24.2 million, as compared with the same period in 2021, due to a \$22.8 million increase in income from operations and a \$1.4 million increase in stock-based compensation expense.

Three Months Ended September 30,

	2022			2021		
	Actual (GAAP)	SBC	Adjusted (Non-GAAP)	Actual (GAAP)	SBC	Adjusted (Non-GAAP)
	<i>(in thousands)</i>					
Revenue	\$ 133,709	\$ -	\$ 133,709	\$ 67,013	\$ -	\$ 67,013
Cost of revenue	(67,742)	(130)	(67,612)	(37,328)	(108)	(37,220)
Gross profit	65,967	(130)	66,097	29,685	(108)	29,793
Operating expenses:						
Sales and marketing	(13,133)	(349)	(12,784)	(6,363)	(417)	(5,946)
Research and development	(15,678)	(666)	(15,012)	(7,856)	(293)	(7,563)
General and administrative	(5,520)	(748)	(4,772)	(3,671)	(460)	(3,211)
Income (loss) from operations	31,636	(1,893)	33,529	11,795	(1,278)	13,073

Adjusted operating income for the three months ended September 30, 2022 increased by \$20.5 million, as compared with the same period in 2021, due to a \$19.8 million increase in income from operations, offset by a \$0.6 million increase in stock-based compensation expense.

Item 3. Quantitative and Qualitative Disclosures About Market Risks

Our market risks and the ways we manage them are summarized in the section captioned “Part II, Item 7A. Quantitative and Qualitative Disclosures About Market Risk” in our Annual Report. There have been no material changes in the first nine months of 2022 to our market risks or to our management of such risks.

Item 4. Controls and Procedures
Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our company’s disclosure controls and procedures pursuant to Rule 13a-15 under the Securities Exchange Act of 1934, or the Exchange Act, as of September 30, 2022. The evaluation included certain internal control areas in which we have made and are continuing to make changes to improve and enhance controls. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs. The effectiveness of the disclosure controls and procedures is also necessarily limited by the staff and other resources available to management and the geographic diversity of our company’s operations. As a result of the COVID-19 pandemic, beginning in 2020 we have faced additional challenges in operating and monitoring our disclosure controls and procedures as a result of employees working remotely and management travel being limited. In addition, we face potential heightened cybersecurity risks as our level of dependence on our IT networks and related systems increases, stemming from employees working remotely, and the number of malware campaigns and phishing attacks preying on the uncertainties surrounding COVID-19 increases.

Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of September 30, 2022, our company’s disclosure controls and procedures were effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting and Remediation Efforts

There were no changes in our internal control over financial reporting during the nine months ended September 30, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. We will continue to review and document our disclosure controls and procedures, including our internal control over financial reporting and may from time to time make changes to enhance their effectiveness and ensure that our systems evolve with our business.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

From time to time, we may become involved in other legal proceedings or may be subject to claims arising in the ordinary course of our business. Although the results of these proceedings and claims cannot be predicted with certainty, we currently believe that the final outcome of these ordinary course matters will not have a material adverse effect on our business, operating results, financial condition or cash flows. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 1 A. Risk Factors

Except as set forth below, there were no material changes to the risk factors discussed in Item 1A. “Risk Factors” of Part I in our Annual Report and in Item 1A. “Risk Factors” of Part II in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022. In addition to the other information set forth in this report, you should carefully consider those risk factors, which could materially affect our business, financial condition and future operating results. Those risk factors are not the only risks facing our company. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may have a material adverse effect on our business, financial condition and operating results.

Risks Related to International Aspects of Our Business

We could be adversely affected if we are unable to comply with recent and proposed legislation and regulations regarding improved access to audit and other information and audit inspections of accounting firms, including registered public accounting firms, such as our audit firm since our initial public offering in 2017, operating in the PRC.

We are one of the companies named in the SEC’s “Conclusive list of issuers identified under the HFCAA.” BDO China had been our independent registered public accounting firm in recent years, including for the year ended December 31, 2021, and is not inspected by the PCAOB.

