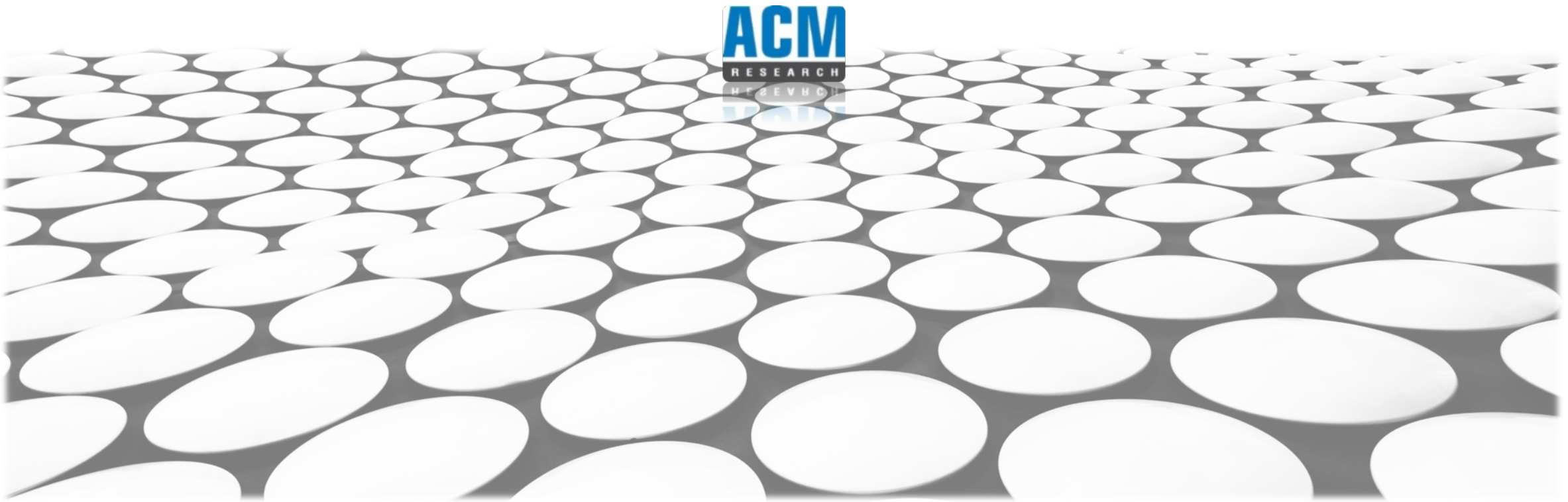
ADVANCED PRODUCTION TOOLS FOR LEADING EDGE IC FABS

Advanced wafer cleaning technologies



August 2023

DISCLOSURES

Forward-Looking Statements. Certain statements contained in this presentation are not historical facts and may be forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "plans," "expects," "believes," "anticipates," "designed," and similar words are intended to identify forward-looking statements. Forward-looking statements are based on ACM Research management's current expectations and beliefs, and involve a number of risks and uncertainties that are difficult to predict and that could cause actual results to differ materially from those stated or implied by the forward-looking statements. A description of certain of these risks, uncertainties and other matters can be found in filings ACM makes with the U.S. Securities and Exchange Commission, all of which are available at www.sec.gov. Because forward-looking statements involve risks and uncertainties, actual results and events may differ materially from results and events currently expected by ACM. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. ACM undertakes no obligation to publicly update these forward-looking statements to reflect events or circumstances that occur after the date hereof or to reflect any change in its expectations with regard to these forward-looking statements or the occurrence of unanticipated events.

Market Data. Information presented below concerning ACM Research's total addressable market presents a forecast based on information provided by Gartner, Inc. in its report "Forecast: Semiconductor Wafer Fab Equipment, Worldwide, 4Q22 Update" (December 2022). You are cautioned not to rely on or give undue weight to this information. 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 presentation), and the opinions expressed in the Gartner report are subject to change without notice. While ACM is not aware of any misstatements regarding the information provided in the Gartner report, it has not independently verified the accuracy or completeness of that information, which involves numerous assumptions and is subject to risks and uncertainties, as well as change based on various factors, that could cause results to differ materially from the forecast presented. The industry in which ACM operates is subject to a high degree of uncertainty and risk due to variety of factors, including those described in ACM public filings with the SEC, as described above.

Note Regarding Presentation of Non-GAAP Financial Measures. Information presented below under "Q2 2023 Summary" and "Q2 2023 Financial Results" includes certain "non-GAAP financial measures" as defined in Regulation G under the Securities Exchange Act of 1934, including non-GAAP gross margin, non-GAAP operating income, non-GAAP basic and diluted EPS, and non-GAAP gross profit. These supplemental measures exclude the impact of stock-based compensation, non-cash change in fair value of financial liabilities and unrealized gain on trading securities, which ACM Research does not believe are indicative of its core operating results. A reconciliation of each non-GAAP financial measure to the most directly comparable GAAP financial measure is included below under "Q2 2023 GAAP to Non-GAAP Reconciliation." ACM Research believes these non-GAAP financial measures are useful to investors in assessing its operating performance. ACM Research uses these financial measures internally to evaluate its operating performance and for planning and forecasting of future periods. Financial analysts may focus on and publish both historical results and future projections based on the non-GAAP financial measures. ACM also believes it is in the best interests of investors for ACM Research to provide this non-GAAP information.

