

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 March 31, 2023

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

94-3290283

(State or Other Jurisdiction of Incorporation or Organization)

(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	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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	54,852,681 shares outstanding as of May 5, 2023
Class B Common Stock, \$0.0001 par value	5,021,811 shares outstanding as of May 5, 2023

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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.

We conduct a substantial majority of our product development, manufacturing, support and services in the PRC through ACM Shanghai. We are not a PRC operating company, and we do not conduct our operations in the PRC through the use of a variable interest entity or any other structure designed for the purpose of avoiding PRC legal restrictions on direct foreign investments in PRC-based companies. For a description of certain matters relating to our operations in the PRC, including our corporate structure, the movement of cash throughout our organization, certain audit and regulatory matters, and risks associated therewith, please see “Item 2—Management’s Discussion and Analysis of Financial Condition and Results of Operations” in this report, the disclosure at the forefront of our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, and the Risk Factors included therein, as updated by the disclosure included in “Part II. Item 1A—Risk Factors” in this report.

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 ™ 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, 4Q22 Update” (December 2022), 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)

	March 31, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	\$ 260,387	\$ 247,951
Restricted cash	460	500
Short-term time deposits (note 2)	2,999	70,492
Trading securities (note 15)	12,733	20,209
Accounts receivable (note 4)	186,130	182,936
Other receivables	36,178	29,617
Inventories (note 5)	473,299	393,172
Advances to related party (note 16)	2,306	3,322
Prepaid expenses	19,319	15,607
Total current assets	993,811	963,806
Property, plant and equipment, net (note 6)	149,904	82,875
Land use right, net (note 7)	8,761	8,692
Operating lease right-of-use assets, net (note 11)	7,408	2,489
Intangible assets, net	1,233	1,255
Long-term time deposits (note 2)	117,855	101,956
Deferred tax assets (note 19)	13,035	6,703
Long-term investments (note 14)	17,265	17,459
Other long-term assets (note 8)	3,479	50,265
Total assets	\$ 1,312,751	\$ 1,235,500
Liabilities and Equity		
Current liabilities:		
Accounts payable	\$ 116,558	\$ 101,735
Other payables and accrued expenses (note 10)	52,966	52,201
Advances from customers	180,453	153,773
Current portion of operating lease liability (note 11)	3,013	1,382
Deferred revenue	4,400	4,174
Short-term borrowings (note 9)	56,745	56,004
Current portion of long-term borrowings (note 12)	2,369	2,322
Income taxes payable (note 19)	8,579	3,469
FIN-48 payable (note 19)	6,774	6,686
Related party accounts payable (note 16)	18,354	14,468
Total current liabilities	450,211	396,214
Long-term borrowings (note 12)	18,245	18,687
Long-term operating lease liability (note 11)	4,395	1,107
Other long-term liabilities (note 13)	7,195	7,321
Total liabilities	480,046	423,329
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	606,398	604,089
Retained earnings	101,410	94,426
Statutory surplus reserve (note 22)	16,881	16,881
Accumulated other comprehensive loss	(32,768)	(40,546)
Total ACM Research, Inc. stockholders' equity	691,927	674,856
Non-controlling interests	140,778	137,315
Total equity	832,705	812,171
Total liabilities and equity	\$ 1,312,751	\$ 1,235,500

(1) Prior period results 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 March 31,	
	2023	2022
Revenue (note 3)	\$ 74,256	\$ 42,186
Cost of revenue	34,270	22,500
Gross profit	39,986	19,686
Operating expenses:		
Sales and marketing	9,337	6,697
Research and development	14,029	17,346
General and administrative	7,758	4,949
Total operating expenses	31,124	28,992
Income (loss) from operations	8,862	(9,306)
Interest income	1,785	1,805
Interest expense	(695)	(261)
Realized gain from sale of trading securities	3,994	-
Unrealized loss on trading securities	(654)	(3,858)
Other income (expense), net	(1,418)	237
Equity loss in net loss of affiliates	(32)	(71)
Income (loss) before income taxes	11,842	(11,454)
Income tax benefit (expense) (note 19)	(2,879)	4,011
Net income (loss)	8,963	(7,443)
Less: Net income (loss) attributable to non-controlling interests	1,818	(1,657)
Net income (loss) attributable to ACM Research, Inc.	\$ 7,145	\$ (5,786)
Comprehensive income (loss):		
Net income (loss)	8,963	(7,443)
Foreign currency translation adjustment, net of tax	9,423	2,454
Comprehensive income (loss)	18,386	(4,989)
Less: Comprehensive income (loss) attributable to non-controlling interests	3,462	(1,073)
Comprehensive income (loss) attributable to ACM Research, Inc.	\$ 14,924	\$ (3,916)
Net income (loss) attributable to ACM Research, Inc. per share of common stock (note 2):		
Basic	\$ 0.12	\$ (0.10)
Diluted (2)	\$ 0.11	\$ (0.10)
Weighted average shares of common stock outstanding used in computing per share amounts (note 2):		
Basic (1)	59,736,764	58,827,390
Diluted (1) (2)	65,058,777	58,827,390

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

(2) Weighted average diluted shares of common stock outstanding and net income (loss) attributable to ACM research, Inc. per diluted share of common stock for the first quarter of 2022 was incorrectly reported as 65,950,922 and (\$0.09), respectively, in the prior year filing.