The HFCA Act, which became law in December 2020, includes requirements for the SEC to identify issuers whose audit work is performed by auditors that the PCAOB is unable to inspect or investigate completely because of a restriction imposed by a non-U.S. authority in the auditor’s local jurisdiction. The HFCA Act also requires that, to the extent that the PCAOB has been unable to inspect an issuer’s auditor for three consecutive years since 2021, the SEC shall prohibit the issuer’s securities registered in the United States from being traded on any national securities exchange or over-the-counter market in the United States.

- On March 24, 2021, the SEC adopted interim final amendments to implement congressionally mandated submission and disclosure required of the HFCA Act, and on December 2, 2021, the SEC adopted final amendments to finalize rules implementing the submission and disclosures in the HFCA Act. These final amendments apply to registrants that the SEC identifies as having filed an Annual Report on Form 10-K (or certain other forms) with an audit report issued by a registered public accounting firm that is located in a foreign jurisdiction and that the PCAOB has determined it is unable to inspect or investigate completely because of a position taken by an authority in that jurisdiction. Any such identified registrant will be required to submit documentation to the SEC establishing that it is not owned or controlled by a governmental entity in that foreign jurisdiction, and will also require disclosure in the registrant’s annual report regarding the audit arrangements of, and governmental influence on, such a registrant.
- Furthermore, on June 22, 2021, the U.S. Senate passed the Accelerating Holding Foreign Companies Accountable Act, which, if enacted, would amend the HFCA Act to require the SEC to prohibit an issuer’s securities from trading on any national securities exchange or over-the-counter market in the United States if the PCAOB has been unable to inspect an issuer’s auditor for two, rather than three, consecutive years. On September 22, 2021, the PCAOB adopted a final rule implementing the HFCA Act, which provides a framework for the PCAOB to use when determining, as contemplated under the HFCA Act, whether the PCAOB is unable to inspect or investigate completely registered public accounting firms located in a foreign jurisdiction because of a position taken by one or more authorities in that jurisdiction.
- On December 16, 2021, the PCAOB designated China and Hong Kong as jurisdictions where the PCAOB is not allowed to conduct full and complete audit inspections and has identified firms registered in such jurisdictions, including BDO China. Pursuant to each annual determination by the PCAOB, the SEC will, on an annual basis, identify issuers that have used non-inspected audit firms.
- On March 8, 2022, the SEC published its first “Provisional list of issuers identified under the HFCAA.” Our company was identified on the SEC’s provisional list after we filed the Annual Report, which included an audit report issued by BDO China. According to current SEC guidelines, a trading prohibition on our Class A common stock could be invoked as early as 2024.

- On March 30, 2022, our company was transferred to the SEC’s “Conclusive list of issuers identified under the HFCAA.”
- On August 26, 2022, the PCAOB signed a Statement of Protocol, or SOP, Agreement with the CSRC and China’s Ministry of Finance. The SOP, together with two protocol agreements governing inspections and investigation, establishes a specific, accountable framework to make possible complete inspections and investigations by the PCAOB of audit firms based in China and Hong Kong, as required under U.S. law. Pursuant to the fact sheet with respect to the SOP disclosed by the SEC, the PCAOB has sole discretion to select the audit firms, engagements and potential violations that it inspects or investigates and has the ability to transfer information to the SEC in the normal course. PCAOB inspectors and investigators can view all audit documentation without redaction, and the PCAOB can retain any audit information it reviews as needed to support the findings of its inspections and investigations. In addition, the SOP allows the PCAOB to interview and take testimony of personnel associated with the audits that the PCAOB inspects or investigates. However, uncertainties still exist as to whether and how the SOP will be implemented and whether the PCAOB can make a determination that it is able to inspect and investigate completely audit firms based in mainland China and Hong Kong. When the PCAOB reassesses its determinations by the end of 2022, it could determine that it is still unable to inspect and investigate completely audit firms based in mainland China and Hong Kong.

Per current regulations, if ACM Research were to appear three consecutive times on the “Conclusive list of issuers identified under the HFCAA”, which could occur should our independent auditor that signs our 2022 and 2023 annual report be located in a jurisdiction that does not allow for PCAOB inspections, the value of our securities may significantly decline or become worthless, and our securities may eventually be delisted. If enacted, the Accelerating Holding Foreign Companies Accountable Act could reduce the threshold to two consecutive appearances on the “Conclusive List of issuers identified under the HFCAA”, and thus could trigger a de-listing should our independent auditor that signs our 2022 annual report be located in a jurisdiction that does not allow for PCAOB inspections.