While ACM believes these non-GAAP financial measures provide useful supplemental information to investors, there are limitations associated with the use of these non-GAAP financial measures. These non-GAAP financial measures may not be reported by competitors, and they may not be directly comparable to similarly titled measures of other companies due to differences in calculation methodologies. The non-GAAP financial measures are not an alternative to GAAP information and are not meant to be considered in isolation or as a substitute for comparable GAAP financial measures. They should be used only as a supplement to GAAP information and should be considered only in conjunction with ACM's consolidated financial statements prepared in accordance with GAAP.

Company References. As used in this presentation, "ACM Shanghai" refers to ACM Research (Shanghai), Inc., "ACM South Korea" refers to Hanguk ACM CO., LTD, and "ACM Research" refers to ACM Research, Inc. and its subsidiaries, including ACM Shanghai and ACM South Korea.

ACM Research at a Glance

- **Best-in-class multi-product semiconductor capital equipment supplier** to leading global semiconductor manufacturers
- **Differentiated technology** improves customer production processes with better yields and reduced chemical consumption
- **More than 448 patents** issued in the U.S., China, Japan, Singapore, South Korea and Taiwan as of 12/31/22
- **State-of-the-art production facilities** in Chuansha & ZhangJiang, Shanghai; construction in process for new R&D and production center in Lingang, Shanghai
- **Headquartered in Fremont, CA** with more than 1,200 employees globally

Cleaning

Flagship (SAPS, TEBO, Tahoe)

Semi-Critical

ECP, Furnace & Other

Ultra ECP ap

Ultra ECP map

Ultra Fn Furnace

NEW Products: Track and PECVD

Track

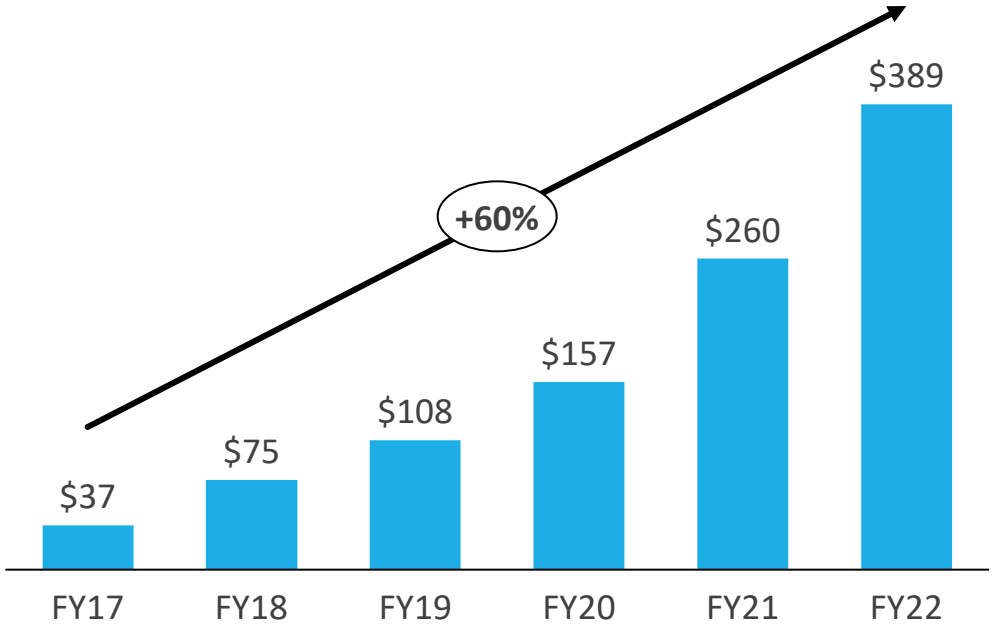
PECVD

Advanced Packaging & Other

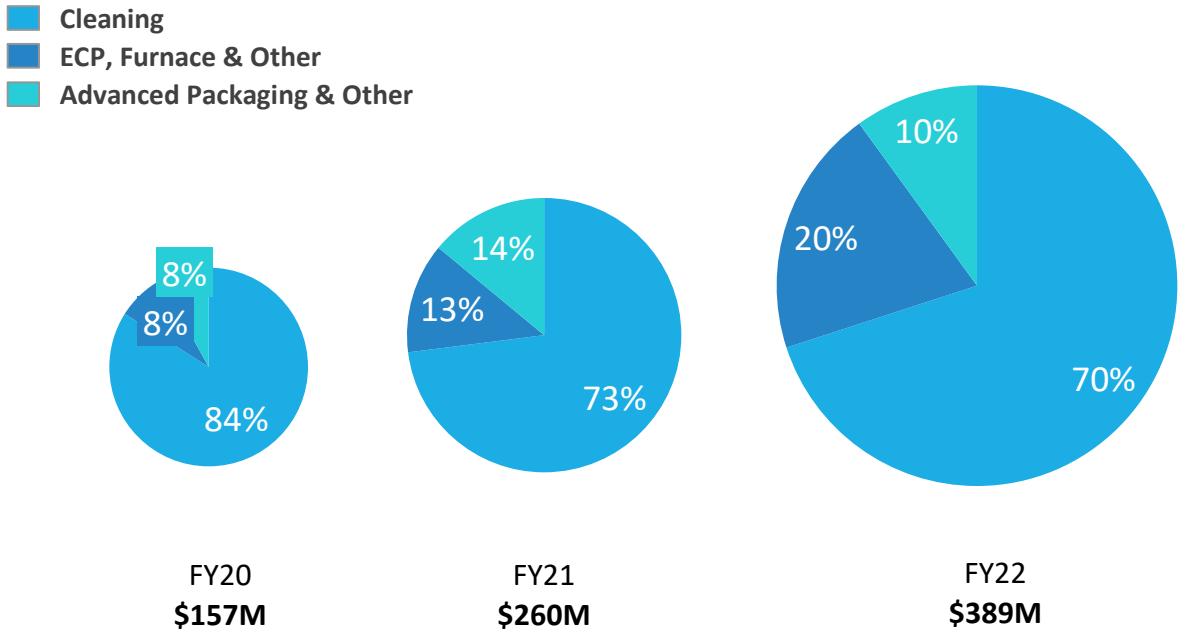
Scrubbers, coaters, developer tools, plating tools, wet stripping, wet etching and stress-free polishing systems, and other parts and services