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 Three Months Ended March 31, 2023 and 2022
(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, 2021	53,608,929	\$ 5	5,087,814	\$ 1	\$ 595,045	\$ 63,732	\$ 8,312	\$ 9,109	\$ 135,461	\$ 811,665
Net loss	-	-	-	-	-	(5,786)	-	-	(1,657)	(7,443)
Foreign currency translation adjustment	-	-	-	-	-	-	-	1,870	584	2,454
Exercise of stock options	425,349	-	-	-	724	-	-	-	-	724
Stock-based compensation	-	-	-	-	1,374	-	-	-	-	1,374
Conversion of Class B common stock to Class A common stock	1,002	-	(1,002)	-	-	-	-	-	-	-
Balance at March 31, 2022	<u>54,035,280</u>	<u>\$ 5</u>	<u>5,086,812</u>	<u>\$ 1</u>	<u>\$ 597,143</u>	<u>\$ 57,946</u>	<u>\$ 8,312</u>	<u>\$ 10,979</u>	<u>\$ 134,388</u>	<u>\$ 808,774</u>

	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, 2022	54,655,286	\$ 5	5,021,811	\$ 1	\$ 604,089	\$ 96,034	\$ 16,881	\$ (40,546)	\$ 137,315	\$ 813,779
Cumulative effect of change in accounting principle under ASU 2016-13	-	-	-	-	-	(1,769)	-	-	-	(1,769)
Net income	-	-	-	-	-	7,145	-	-	1,818	8,963
Foreign currency translation adjustment	-	-	-	-	-	-	-	7,778	1,645	9,423
Exercise of stock options	163,069	-	-	-	241	-	-	-	-	241
Stock-based compensation	-	-	-	-	2,068	-	-	-	-	2,068
Balance at March 31, 2023	<u>54,818,355</u>	<u>\$ 5</u>	<u>5,021,811</u>	<u>\$ 1</u>	<u>\$ 606,398</u>	<u>\$ 101,410</u>	<u>\$ 16,881</u>	<u>\$ (32,768)</u>	<u>\$ 140,778</u>	<u>\$ 832,705</u>

(1) Prior period results 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 Cash Flows
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2023	2022
Cash flows from operating activities:		
Net income (loss)	\$ 8,963	\$ (7,443)
Adjustments to reconcile net income from operations to net cash used in operating activities		
Depreciation and amortization	1,714	1,213
Realized gain on trading securities	(3,994)	-
Equity income in net income of affiliates	32	71
Unrealized loss on trading securities	654	3,858
Bad debt expense	298	-
Deferred income taxes	(6,294)	(2,081)
Stock-based compensation	2,068	1,374
Net changes in operating assets and liabilities:		
Accounts receivable	(2,452)	(284)
Other receivables	(5,423)	(4,893)
Inventories	(79,942)	(52,503)
Advances to related party (note 16)	1,016	—
Prepaid expenses	(3,362)	(5,015)
Other long-term assets	—	(119)
Related party accounts payable (note 16)	3,886	—
Accounts payable	13,250	6,681
Advances from customers	25,857	29,273
Deferred revenue	3,407	2,699
Income taxes payable	6,683	(1,999)
FIN-48 payable	88	10
Other payables and accrued expenses	1,327	1,274
Other long-term liabilities	1,730	155
Net cash flow used in operating activities	(30,494)	(27,729)
Cash flows from investing activities:		
Purchase of property and equipment	(14,895)	(3,176)
Purchase of intangible assets	(155)	(408)
Purchase of long-term investment (Note 14)	(728)	-
Increase (decrease) of time deposits	53,835	(152,775)
Proceeds from selling trading securities	11,072	-
Net cash (used in) provided by investing activities	49,129	(156,359)
Cash flows from financing activities:		
Repayments of long-term borrowings	(1,696)	(696)
Proceeds from exercise of stock options	241	724
Net cash (used in) provided by financing activities	(1,455)	28
Effect of exchange rate changes on cash, cash equivalents and restricted cash		
	\$ (4,784)	\$ 1,304
Net decrease in cash, cash equivalents and restricted cash	\$ 12,396	\$ (182,756)
Cash, cash equivalents and restricted cash at beginning of period	248,451	563,067
Cash, cash equivalents and restricted cash at end of period	\$ 260,847	\$ 380,311
Supplemental disclosure of cash flow information:		
Interest paid, net of capitalized interest	\$ 695	\$ 261
Cash paid for income taxes	\$ 2,874	\$ —
Reconciliation of cash, cash equivalents and restricted cash in condensed consolidated statements of cash flows:		
Cash and cash equivalents	260,387	379,792
Restricted cash	460	519
Cash, cash equivalents and restricted cash	\$ 260,847	\$ 380,311
Non-cash financing activities:		
Cashless exercise of stock options	\$ 47	\$ 39