Our independent registered public accounting firm for the year ended December 31, 2022 is Armanino LLP, which is registered with the PCAOB. On June 30, 2022, stockholders of ACM Research ratified the appointment of Armanino LLP as our independent auditor for the fiscal year ending December 31, 2022. Armanino LLP is neither headquartered in the PRC or Hong Kong nor is it subject to the determinations announced by the PCAOB.

It remains unclear what further actions the SEC, the PCAOB or Nasdaq may take to address these issues and what impact those actions will have on U.S. companies, such as ours, that have significant operations in the PRC and have securities listed on a U.S. stock exchange. Any such actions could materially affect our operations and stock price, including by resulting in our being de-listed from Nasdaq or being required to engage a new audit firm, which would require significant expense and management time.

If any PRC central government authority were to determine that existing PRC laws or regulations require that ACM Shanghai obtain the authority’s permission or approval to continue the listing of ACM Research’s Class A common stock in the United States or if those existing PRC laws and regulations, or interpretations thereof, were to change to require such permission or approval, or if we inadvertently conclude that permissions or approvals are not required, ACM Shanghai may be unable to obtain the required permission or approval or may only be able to obtain such permission or approval on terms and conditions that impose material new restrictions and limitations on operation of ACM Shanghai, either of which could have a material adverse effect on our business, financial condition, results of operations, reputation and prospects and on the trading price of ACM Research Class A common stock, which could decline in value or become worthless.

PRC central government authorities have taken steps to preclude, or significantly discourage, certain PRC companies from listing on U.S. and other exchanges outside the PRC. Investments activities in the PRC by non-PRC investors are principally governed by the Encouraged Industries Catalog for Foreign Investment (2020 version) and the Special Administrative Measures for Foreign Investment Access (Negative List 2021), both of which were promulgated by the PRC’s Ministry of Commerce, or MOFCOM, and National Development and Reform Commission. These regulations set forth the industries in which foreign investments are encouraged, restricted and prohibited.

Industries that are not listed in any of these three categories are generally open to foreign investment unless otherwise specifically restricted by other PRC rules and regulations. We believe that our operations do not fall within any industry that is restricted or prohibited under these regulations and that the regulations therefore do not apply to us.

PRC-based companies that seek to list their shares in the United States but are subject to PRC restrictions on investments by non-PRC investors sometimes use a special purpose vehicle known as a variable interest entity, or VIE, created in an off-shore jurisdiction such as the Cayman Islands. In these structures, a VIE enters into a series of contractual arrangements with the PRC-based operating company and its PRC-based shareholders that afford those shareholders, rather than the shareholders of the VIE, effective control over the finances and operations of the operating company. The VIE, effectively a shell company, issues shares that are listed for trading on a U.S. exchange, but the enterprise is controlled by the legacy PRC-based shareholders and is subject to PRC laws and regulations. ACM Research is not a VIE or other special purpose, or shell, company, and its relationship with ACM Shanghai does not involve the types of contractual arrangements existing between a VIE and a PRC-based operating company. ACM Research is a Delaware corporation founded in California in 1998 that formed ACM Shanghai to conduct business operations in the PRC. ACM Research controls the operations of ACM Shanghai through its direct ownership of ACM Shanghai shares, and it also conducts sales and marketing activities focused on sales of ACM Shanghai products in North America, Europe and certain regions in Asia outside mainland China.