Financial Highlights

Total Revenue



Product Mix



1. Cleaning: Single wafer cleaning, Tahoe and semi-critical cleaning equipment
2. ECP, Furnace & Other: ECP (front-end and packaging), furnace and other technologies
3. Advanced Packaging & Other: Advanced Packaging (excluding ECP), services & spares

ACM Research achieved 60% revenue CAGR over past 5 years and has diversified its product mix into new product categories

History of Innovation and Customer Design Wins

1998 — Dr. Wang establishes ACM Research in Silicon Valley

2006 — Establishes ACM Research (Shanghai), Inc.

2013 — SK Hynix places first major production order for SAPs

2015 — YMTC, SMIC, and HLMC place SAPS orders

2017 — Ships TEBO demo unit to HLMC

2017 — Completes U.S. IPO on NASDAQ - Nov, 2017

2018 — Opens 2nd production facility in Chuansha, China, in Sep, 2018

2018 — Announces 1st P.O. for Tahoe tool

2019 — Ships Tahoe & ECP eval tools to new DRAM customer

2019 — U.S. follow on capital raise Aug, 2019

2020 — Launches SFP, furnace and semi-critical cleaning products

2020 — R&D and production facility in Lingang begins construction

2021 — 4 evaluation agreements with major industry players, including a major U.S. semiconductor manufacturer

2021 — ACM Shanghai STAR Market IPO Nov, 2021

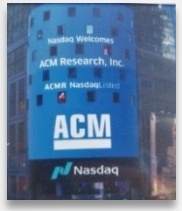
2022 — Launches Ultra Pmax™ PECVD and Ultra Track Coater/Developer ArF products

2022 — First evaluation agreement with a major European semiconductor manufacturer

Global Semiconductor Capital Equipment Supplier

ACM Research Headquarters

NASDAQ: ACMR



ACM Shanghai

R&D and Manufacturing Center

ACM South Korea

Research Institute &
Manufacturing Center

Shanghai R&D Center (Zhangjiang)

Shanghai Asia-Pacific Manufacturing Center >200,000 ft² (Chuansha)

Planned >1.4 million ft² (Lingang)

Tier 1 Customer Base

Front-End Customers

- One of the leading advanced foundries in China
- ACM Research 2022 Revenue %: 18% (primarily Foundry / Logic)

- Mainland China's largest foundry
- Tier-one customers include Qualcomm, Broadcom and Texas Instruments
- 7 strategically located fabs in China
- Building 3 12-inch fabs in China [1]
- SMIC Shenzhen entered into production by the end of 2022 [1]
- ACM Research 2022 Revenue %: 15%

- Major new entrant into NAND flash and DRAM industry
- Innovative Xtacking 2.0 unleashes potential of 3D NAND [2]
- ACM Research 2022 Revenue %: 10% (primarily 3D NAND)

- New China-based entrant to DRAM industry
- ACM Research 2022 Revenue %: <10%

- Global market leader in memory (DRAM & NAND) semiconductor products
- ACM Research's first major customer
- ACM Research 2022 Revenue %: <10% (primarily DRAM)

Tier 2 and 3 China-based IC Manufacturers

- Tier 2 includes Hangzhou Silan and 4 China-based customers
- Ordered a range of semi-critical tools including the scrubber, wet etch, and backside wafer etching tool, auto wet bench, SAPS-II cleaning tool and Cu interconnect ECP map tool.
- Tier 3 includes a handful of companies investing in new capacity in IoT, EV, AI

Back-End Customers

- One of the largest bumping houses in China and leading WLCSP production base
- Subsidiary of OSAT company JCET
- Owns one of the most advanced packaging technology R&D service platforms[3]
- Global customer base with exposure to the U.S., Western Europe and Asia

- A leading OSAT provider – #4 globally[4] and top 3 in China[4]
- One of the fastest growing OSAT providers globally with ~30% year-over-year revenue growth in 2022[4]
- Six production facilities serving more than half of the top ten global semiconductor manufacturers[4]