ACM RESEARCH, INC.
Notes to the Condensed Consolidated Financial Statements
(In thousands, except share, percentage and per share data)

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, under the brand name "Ultra C," which are based on the Company’s proprietary Space Alternated Phase Shift (“SAPS”) and Timely Energized Bubble Oscillation (“TEBO”) technologies. 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. In 2022, the Company added two major new product categories with the introduction of the Ultra Pmax™ PECVD and Ultra Track tools. 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.
Notes to the Condensed Consolidated Financial Statements
(In thousands, except share, percentage and per share data)

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, ACM Research (Lingang), Inc. (“ACM Lingang”) to manage activities related to the addition of future long-term production capacity. ACM Lingang is the English name referred to by its Chinese language name Shengwei Research (Shanghai), Inc. (“ACM Shengwei”) in prior filings. ACM Shengwei and ACM Lingang refer to the same entity.

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.

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 reflect the Stock Split.

ACM RESEARCH, INC.
Notes to the Condensed Consolidated Financial Statements
(In thousands, except share, percentage and per share data)

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

Name of subsidiaries	Place and date of incorporation	Effective interest held as at	
		March 31, 2023	December 31, 2022
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 %
ACM Research (Lingang), Inc. (1)	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 %	82.5 %
Hanguk ACM CO., LTD.	Korea, March 2022	100.0 %	100.0 %

(1) ACM Research (Lingang) Inc., or ACM Lingang, is the English name referred to by its Chinese language name Shengwei Research (Shanghai), Inc. in prior filings. ACM Research (Lingang), Inc. and Shengwei Research (Shanghai), Inc. refer to the same entity.

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. 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, 2022 included in ACM's Annual Report on Form 10-K for the fiscal year ended December 31, 2022.

The accompanying condensed consolidated financial statements 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 March 31, 2023 and the results of operations for the three months ended March 31, 2023 are not necessarily indicative of the results to be expected for any future period.

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 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.

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Reclassification

Certain prior year amounts related to related party transactions have been reclassified to conform to the current year 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 2022, 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 18.2% of our revenue; Semiconductor Manufacturing International Corporation, or SMIC, a leading PRC-based foundry, accounted for 15.6% of our revenue; and Yangtze Memory Technologies Co., Ltd., or YMTC, a leading PRC-based memory chip company, together with one of its subsidiaries, accounted for 10.0% of our revenue; In 2021, The Huali Huahong Group accounted for 28.1% of our revenue; and YMTC, together with one of its subsidiaries, accounted for 20.8% 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, re-exports or transfers to or within the PRC of additional types of semiconductor manufacturing items, items for use in manufacturing designated types of semiconductor manufacturing equipment in the PRC, and semiconductor manufacturing equipment for use at certain IC manufacturing and development facilities in the PRC. In addition, the U.S. government imposed new restrictions by which U.S. persons anywhere in the world are effectively barred from engaging in certain activities related to the development and production of certain semiconductors at PRC fabrication facilities meeting specified criteria, even if no items subject to the EAR are involved.

ACM Shanghai has determined that several of its customers have PRC-based facilities that meet the restricted criteria, and has also determined that several of its products, and/or components for its products, may meet the parameters of export control classification numbers, or ECCNs, affected by the restrictions. Accordingly, depending on the details of the final implementation of these new restrictions and associated licensing policies, ACM may not be able to import, or may face substantial restrictions in importing, certain parts from the United States or parts subject to U.S. export controls from outside the United States to support tool shipments to such facilities, or to be embedded into tools defined by affected ECCNs. ACM and ACM Shanghai have implemented modifications to their existing business policies and practices in response to the new restrictions, including by imposing limitations on the activities of their U.S. persons and undertaking measures in connection with their supply chains more broadly to comply with the new regulations.

ACM and ACM Shanghai believe that as a result of the new restrictions, several ACM Shanghai customers have significantly reduced production and related capital spending at facilities meeting the restricted advanced node capabilities. In addition, ACM Shanghai has experienced challenges as the companies in its supply chain adapt their policies to the new regulations. These factors had an adverse impact on ACM Shanghai's shipments and sales for both the three months ended March 31, 2023 and December 31, 2022. ACM and ACM Shanghai anticipate these factors will continue to have an adverse impact on ACM Shanghai's shipments and sales in future periods.

See "Part II. Item 1A – Risk Factors – Regulatory Risks – Our ability to sell our tools to customers in the PRC has been impacted, and will likely continue to be materially and adversely impacted, by export license requirements, other regulatory changes, or other actions taken by the U.S. or other governmental agencies" for more information.

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.
- In December 2022, the PRC government relaxed its zero-COVID policies, which resulted in large scale COVID-19 infections throughout China, including Shanghai. A significant number of ACM Shanghai employees were also infected, and in many cases missed work for one or several weeks, which caused administrative inefficiencies and operational challenges in late 2022 and early 2023. The Company cannot assure you that illnesses of ACM Shanghai employees, or of its customers, suppliers or other third parties, may not result in closures, reductions of PRC operations or production, or additional administrative inefficiencies in the upcoming months or quarters.
- With the relaxation of the PRC’s zero-COVID policies in December 2022, and the subsequent widespread infections of China’s population, during the three months ended March 31, 2023, the Company experienced additional inefficiencies due in part to infections and the resultant absenteeism experienced by its employees and the general population of China.