We do not believe that our corporate structure or any other matters relating to our business operations currently require that ACM Shanghai obtain any permissions or approvals from the China Securities Regulatory Commission, or CSRC, or any other PRC central government authority in connection with ACM's listing, or offering for sale in the future, shares of our Class A common stock in the United States. We, including ACM Shanghai, therefore have never solicited any permission or approval from any PRC central government authority in connection with ACM Research's seeking and maintaining the listing of our Class A common stock in the United States. In the event that we inadvertently conclude that permissions or approvals are not required, or either the CSRC or another PRC central government authority were to determine that existing PRC laws or regulations require that ACM Shanghai obtain the authority's permission or approval to continue ACM Research's listing of Class A common stock in the United States or if those existing PRC laws and regulations, or interpretations thereof, were to change to require such permission or approval, ACM Shanghai could be unable to obtain any such permission or approval or could be able to obtain such permission or approval only on terms and conditions that impose material new operating or other restrictions and limitations on ACM Shanghai. In such circumstances, it would materially and adversely affect the value of our Class A common stock, which may decline in value or become worthless. In addition, ACM Shanghai could face sanctions by the CSRC or other PRC central government authorities or pressure from the PRC government in various business matters for failure to obtain such permission or approval. Such potential sanctions or pressure may include fines and penalties on ACM Shanghai's operations in the PRC, limitations on its operating privileges in the PRC, delays in or restrictions on the transfer of proceeds from a public offering of ACM Research securities in the United States to ACM Shanghai, restrictions on or prohibition of the payments or remittance of dividends by ACM Shanghai to ACM Research, or other actions that could have a material and adverse effect on our business, financial condition, results of operations, reputation and prospects, as well as the trading price of ACM Research Class A common stock, which could decline in value or become worthless.

PRC central government authorities may intervene in, or influence, ACM Shanghai's PRC-based operations at any time, and those authorities' rules and regulations in the PRC can change quickly with little or no advance notice.

The business of ACM Shanghai is subject to complex laws and regulations in the PRC that can change quickly with little or no advance notice. To date, beyond the COVID-19-related restrictions in 2022, we have not experienced such intervention or influence by PRC central government authorities or a change in those authorities' rules and regulations that have had a material impact of ACM Shanghai or ACM Research. We cannot assure you, however, that future changes in PRC laws and regulations will not materially and adversely affect our PRC-based operations. For example:

- **Intellectual Property.** Our commercial success depends in part on our ability to obtain and maintain patent and trade secret protection for our intellectual property, including our SAPS, TEBO, Tahoe, ECP, furnace and other technologies and the design of our Ultra C equipment. See “Risks Related to Our Intellectual Property and Data Security”³⁴Our success depends on our ability to protect our intellectual property, including our SAPS, TEBO, Tahoe, ECP, furnace and other technologies.” in Item 1A, “Risk Factors” of Part I of our Annual Report. The significant majority of our intellectual property has been developed in the PRC and is owned by ACM Shanghai. Implementation and enforcement of intellectual property-related laws in the PRC has historically been lacking due primarily to ambiguities in PRC intellectual property law. See “Risks Related to Our Intellectual Property and Data Security”³⁴We may not be able to protect our intellectual property rights throughout the world, including the PRC, which could materially, negatively affect our business.” in Item 1A, “Risk Factors” of Part I of our Annual Report. In the event PRC central government authorities were to significantly revise or revamp the current scope and structure of intellectual property protection in the PRC, our ability to protect and enforce our intellectual property rights for our key proprietary technologies may be adversely impacted and competitors may be able to match our technologies and tools in order to compete with us.
- **Title Defect in Leased Premises.** We conduct research and development, service support operations, and a portion of our manufacturing at ACM Shanghai’s headquarters located in the Zhangjiang Hi Tech Park in Shanghai, which ACM Shanghai leases from Zhangjiang Group. Zhangjiang Group has not obtained a certificate of property title for the premises, although it has represented to ACM Shanghai that it has the right to rent the premises to ACM Shanghai. If any adjustment in local regional overall planning of Shanghai, or any other reason, results in the demolition of such premises, the premises could not continue to be leased to ACM Shanghai and the day-to-day production and operation of ACM Shanghai would be materially and adversely affected. See Item 2, “Properties” of Part I of our Annual Report.
- **COVID-19 Pandemic.** We conduct substantially all of our product development, manufacturing, support and services in the PRC, and those activities have been directly impacted by COVID-19 and related restrictions on transportation and public appearances, including implementation by PRC government authorities of “spot” and full-city quarantines in the city of Shanghai, where substantially all of our operations are located. Furthermore, a number of our key customers have substantial operations based in operations areas of the PRC, including in the City of Shanghai, which required us to defer, in the first quarter of 2022, shipments of finished products to those customers. Protective measures taken by PRC government authorities in upcoming months could result in closures or reductions of PRC operations or production, whether of ACM Shanghai or of some of its key customers, or other business interruptions, any of which could materially adversely affect our operations. See “Substantially all of our operations, as well as significant operations of a number of our key customers, are located in areas of the PRC impacted by the COVID-19 pandemic, and our operations have been, and may continue to be, adversely affected by the effects of PRC restrictions imposed as the result of COVID-19.” in Item 1A, “Risk Factors” of Part II of this report.
- **Data Security.** The Standing Committee of the National People’s Congress, or the Standing Committee, has promulgated the Cyber Security Law, which imposes requirements on entities who build and operate the PRC’s internet architecture or provide services in the PRC over the internet, and the Data Security Law, which imposes data security and privacy obligations on entities and individuals carrying out data activities. The Data Security Law also provides for a national security review procedure for data activities that may affect national security and imposes export restrictions on certain data and information. ACM Shanghai is not subject to the existing restrictions imposed by the Cyber Security Law or the Data Security Law, in part because its business operations do not involve the collection, processing or use of data or information involving personal privacy or private information of customers. In addition, ACM Shanghai is subject to oversight by the Cyberspace Administration of China, or the CAC, regarding data security. ACM Shanghai does not collect or maintain personal information except for routine personal information necessary to process payroll payments and other benefits and emergency contact information, and as a result, ACM Shanghai is not currently subject to significant restrictions or limitations in addressing and managing data security issues and complying with CAC regulations. To date, ACM Shanghai has not been involved in any investigations on cybersecurity review initiated by the CAC or any related PRC central government authority and has not received any inquiry, notice, warning, or sanction in such respect. However, cybersecurity is increasingly a focus of the PRC central government. If the CAC or other PRC central government authorities should in the future require ACM Shanghai to comply with these or additional, or more restrictive, PRC cybersecurity regulations, it could require ACM Shanghai to make changes to its operations, and any failure to satisfy or delay in meeting such requirements may subject ACM Shanghai to restrictions and penalties imposed by the CAC or other PRC regulatory authorities, which may include regulatory actions, fines and penalties on our operations in the PRC, which could materially harm our business, financial condition, results of operations, reputation and prospects.