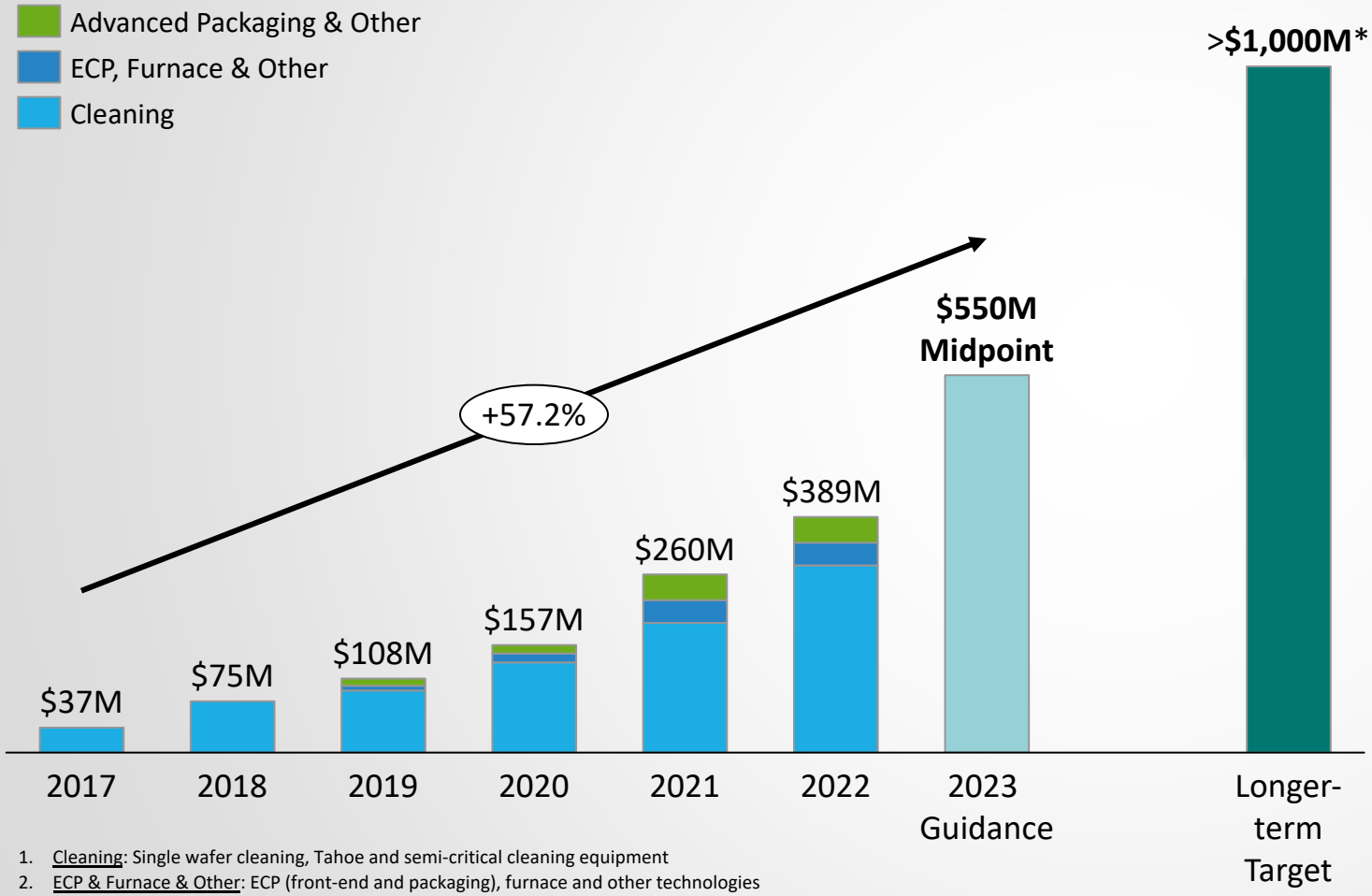
(1) Source: SMIC website. (2) Source: YMTC Press Release. (3) Source: JCAP Company Profile. (4) Source: TFME website.

Innovative Product Introductions Expanding Serviceable Available Market ("SAM")[1]

Estimated 2022 SAM of $16 billion addressed by ACM Research's current product portfolio

[1]Source: Gartner - "Forecast: Semiconductor Wafer Fab Equipment, Worldwide, 4Q22 Update" (December 2022) and Company Estimates

Longer-Term Target for $1B+ in Revenue



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* *ACM Research longer-term target, for planning purposes only, not a projection or estimate of actual or future revenue*

Longer Term Target Composition			
		ACM Research	
Mainland China	**SAM[1]**	**Share**	**Revenue**
Cleaning	$0.7B	55%	$0.4B
ECP	$0.2B	50%	$0.1B
Furnace	$0.5B	35%	$0.2B
PECVD	$0.7B	15%	$0.1B
Track	$0.4B	15%	$0.1B
Ad. Packaging	n/a	n/m	$0.15B
	$2.5B	**39%**	**$1.0B**
RoW			
Cleaning	$3.8B	-	
ECP	$0.6B	-	Upside
Furnace	$2.6B	-	
PECVD	$4.0B	-	
Track	$2.3B	-	
Ad. Packaging	n/a	-	
	$13.2B	**-**	Upside
China + RoW Revenue			**>$1.0B**

[1]Source: Gartner - "Forecast: Semiconductor Wafer Fab Equipment, Worldwide, 4Q22 Update" (December 2022) and Company Estimates:

- 2025 Gartner WFE market of $91B
- ACM Research Global SAM is ~18% of Global WFE and China is 15% of ACM Research Global SAM

Growth Strategy

Growth at Existing Customers

- Continue winning share at existing customers
- Continued China fab expansion, particularly in mature nodes
- Accelerating ECP and furnace product cycles

International Expansion

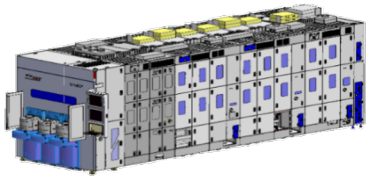
- Expanding dedicated sales team in U.S. and Europe
- Evaluations in process with major U.S. manufacturer
- Received first tool order from major Europe-based global semiconductor manufacturer

New Capacity

- Lingang facility on track for initial production for late 2023 with target for annual revenue production capacity over $1.5 billion
- Purchasing new headquarters in Zhangjiang Shanghai, Silicon Valley of China
- Korea R&D and production facility to support international expansion
- 2023 ~$100 million capex