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.

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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.

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.

Correction of immaterial error in prior year

During the three months ended March 31, 2023, the Company became aware of an immaterial error in its previously issued financial statements regarding deferred tax assets and equity income in net income of affiliates, in the net amount of \$1.6 million. The change resulted in adjustment to increase retained earnings of \$1.6 million as of January 1, 2023, investment in equity method affiliate, net of tax of \$(0.8) million, and deferred tax assets of \$2.4 million in the condensed consolidated balance sheet for the three months ended March 31, 2023.

The Company evaluated the effect of these errors on the financial statements as of December 31, 2022, under ASC 250 "Accounting Changes and Error Corrections", Staff Accounting Bulletin 99 "Materiality", Staff Accounting Bulletin 108 "Considering the Effects of Prior Year Misstatements in Current Year Financial Statements", and determined that these errors were not material to the previously issued financial statements.

Change in accounting principle

Prior to January 1, 2023, the Company's bad debt reserve was based on specific accounts that it deemed potentially uncollectible. Effective on January 1, 2023, the Company adopted ASU 2016-13, *Financial Instruments – Credit Losses (Topic 326)* (ASU 2016-13) that each reporting entity should estimate an allowance for expected credit losses, which is intended to result in more timely recognition of loss. Under the new approach, the Company expanded to include the certain percentage of bad debt reserve based on the outstanding accounts receivables aging. Adoption of ASU 2016-13 is considered as a change in accounting principle which 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 cumulative-effect adjustment, net of tax impact, to retained earnings as of January 1, 2023 was \$(1,769).

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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. At times, cash deposits may exceed government-insured limits.

The following table presents cash and cash equivalents, according to jurisdiction as of March 31, 2023 and December 31, 2022:

	March 31, 2023	December 31, 2022
United States	\$ 22,161	\$ 25,011
Mainland China	159,438	129,695
China Hong Kong	77,148	89,187
South Korea	1,589	4,007
Singapore	51	51
Total	<u>\$ 260,387</u>	<u>\$ 247,951</u>

The amounts in mainland China do not include short-term and long-term time deposits which totaled \$120,854 and \$172,448 at March 31, 2023 and December 31, 2022, respectively.

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

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 three months ended March 31, 2023, cash payments from ACM Shanghai to ACM California for the procurement of goods was \$10.9 million and for services was \$0. For the three months ended March 31, 2022, cash payments from ACM Shanghai to ACM California for the procurement of goods was \$7.9 million and for services was \$0. ACM California periodically borrows funds for working capital advances from its direct parent, CleanChip. ACM California repays or renews these intercompany loans in accordance with their terms.

For sales through CleanChip and ACM Research, a certain amount of sales or advanced payments from customers is repatriated back to ACM Shanghai in accordance with applicable transfer pricing arrangements in the ordinary course of business. ACM Research provides services to certain customers located in the U.S., Europe and other regions outside of mainland China to support the evaluation of first tools and provide support for tools under warranty on behalf of ACM Shanghai. For these transactions, ACM Shanghai makes cash payments to ACM Research, Inc. in accordance with applicable transfer pricing arrangements.

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 ACM Research and ACM Shanghai. The Company intends to retain any future earnings to finance the operations and expenses of the business, and does not expect to distribute earnings or declare or pay any dividends in the foreseeable future.

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Amounts held in South Korea exceed the Korea Deposit Insurance Corporation 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 the three months ended March 31, 2023 and 2022, with the exception of sales and services-related transfer-pricing payments in the ordinary course of business, 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 terms and interest rates which cannot be withdrawn before maturity. They are also subject to the risk control regulatory standards described above upon maturity.

At March 31, 2023 and December 31, 2022, time deposits consisted of the following:

	March 31, 2023	December 31, 2022
Deposit in China Merchant Bank which matured on January 29, 2023 with an annual interest rate of 2.25%	\$ —	\$ 38,772
Deposit in China Everbright Bank which matured on January 29, 2023 with an annual interest rate of 2.25%	\$ —	\$ 14,360
Deposit in China Everbright Bank which matures on May 22, 2023 with an annual interest rate of 5.07%	\$ 2,999	\$ 3,000
Deposit in China Industrial Bank which matured on January 30, 2023 with an annual interest rate of 2.15%	\$ —	\$ 14,360
Deposit in China Merchant Bank which matures on January 29, 2024 with an annual interest rate of 3.15%	\$ 14,550	\$ -
Deposit in China Merchant Bank which matures on January 29, 2024 with an annual interest rate of 2.85%	\$ 29,100	\$ 28,720
Deposit in Bank of Ningbo which matures on February 17, 2024 with an annual interest rate of 2.85%	\$ 43,650	\$ 43,080
Deposit in Shanghai Pudong Development Bank which matures on October 20, 2025 with an annual interest rate of 3.10%	\$ 7,275	\$ 7,180
Deposit in Shanghai Pudong Development Bank which matures on November 14, 2025 with an annual interest rate of 3.10%	\$ 7,275	\$ 7,180
Deposit in Shanghai Pudong Development Bank which matures on December 8, 2025 with an annual interest rate of 3.10%	\$ 4,365	\$ 4,308
Deposit in Shanghai Pudong Development Bank which matures on December 15, 2025 with an annual interest rate of 3.10%	\$ 4,365	\$ 4,308
Deposit in Shanghai Pudong Development Bank which matures on December 30, 2025 with an annual interest rate of 3.10%	\$ 7,275	\$ 7,180
	\$ 120,854	\$ 172,448