- **Anti-Monopoly.** A number of PRC laws and regulations have established procedures and requirements that could make merger and acquisition activities in China by foreign investors more time consuming and complex. These laws and regulations, which include the Anti-Monopoly Law and the Rules of the Ministry of Commerce on Implementation of Security Review System of Mergers and Acquisitions of Domestic Enterprises by Foreign Investors, impose requirements that in some instances that MOFCOM be notified in advance of, for example, any change-of-control transaction in which a foreign investor takes control of a PRC domestic enterprise. In addition, such Rules specify that mergers and acquisitions by foreign investors that raise “national defense and security” concerns and mergers and acquisitions through which foreign investors may acquire de facto control over domestic enterprises that raise “national security” concerns are subject to strict review by MOFCOM. In February 2021, the Anti-Monopoly Committee of the State Council published the Anti-Monopoly Guidelines for the Internet Platform Economy Sector, which stipulate that any concentration of undertakings involving VIEs is subject to anti-monopoly review. Those Guidelines provide more stringent rules for Internet platform operators, including regulations on the use of data and algorithms, technology and platform to commit abusive acts. The Measures for the Security Review for Foreign Investment, which was promulgated jointly by National Development and Reform Commission and MOFCOM effective January 18, 2021, and the Standing Committee on Amending the Anti-Monopoly Law of the People’s Republic of China, which was promulgated by the Standing Committee effective August 1, 2022, delineated provisions concerning the security review procedures on foreign investment, including the types of investments subject to review and the scopes and procedures of the review. ACM Shanghai does not have the concentration of business operators stipulated in the Anti-Monopoly Law, and our operations and activities to date have not otherwise subjected us to restrictive provisions or limitations set forth in applicable PRC laws and regulations govern merger and acquisition activities. Among other things, ACM Shanghai’s business operations do not constitute identified “national defense and security” concerns associated with the arms industry, any industry ancillary to the arms industry, or any other field related to national defense security. We cannot assure you, however, that future changes in PRC laws and regulations governing mergers and acquisitions, including activities in the PRC by foreign investors, will not extend or otherwise modify existing requirements, which could materially and adversely affect our PRC-based operations or our ability to expand by investments or acquisitions.
- **Permits.** In the ordinary course of business, ACM Shanghai has obtained all of the permits and licenses it believes are necessary for it to operate in the PRC. ACM Shanghai may be adversely affected, however, by the complexity, uncertainties and changes in PRC laws and regulations applicable to, or otherwise affecting, the semiconductor equipment industry and related businesses, and any lack of requisite approvals, licenses or permits applicable to ACM Shanghai’s business may have a material adverse effect on its business and results of operations.
- **Trade Policies.** Since 2018, general trade tensions between the United States and the PRC have escalated. See “Regulatory Risks —*Changes in government trade policies could limit the demand for our tools and increase the cost of our tools.*” in Item 1A, “Risk Factors” of Part I of our Annual Report. The imposition of tariffs by the U.S. and PRC governments and the surrounding economic uncertainty may negatively impact the semiconductor industry, including reducing the demand of fabricators for capital equipment such as our tools. Further changes in trade policy, tariffs, additional taxes, restrictions on exports or other trade barriers, or restrictions on supplies, equipment, and raw materials including rare earth minerals, may limit the ability of our customers to manufacture or sell semiconductors or to make the manufacture or sale of semiconductors more expensive and less profitable, which could lead those customers to fabricate fewer semiconductors and to invest less in capital equipment such as our tools. In addition, if the PRC were to impose additional tariffs on raw materials, subsystems or other supplies that we source from the United States, our cost for those supplies would increase. As a result of any of the foregoing events, the imposition or new or additional tariffs may limit our ability to manufacture tools, increase our selling and/or manufacturing costs, decrease margins, or inhibit our ability to sell tools or to purchase necessary equipment and supplies, which could have a material adverse effect on our business, results of operations, or financial conditions.