New Products

- Broad cleaning portfolio covers 90%+ with addition of semi-critical, bevel etch, high-temp SPM, and super-critical dry C02.
- Plating for front and back end, furnace and semi-critical tools
- Added Track & PECVD product categories at end of 2022 that doubled our SAM to $16 billion



Q2 2023 Summary

Q2 2023 Financial Results

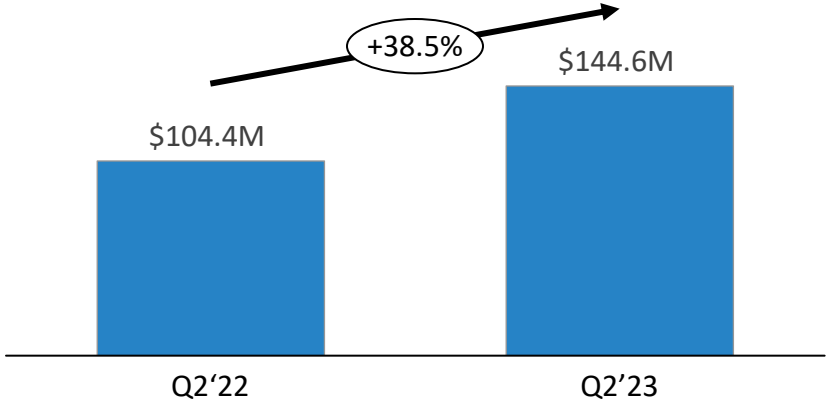
- $144.6 million revenue (up 38.5%); total shipments of $153 million (up 37%)
- 47.5% GAAP gross margin (versus 42.3% in Q2 2022)
- 47.6% non-GAAP gross margin (versus 42.4% in Q2 2022)
- $30.4 million GAAP operating income (21.0% of revenue)
- $32.4 million non-GAAP operating income (22.4% of revenue)
- $0.41 diluted GAAP earnings per share (versus $0.18 in Q2 2022)
- $0.48 diluted non-GAAP earnings per share (versus $0.22 in Q2 2022)

Key Operational Updates

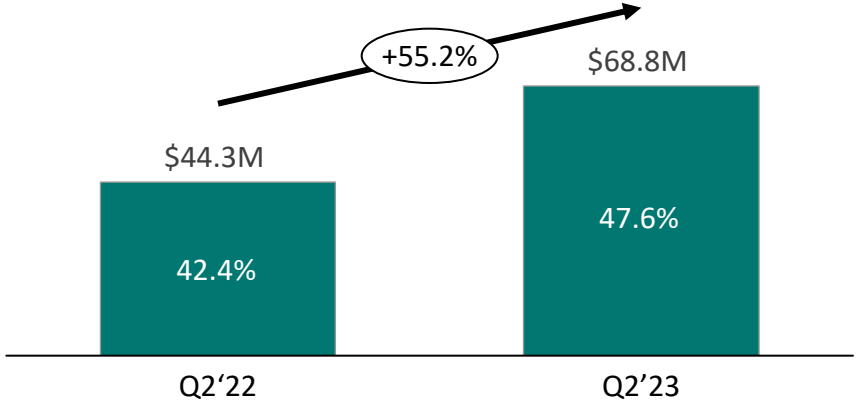
- Strong revenue and EPS as operations and industry supply chains largely return to new normal post-COVID
- Mature node spending by our China customers, market share gains and penetration from new products and new customers
- Expanding customer base for vertical furnace platform
- Continued progress on sales efforts with new Track and PECVD platforms
- U.S. customer evaluation progressing
- Delivery of first evaluation tool to top-tier European customer planned for Q4 2023
- Initial production in Lingang, Shanghai planned for later in 2023