For the three months ended March 31, 2023 and March 31, 2022, respectively, interest income related to time deposits was \$975 and \$588, respectively.

Financial Instruments

The Company maintains an investment portfolio of various holdings, types, and maturities. Investments classified as trading securities are recorded at fair value based upon quoted market prices. Differences between the cost and fair value of

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trading securities are recognized as other income (expense), net in the condensed consolidated statements of operations and comprehensive income (loss).

The Company periodically invests in equity securities. For equity investments that do not have a readily determinable fair value, the Company records them using either 1) the measurement alternative which measures the equity investments at cost minus impairment, if any, plus or minus changes resulting from qualifying observable price changes; or 2) the equity method whereby the Company recognizes its proportional share of the income or loss from the equity method investment on a one-quarter lag. The equity method is utilized when the Company does not have the ability to control the investee but is deemed to have the ability to exercise significant influence over the investee's operating or financial policies. For equity investments that have a readily determinable fair value, the Company records them at fair market value on a recurring basis based upon quoted market prices. Realized and unrealized gains and losses resulting from application of the measurement alternative, the impact of the application of the equity method to the Company's equity investments, and recognition of changes in fair market value, as applicable, are recognized as other income (expense), net in the condensed consolidated statements of operations and comprehensive income (loss).

The Company defines fair value as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required or permitted to be recorded at fair value, the Company considers the principal or most advantageous market in which it would transact, and it considers assumptions that market participants would use when pricing the asset or liability.

A fair value hierarchy has been established that prioritizes the inputs to valuation techniques used to measure fair value. The level of an asset or liability in the hierarchy is based on the lowest level of input that is significant to the fair value measurement. Assets and liabilities carried at fair value are classified and disclosed in one of the following three categories:

Level 1: Valuations based on quoted prices in active markets for identical assets or liabilities with sufficient volume and frequency of transactions.

Level 2: Valuations based on observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active for identical assets or liabilities, or model-derived valuations techniques for which all significant inputs are observable in the market or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3: Valuations based on unobservable inputs to the valuation methodology that are significant to the measurement of fair value of assets or liabilities and based on non-binding, broker-provided price quotes and may not have been corroborated by observable market data.

The Company's primary financial instruments include its cash, cash equivalents, short term and long term deposits, restricted cash, short-term and long-term investments, accounts receivable, accounts payable, long-term debt and leases. The estimated fair value of cash, time deposits, accounts receivable, and accounts payable approximates their carrying value due to the short period of time to their maturities.

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	Quoted Prices in Active Markets for Identical Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
As of March 31, 2023:				
Assets				
Cash equivalents	\$ 260,387	\$ —	\$ —	\$ 260,387
Trading securities	12,733	—	—	12,733
	\$ 273,120	\$ —	\$ —	\$ 273,120
Liabilities				
Short-term borrowings	\$ —	\$ 56,745	\$ —	\$ 56,745
Long-term borrowings	—	20,614	—	20,614
	\$ —	\$ 77,359	\$ —	\$ 77,359
As of December 31, 2022:				
Assets				
Cash equivalents	\$ 247,951	\$ —	\$ —	\$ 247,951
Trading securities	20,209	—	—	20,209
	\$ 268,160	\$ —	\$ —	\$ 268,160
Liabilities				
Short-term borrowings	\$ —	\$ 56,004	\$ —	\$ 56,004
Long-term borrowings	—	21,009	—	21,009
	\$ —	\$ 77,013	\$ —	\$ 77,013

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Basic and Diluted Net Income per Share of Common Stock

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

	Three Months Ended March 31,	
	2023	2022
Numerator:		
Net income (loss)	\$ 8,963	\$ (7,443)
Less: Net income (loss) attributable to non-controlling interests	1,818	(1,657)
Net income (loss) available to common stockholders, basic	<u>\$ 7,145</u>	<u>\$ (5,786)</u>
Less: Dilutive effect arising from stock-based awards by ACM Shanghai	93	(86)
Net income (loss) available to common stockholders, diluted	<u>\$ 7,052</u>	<u>\$ (5,700)</u>
Weighted average shares outstanding, basic (1)	59,736,764	58,827,390
Effect of dilutive securities	5,322,013	0
Weighted average shares outstanding, diluted (2)	<u>65,058,777</u>	<u>58,827,390</u>
Net income per share of common stock:		
Basic	<u>\$ 0.12</u>	<u>\$ (0.10)</u>
Diluted (2)	<u>\$ 0.11</u>	<u>\$ (0.10)</u>

- (1) Prior period results reflect the three-for-one stock split effected in the form of a stock dividend in March 2022. See Note 1 for details.
- (2) Weighted average diluted shares of common stock outstanding and net income (loss) attributable to ACM research, Inc. per diluted share of common stock for the first quarter of 2022 was incorrectly reported as 65,950,922 and (\$0.09), respectively, in the prior year filing.