Moreover, by imposing industrial policies and other economic measures, such as control of foreign exchange, taxation and foreign investment, the PRC central government exerts considerable direct and indirect influence on the development of the PRC economy. Other political, economic and social factors may also lead to further legal and regulatory changes and reforms, which may adversely affect our operations and business development.

Regulatory Risks

Our ability to sell our tools to Chinese customers may be restricted by regulatory actions.

ACM Shanghai utilizes certain items subject to export controls under the U.S. Export Administration Regulations (EAR) in manufacturing its products. The EAR applies to exports of commodities, software and technology from the U.S. (including for use in manufacturing products outside the U.S.), as well as to certain products manufactured outside the U.S. that incorporate, or are based on, designated U.S. content, software or technology. The Bureau of Industry and Security of the U.S. Department of Commerce (BIS), which administers the EAR, recently imposed and may continue to impose additional restrictions under the EAR on certain exports to the PRC, including through licensing requirements with a presumption of denial. These types of restrictions may impact the operations of ACM Shanghai.

The restrictions include the designation of additional PRC companies on certain restricted party lists under the EAR, such as the Entity List and the Unverified List. These designations result in the imposition of special requirements in connection with the supply of products to such companies. In addition, more recently, BIS imposed a series of new restrictions on exports of designated products and exports for designated uses and users in connection with the supercomputer, artificial intelligence, integrated circuit (IC) and semiconductor manufacturing sectors in the PRC. These new restrictions may have some impacts on the procurement by ACM Shanghai of certain items from the U.S. for use in manufacturing its products and the ongoing feasibility of supplying ACM Shanghai products to certain end users and for certain end uses in the PRC.

For example, BIS has added a number of PRC entities to the Entity List under the EAR. Any items subject to the EAR, including certain foreign produced products with specified U.S. content, now require a BIS export license for supply to the newly listed PRC entities. Along with other companies, in December 2020, SMIC, one of the largest chip manufacturers in the PRC, was added to the Entity List. Challenges faced by SMIC and its key suppliers as a result of the listing could indirectly impact SMIC's demand for, or ACM Shanghai's ability to supply, ACM Shanghai products. As part of the recent October 2022 actions, Yangtze Memory Technologies Co., Ltd. (YMTC), a leading PRC memory chip company was added to the Unverified List of the EAR alongside a number of other Chinese entities. The Unverified List identifies parties for whom BIS has been unable to confirm their bona fides (i.e., legitimacy and reliability about the end-use and end-user of items subject to the EAR). Entities listed on the Unverified List are ineligible to receive items subject to the EAR by means of a license exception if a U.S. export license is required. Challenges faced by YMTC and its key suppliers as a result of the listing could indirectly impact YMTC's demand for, or ACM Shanghai's ability to supply, ACM Shanghai products.