Q2 2023 Financial Results

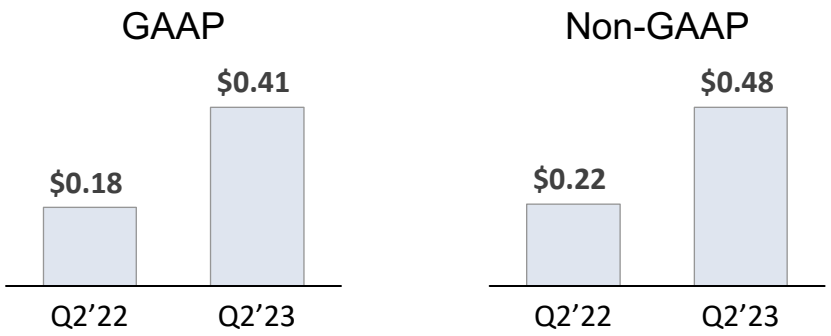
Revenue



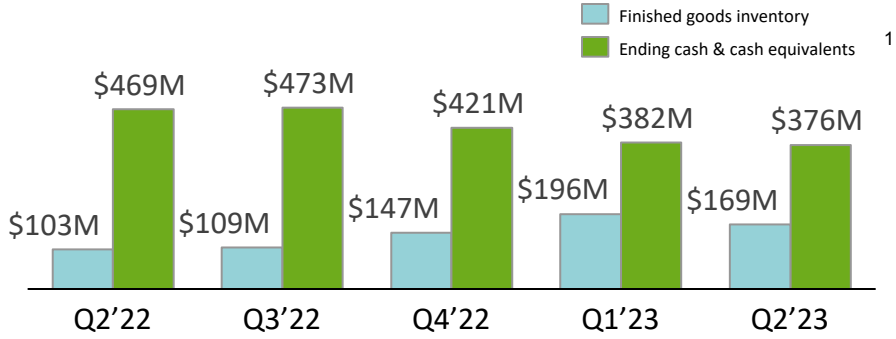
Non-GAAP Gross Profit



EPS



Balance Sheet

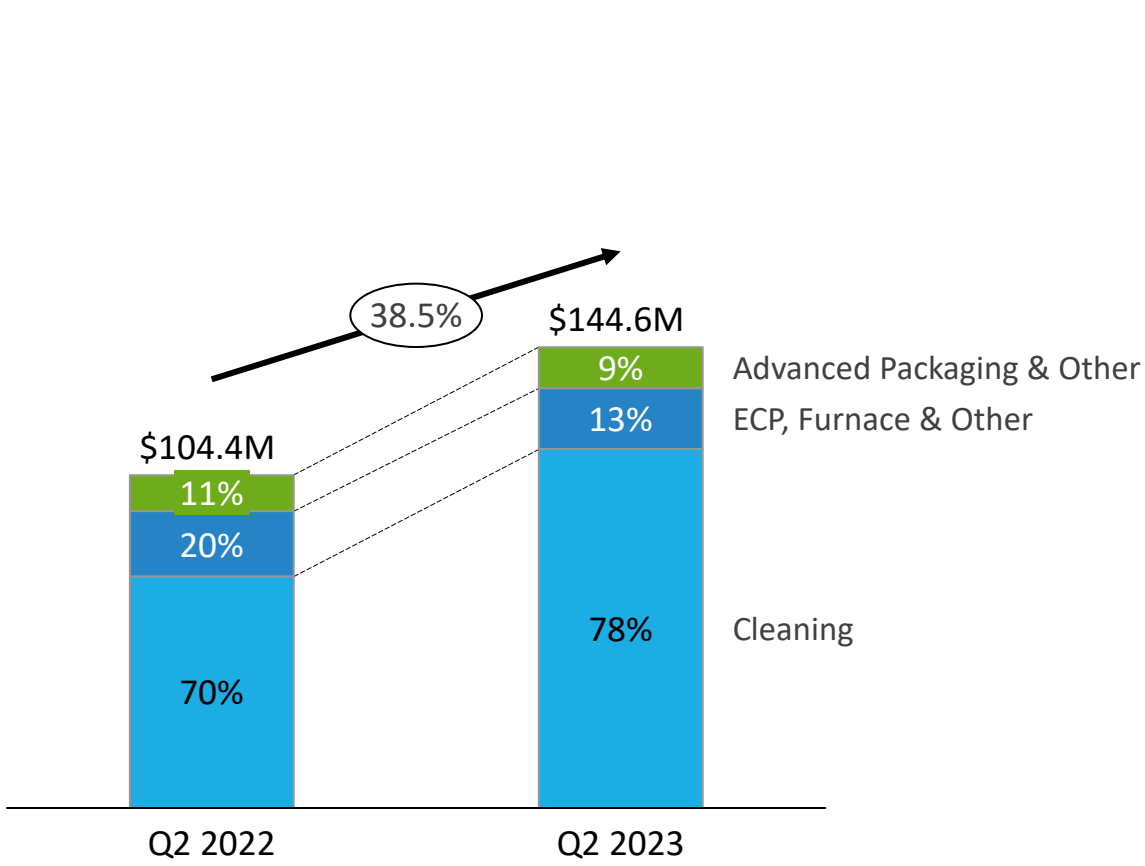


[1] *Including interest bearing time deposits.*

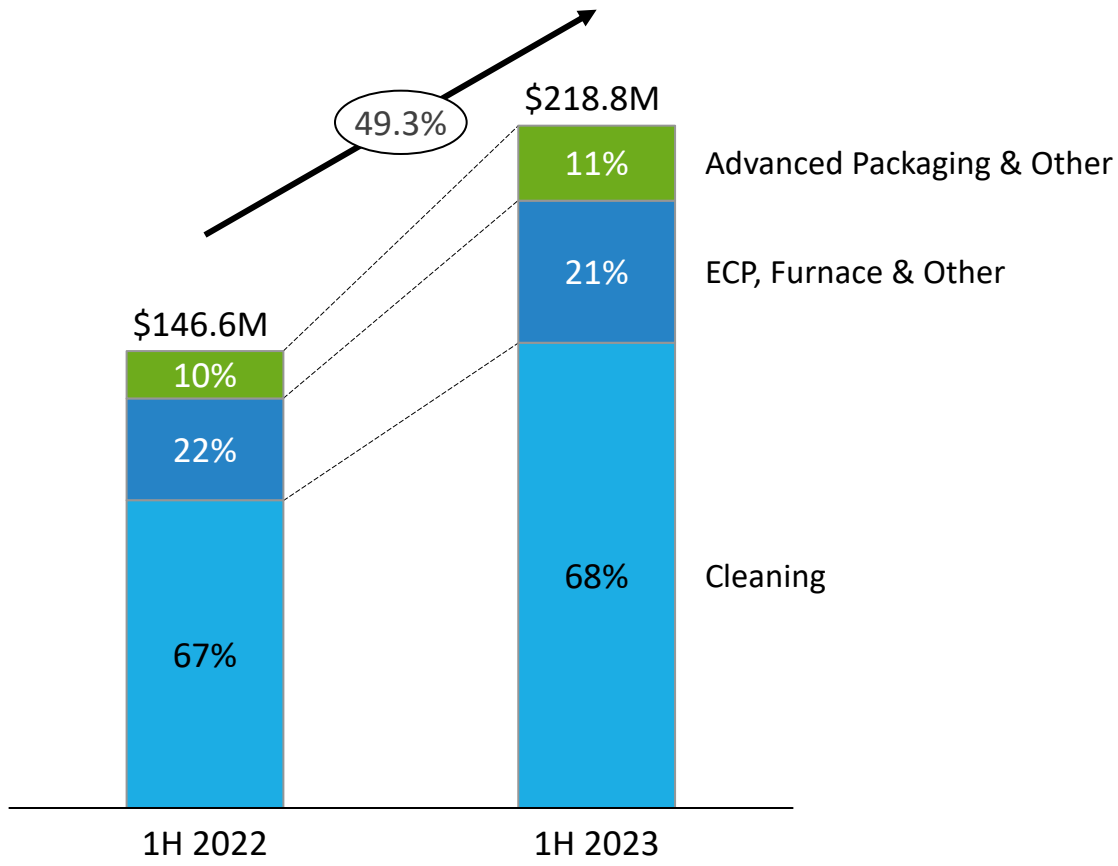
See slide 20 for reconciliation between GAAP and Non-GAAP Gross Profit and EPS