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 months ended March 31, 2023 or 2022, the net income per share of common stock 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 share of common stock.

Diluted net income per share of common stock 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 months ended March 31, 2023 and 2022.

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 March 31, 2023 and 2022, four customers accounted for 59.7% and five customers accounted for 83.4% of revenue, respectively. As of March 31, 2023 and December 31, 2022, four customers accounted for 66.1% and two customers

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accounted for 42.6%, 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.

Recently Adopted Accounting Pronouncements

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.

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 has adopted 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. Please refer to change in accounting principle (Note 2) for details.

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 March 31,	
	2023	2022
Single wafer cleaning, Tahoe and semi-critical cleaning equipment	\$ 36,614	\$ 26,033
ECP (front-end and packaging), furnace and other technologies	26,598	12,248
Advanced packaging (excluding ECP), services & spares	11,044	3,905
Total Revenue By Product Category	\$ 74,256	\$ 42,186
Wet-cleaning and other front-end processing tools	\$ 56,382	\$ 31,702
Advanced packaging, other processing tools, services and spares	17,874	10,484
Total Revenue Front-end and Back-End	\$ 74,256	\$ 42,186

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	Three Months Ended March 31,	
	2023	2022
Mainland China	\$ 72,458	\$ 42,130
Other Regions	1,798	56
	\$ 74,256	\$ 42,186

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

	March 31, 2023	December 31, 2022
Accounts receivable	\$ 186,130	\$ 182,936
Advances from customers	180,453	153,773
Deferred revenue	4,400	4,174

During the three months ended March 31, 2023, advances from customers increased by \$26.7 million, due to an increase of payments made by customers for first tools under evaluation, and an increase in customer pre-payments for tools prior to delivery.

NOTE 4 – ACCOUNTS RECEIVABLE

At March 31, 2023 and December 31, 2022, accounts receivable consisted of the following:

	March 31, 2023	December 31, 2022
Accounts receivable	\$ 188,527	\$ 182,936
Less: Allowance for doubtful accounts	(2,397)	-
Total	\$ 186,130	\$ 182,936

	March 31, 2023
Cumulative effect of change in accounting principle under ASC 2016-13, before tax, as of December 31, 2022	\$ (2,099)
Bad debt expense	(298)
Allowance for doubtful accounts, before tax, as of March 31, 2023	\$ (2,397)

The \$3.2 million increase in accounts receivable for the first three months of 2023 corresponds to a \$34.3 million decrease in revenue for the same period.

The Company reviews accounts receivable on a periodic basis and makes general allowances based on an aging profile of its outstanding balances, and specific allowances when there is doubt as to the collectability of individual balances by considering factors such as the age of the balance, a customer payment history and credit worthiness, and current economic trends. As a result of the Company's adoption of ASU 2016-13 as of January 1, 2023 (Note 2), the Company recorded an allowance for doubtful accounts as of March 31, 2023, as compared to no allowance for doubtful account as of December 31, 2022.

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NOTE 5 – INVENTORIES

At March 31, 2023 and December 31, 2022, inventories consisted of the following:

	March 31, 2023	December 31, 2022
Raw materials	\$ 203,176	\$ 167,135
Work-in-process	74,440	79,126
Finished goods	195,683	146,911
Total inventory	<u>\$ 473,299</u>	<u>\$ 393,172</u>

Inventories are stated at the lower of cost or net realizable value on a moving weighted average basis. At March 31, 2023 and December 31, 2022, the value of finished goods inventory of which were first-tools at customer physical locations for which customers were contractually obligated to take ownership upon acceptance totaled \$134,119 and \$123,169, respectively.

The \$31.4 million increase in raw materials and work-in-process inventory at March 31, 2023 compared to December 31, 2022 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 \$48.8 million increase in finished goods inventory at March 31, 2023 compared to December 31, 2022 reflects an increase in completed tools not yet shipped to the customer, and 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, or for which similar materials have not been used for more than six months. 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 months ended March 31, 2023 and 2022, inventory write-downs of \$306 and \$611 were recognized in cost of revenue, respectively.