Also in October 2022, BIS announced new rules that significantly expand U.S. export controls as applied to advanced IC products, related manufacturing equipment and technology, and supercomputers, where the destination or ultimate end user is based in China. In the case of semiconductor manufacturing equipment, the new rules require an export license with a presumption of denial for the export from the U.S. to the PRC of additional types of semiconductor manufacturing equipment and of items for use in manufacturing designated types of semiconductor manufacturing equipment in the PRC, as well as for the supply of semiconductor manufacturing equipment to certain IC manufacturing and development facilities in the PRC. In addition, U.S. persons are effectively barred from engaging in certain activities related to the development and production of certain semiconductors in China, even if no items subject to the EAR are involved.

We are evaluating the potential direct impact of the rules, including any necessary modifications to our business policies and practices in China, and any expected changes in the capital spending plans of our customer base. We cannot be certain what additional actions the U.S. government may take with respect to PRC entities, and whether such actions will impact our relationships with our PRC-based customers, including by virtue of changes to the Entity List or Unverified List, other export regulations, tariffs or other trade restrictions. We also cannot know whether the PRC government may take any actions in response to the various U.S. government actions that may adversely affect our ability to do business with our PRC-based customers. Even in the absence of further restrictions, tariffs or trade actions imposed by the U.S. or PRC governments, our PRC-based customers could take actions to reduce dependence on the supply of products subject to potential U.S. trade regulations (including potentially our tools). This could have a material adverse effect on our operating results. We are unable to predict the duration of the restrictions imposed by the U.S. government or the effects of any future governmental actions that may impact our relationships with our PRC-based customers, any of which could have a long-term adverse effect on our business, operating results and financial condition.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds***Recent Sales of Unregistered Equity Securities***

In the three months ended September 30, 2022, ACM Research issued, pursuant to the exercise of stock options at a per share exercise prices ranging from \$0.25 to \$0.50 per share, an aggregate of 131,884 shares of Class A common stock that were not registered under the Securities Act of 1933. We believe the offer and sale of those shares were exempt from registration under the Securities Act of 1933 by virtue of Section 4(a)(2) thereof (or Regulation D promulgated thereunder) because they did not involve a public offering. The recipients of the shares acquired the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were recorded with respect to the shares. The recipients of the shares were accredited investors under Rule 501 of Regulation D.

Sale Date	Exercised Shares (Net)
July 1, 2022	39,407
August 4, 2022	19,421
August 8, 2022	36,519
August 15, 2022	36,537
Total	131,884

Item 6. Exhibits

The following exhibits are filed as part of this report:

Exhibit No.	Description
31.01	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.02	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.01	Certification of Principal Executive Officer and Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	Inline XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in exhibit 101)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: November 8, 2022

ACM RESEARCH, INC.

By: /s/ Mark McKechnie

Mark McKechnie

Chief Financial Officer, Executive Vice President and
Treasurer

(Principal Financial Officer)

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, David H. Wang, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of ACM Research, Inc.
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this quarterly report.
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report.
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)), for the registrant and have:
 - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 8, 2022

/s/ David H. Wang

David H. Wang
Chief Executive Officer and President
(Principal Executive Officer)

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Mark McKechnie, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of ACM Research, Inc.
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this quarterly report.
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report.
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)), for the registrant and have:
 - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 8, 2022

/s/ Mark McKechnie

Mark McKechnie

Chief Financial Officer, Executive Vice President and Treasurer
(Principal Financial Officer)

**CERTIFICATION PURSUANT TO 18 U.S.C. 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report on Form 10-Q of ACM Research, Inc. for the quarterly period ended September 30, 2022, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to his or her knowledge on the date hereof:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of ACM Research, Inc. for the period presented therein.

Date: November 8, 2022

/s/ David H. Wang

David H. Wang

Chief Executive Officer and President

(Principal Executive Officer)

Date: November 8, 2022

/s/ Mark McKechnie

Mark McKechnie

Chief Financial Officer, Executive Vice President and Treasurer

(Principal Financial Officer)

The foregoing certification is being furnished solely pursuant to 18 U.S.C. § 1350 and is not being filed as part of the Report or as a separate disclosure document.