Q2 and YTD 2023 Revenue Detail

Revenue by Product: Q2'23 vs Q2'22



Revenue by Product: 1H'23 vs 1H'22



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Wafer Cleaning

Flagship Cleaning Tools

SAPS

Megasonic Cleaning for Flat and Patterned Wafer Surfaces

- High efficiency with enhanced process flexibility
- Uniform and consistent results
- Customizable specifications

TEBO

Bubble Oscillation Cleaning for Patterned Wafers at Advanced Process Nodes

- Highly effective, damage-free solution for small and fragile features
- Multi-parameter bubble cavitation control

Ultra – C Tahoe

Hybrid Wafer Cleaning With Significant Cost & Environmental Benefits

- Environmentally friendly – uses 10% of the sulfuric acid used than conventional tools
- High cleaning performance at low cost

Bevel Etch

Bevel Etching process for 3D NAND , DRAM and advanced logic processes

- Accurate and efficient wafer center alignment for precise bevel etch
- Variable wafer bevel etch/cut accuracy of 1-7mm and good uniformity

Single high tem SPM

Single High Temp SPM Cleaning for metal removal and PR Strip at advance node

- Photoresist stripping after high-dose energy implant, wet stripping without using a dry ash process, and special metal film removal processes at advance node

Semi Critical Cleaning Tools

Auto Bench

Batch Wafer Cleaning for a full range of wet technologies across multiple nodes

- ULD advance drying technology addresses challenges in high-aspect-ratio structures
- MCR module delivers high cleaning performance and eliminates cross-contamination

Backside

Backside Clean Tool for wafer device side none contact process

- *Good particle performance and etch uniformity control*
- High throughput above 300 wph

Scrubber

Scrubber Cleaning for efficient front- and backside wet-cleaning applications

- *High throughput,* small footprint *and low cost*
- Small particle removal

Advance Processes

Supercritical CO2 Dry

Supercritical CO2 Dry for advance DRAM processes

- Damage free drying process for high-aspect-ratio structures including Isolation and Storage node

High Temp IPA Dry (UTD)

High Temp IPA Drying for advance Logic processes

- Damage free drying process for small structures and high-aspect-ratio structures
- Associate with customizable Cleaning method for good cleaning performance.

ACM Research's integrated circuit wet cleaning equipment product line covers over 80% of the cleaning process steps

Electroplating

Model	Ultra ECP map	Ultra ECP 3D	Ultra ECP ap	Ultra ECP ap (Cu-Ni-SnAg-Au)	Ultra ECP GIII
Application	Dual-damascene plating (90nm-28nm)	3D/2.5D high aspect ratio TSV	Pillar bump, Solder bump, RDL, Conformal TSV	High-density Fan Out Fine Pitch RDL	RF product 150mm wafer-level packaging
Module	16 chambers	10/12 chambers	24/28 chambers	28 chambers	8/9 chambers
	Cu Post-cleaning Annealing	Cu Post-cleaning Pre-wetting	Cu+Ni+SnAg Pre-wetting Post-cleaning	Cu/Ni/SnAg/Au Pre-wetting Post-cleaning Cleaning after Au plating	Cu+Sn/Ag+Ni Au Pre-wetting Post-cleaning
Special Features	Impulse local plating	Impulse local plating	Second anode technology	Second anode technology Impulse Au plating	Second anode technology

Vertical Furnace

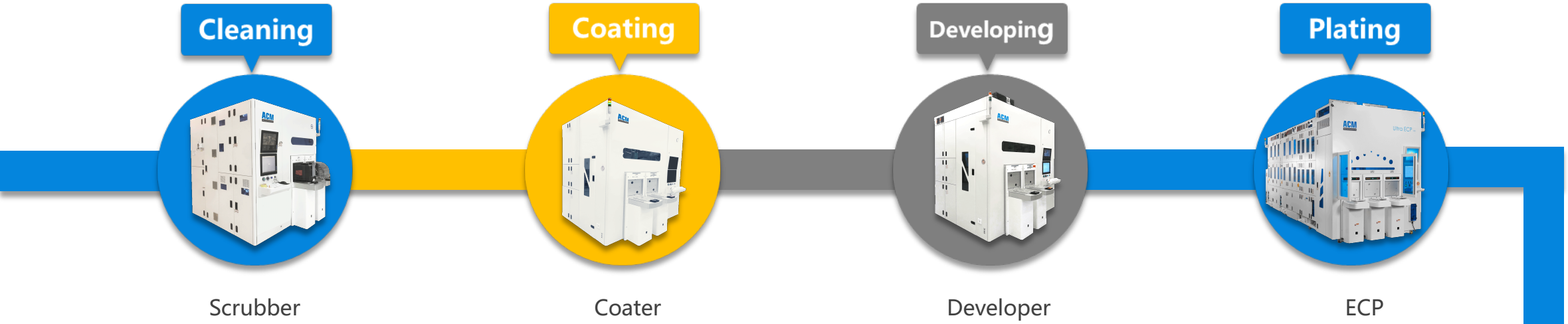
Mask | **Ox /Anneal** | Photo | Exposure | Develop | Etch | Ion Implantation | **CVD** | **ALD** | Metal Wire