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NOTE 6 – PROPERTY, PLANT AND EQUIPMENT, NET

At March 31, 2023 and December 31, 2022, property, plant and equipment consisted of the following:

	March 31, 2023	December 31, 2022
Buildings and plants	\$ 86,995	\$ 35,864
Manufacturing equipment	15,496	9,298
Office equipment	3,861	3,691
Transportation equipment	413	407
Leasehold improvement	7,558	7,173
Total cost	114,323	56,433
Less: Total accumulated depreciation and amortization	(11,697)	(10,047)
Construction in progress	47,278	36,489
Total property, plant and equipment, net	<u>\$ 149,904</u>	<u>\$ 82,875</u>

Depreciation and amortization expense for the three months ended March 31, 2023 and 2022 was \$1,714 and \$1,213, respectively. Buildings and plants represent Lingang housing property that was transferred to ACM Lingang 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) and which are pledged as security for loans from China Merchants Bank (Note 12), and facilities for the new headquarters of ACM Shanghai that were transferred to ACM Lingang at a fair value of \$49,453 in February 2023 (Note 8).

Construction in progress primarily reflects costs incurred related to the construction of ACM Shanghai's Lingang facilities.

NOTE 7 – LAND USE RIGHT, NET

A summary of land use right is as follows:

	March 31, 2023	December 31, 2022
Land use right purchase amount	\$ 9,271	\$ 9,149
Less: accumulated amortization	(510)	(457)
Land use right, net	<u>\$ 8,761</u>	<u>\$ 8,692</u>

In 2020, ACM Shanghai, through its wholly-owned subsidiary ACM Lingang, entered into an agreement for a 50-year land use right in the Lingang region of Shanghai. In July 2020, ACM Lingang 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 March 31, 2023 and 2022 was \$50 and \$50, respectively.

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

Year ending December 31,	
remainder of 2023	\$ 139
2024	186
2025	186
2026	186
2027 and thereafter	8,064
Total	\$ 8,761

NOTE 8 – OTHER LONG-TERM ASSETS

At March 31, 2023 and December 31, 2022, other long-term assets consisted of the following:

	March 31, 2023	December 31, 2022
Prepayment for property, plant and equipment and other non-current assets	\$ 859	\$ 704
Prepayment for property - lease deposit	467	393
Security deposit for land use right	717	708
Prepayment for property - Zhangjiang New Building	—	47,251
Others	1,436	1,209
Total other long-term assets	\$ 3,479	\$ 50,265

Prepayment for property - Zhangjiang New Building is for the new corporate headquarters of ACM Shanghai. Pursuant to contractual agreements, ownership of Zhangjiang New Building was transferred to ACM Lingang in February 2023 at a fair value of \$49,453. Subsequent to the transfer of ownership, Prepayment for property - Zhangjiang New Building was re-classified to property, plant and equipment (Note 6).

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NOTE 9 – SHORT-TERM BORROWINGS

At March 31, 2023 and December 31, 2022, short-term borrowings consisted of the following:

	March 31, 2023	December 31, 2022
Line of credit up to RMB 150,000 from China Everbright Bank,		
1)due on August 17, 2023 with an annual interest rate of 3.40%	\$ 8,730	\$ 8,616
2)due on September 1, 2023 with an annual interest rate of 3.60%	8,730	8,616
3)due on December 16, 2023 with an annual interest rate of 3.00%	4,365	4,308
Line of credit up to RMB 100,000 from Bank of Communications,		
1)due on August 11, 2023 with an annual interest rate of 3.60%	8,730	8,616
2)due on September 5, 2023 with an annual interest rate of 3.50%	5,820	5,744
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%.	5,820	5,744
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%.	1,310	1,292
2)due on July 27, 2023 with an annual interest rate of 3.50%.	1,310	1,292
3)due on August 1, 2023 with an annual interest rate of 3.50%.	1,310	1,292
4)due on August 3, 2023 with an annual interest rate of 3.50%.	1,310	1,292
5)due on August 7, 2023 with an annual interest rate of 3.50%.	1,310	1,293
6)due on August 14, 2023 with an annual interest rate of 3.50%.	1,310	1,293
7)due on August 15, 2023 with an annual interest rate of 3.50%.	1,309	1,293
8)due on August 21, 2023 with an annual interest rate of 3.50%.	1,018	1,005
9)due on August 28, 2023 with an annual interest rate of 3.50%.	1,309	1,292
10)due on September 13, 2023 with an annual interest rate of 3.50%.	1,309	1,292
11)due on September 20, 2023 with an annual interest rate of 3.50%.	1,309	1,293
12)due on September 29, 2023 with an annual interest rate of 3.50%.	436	431
Total	\$ 56,745	\$ 56,004

For the three months ended March 31, 2023 and 2022, interest expense related to short-term borrowings amounted to \$490 and \$63, respectively.