Furnace Tube Classification	Film Type	Process	Temperature Range	Existing ACM Product	In Development
Normal Pressure Chemical Vapor Deposition Furnace	Oxidation	Wet oxygen/dry oxygen/nitrogen annealing	700~1200℃	★	
	Annealing				
	Back-end thermal treatment	Copper process thermal treatment	100~450℃		
		Coating and curing			
Low Pressure Chemical Vapor Deposition Furnace	Alloy	Hydrogen/nitrogen thermal treatment	100~450℃	★	
	Silicon deposition	Poly-crystal silicon doping	500~620℃	★	
		Advanced poly-crystal deposition			☆
		No poly-crystal silicon doping		★	
	Silicon oxide	High-temperature silicon oxide	650~800℃	★	
	Silicon nitride	Silicon nitride deposition		★	
Atomic Layer Deposition Furnace	Silicon oxide	Silicon oxide deposition	500~650℃	★	
	Silicon nitride	Silicon nitride deposition			

W*L*H= 1.10m*3.70m*4.05m

Advanced Packaging

Comprehensive solution for wafer-level advanced packaging wet process



Scrubber | Coater | Developer | ECP

- Make use of ACM Research's technology advantages to expand application in Asia, especially advanced packaging manufacturers in China
- Dedicated to providing diversified and customer equipment meeting customer's designing requirements
- The products include scrubbers, coaters, developers, photoresist strippers, wet etchers, ECPs, and stress-free polishers

Wet Etcher | PR stripper | SFP

Track and PECVD

Model	Model	Technical Features	Offline/Inline	Chamber Temperature	Bake Range	Development Phase
 **Ultra Lith™ Track Coater/Developer** ——	ArF Model	✓ Support 300mm wafers ✓ Four 12-inch load ports ✓ 8 coating chambers ✓ 8 developing chambers	Inline	23°C ±0.1°C	50~250°C	Industry Evaluation
	KrF Model			——	——	In Development
——	I-line Model			——	——	In Development

Model	Film Category	Film Type	RF Frequency	RF Control	Heater/CH	Development Phase
 **Ultra Pmax™ PECVD**	SiH4 Base	SiO2; Si3N4; SiON	HF: 13.56MHz HF: 27.12MHz LF: 400KHz	Separate control	3	Industry Evaluation
	TEOS Base	TEOS Layer	HF: 13.56MHz HF: 27.12MHz LF: 400KHz	Separate control	3	
	Chemical Base	SiCN/APF Layer	HF: 13.56MHz HF: 27.12MHz LF: 400KHz	Separate control	3	

Q2 2023 GAAP to Non-GAAP Reconciliation

	Three Months Ended June 30,							
	2023				2022			
	Actual (GAAP)	SBC	Other non-operating adjustments	Adjusted (Non-GAAP)	Actual (GAAP)	SBC	Other non-operating adjustments	Adjusted (Non-GAAP)
	(In thousands)							
Revenue	$ 144,577	$ -	$ -	$ 144,577	$ 104,395	$ -	$ -	$ 104,395
Cost of revenue	(75,938)	(125)	-	(75,813)	(60,238)	(140)	-	(60,098)
Gross profit	68,639	(125)	-	68,764	44,157	(140)	-	44,297
Operating expenses:								
Sales and marketing	(11,439)	(431)	-	(11,008)	(7,664)	(574)	-	(7,090)
Research and development	(20,064)	(709)	-	(19,355)	(11,367)	(656)	-	(10,711)
General and administrative	(6,706)	(752)	-	(5,954)	(5,091)	(599)	-	(4,492)
Total operating expenses	(38,209)	(1,892)	-	(36,317)	(24,122)	(1,829)	-	(22,293)
Income (loss) from operations	$ 30,430	$ (2,017)	$ -	$ 32,447	$ 20,035	$ (1,969)	$ -	$ 22,004
Unrealized loss on trading securities	(2,455)	-	(2,455)	-	(423)	-	(423)	-
Net income (loss) attributable to ACM Research, Inc.	**$ 26,825**	**$ (2,017)**	**$ (2,455)**	**$ 31,297**	**$ 12,236**	**$ (1,969)**	**$ (423)**	**$ 14,628**
Basic EPS	$ 0.45			$ 0.52	$ 0.21			$ 0.25
Diluted EPS	$ 0.41			$ 0.48	$ 0.18			$ 0.22

1 Unrealized loss on trading securities reflects the change in market value of the indirect investment by ACM Shanghai in the STAR Market IPO shares of Semiconductor Manufacturing International Corporation ("SMIC"). The value is marked-to-market quarterly and is excluded in the non-GAAP financial metrics.