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NOTE 10 – OTHER PAYABLES AND ACCRUED EXPENSES

At March 31, 2023 and December 31, 2022, other payables and accrued expenses consisted of the following:

	March 31, 2023	December 31, 2022
Accrued commissions	\$15,557	\$ 14,890
Accrued warranty	9,240	8,780
Accrued payroll	13,159	12,201
Accrued professional fees	785	724
Accrued machine testing fees	912	1,215
Accrued machine sales fees	5,879	5,874
Others	7,434	8,517
Total	\$52,966	\$ 52,201

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 March 31,	
	2023	2022
Operating lease cost	\$ 488	\$ 647
Short-term lease cost	282	175
Lease cost	\$ 770	\$ 822

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

	Three Months Ended March 31,	
	2023	2022
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash outflow from operating leases	\$ 770	\$ 822

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As of March 31, 2023, maturities of outstanding lease liabilities for all operating leases were as follows:

	December 31,
remainder of 2023	\$ 2,474
2024	2,485
2025	1,030
2026	982
2027	981
2028	42
Total lease payments	\$ 7,994
Less: Interest	(586)
Present value of lease liabilities	\$ 7,408

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

	March 31, 2023	December 31, 2022
Remaining lease term and discount rate:		
Weighted average remaining lease term (years)	3.42	2.00
Weighted average discount rate	3.69 %	4.25 %

NOTE 12 – LONG-TERM BORROWINGS

At March 31, 2023 and December 31, 2022, long-term borrowings consisted of the following:

	March 31, 2023	December 31, 2022
Loan from China Merchants Bank	\$ 15,049	\$ 15,265
Loans from Bank of China	5,565	5,744
Less: Current portion	(2,369)	(2,322)
	\$ 18,245	\$ 18,687

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 4.65%. The loan is pledged by the property of ACM Lingang and guaranteed by ACM Shanghai. The housing property was transferred to ACM Lingang in January 2022 (Note 6).

Scheduled principal payments for the outstanding long-term loan as of March 31, 2023 are as follows:

Year ending December 31	
2023	\$ 1,680
2024	6,931
2025	1,837
2026	1,911
2027	1,988
Thereafter	6,267
	\$ 20,614

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For the three months ended March 31, 2023 and 2022, respectively, interest related to long-term borrowings of \$189 and \$258 was incurred, of which \$189 and \$198 was charged to interest expenses and \$0 and \$60 was capitalized as property, plant and equipment and other long-term assets, respectively.

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. At March 31, 2023 and December 31, 2022, other long-term liabilities consisted of the following unearned government subsidies:

	March 31, 2023	December 31, 2022
Subsidies to Stress Free Polishing project, commenced in 2008 and 2017	\$ 585	\$ 611
Subsidies to Electro Copper Plating project, commenced in 2014	114	119
Subsidies to other cleaning tools, commenced in 2020	760	785
Subsidies to SW Lingang R&D development, commenced in 2021	4,218	4,266
Subsidies to CO2 Technology, commenced in 2022	796	965
Other	722	575
Total	\$ 7,195	\$ 7,321

NOTE 14 – LONG-TERM INVESTMENTS

Equity investee:	Initial investment dates	Investment entity	Percent ownership by ACM and subsidiaries	Investment purchase price
Ninebell Co., Ltd. ("Ninebell")	September 2017	ACM	20%	\$ 1,200
Wool Flucon Co., ("Wool")	August 2022	ACM Singapore	20%	\$ 1,000
Shengyi Semiconductor Technology Co., Ltd. ("Shengyi")	June 2019	ACM Shanghai	15%	\$ 109
Hefei Shixi Chanheng Integrated Circuit Industry Venture Capital Fund Partnership (LP) ("Hefei Shixi")	September 2019	ACM Shanghai	10%	RMB 30,000 (\$4,200)
Waferworks (Shanghai) Co., Ltd ("Waferworks")	October 2021	ACM Shanghai	0.25%	\$ 1,568

The Company treats each equity investment in the consolidated financial statements under the equity method and they are classified as long-term investments, except for the investment in Waferworks which is measured at cost minus impairment, if any, as there is no readily determinable fair value. 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

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that the investments were not impaired and did not record any impairment charges related to the investments for any prior periods.

	March 31, 2023	December 31, 2022
Equity investee:		
Ninebell	\$ 3,974	\$ 5,199
Wool	1,015	1,011
Shengyi	1,354	1,168
Hefei Shixi	8,739	8,645
Subtotal	15,082	16,023
Other investee:		
Waferworks	1,455	1,436
Other	728	—
Total	\$ 17,265	\$ 17,459

For the three months ended March 31, 2023 and 2022, the Company's share of equity investees' net loss was \$32 and \$71 for the three months ended March 31, 2023 and 2022, respectively, which amounts were included in equity loss in net loss of affiliates in the accompanying condensed consolidated statements of operations and comprehensive income (loss).

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 acquired shares of SMIC in July 2020. As SMIC was listed on the STAR Market, 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 March 31, 2023 and December 31, 2022.

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 RMB 160 million (\$22,160) to the fund, of which ACM Shanghai contributed RMB 30 million (\$4,196), or 18.75% of the contribution on September 27, 2022.

In December 2022, the Nuode Asset Fund purchased shares in the secondary stock offering of a publicly traded PRC-stock listing. The number of shares owned by Nuode Asset Fund was apportioned to all of the limited partners in proportion to their respective capital contributions (18.75% in the case of ACM Shanghai). All of the shares acquired by Nuode Asset fund are subject, under applicable Chinese laws, to lock-up restrictions that prevent sales of the shares for six months after the shares were acquired. ACM Shanghai's investment is accounted for as trading securities and is stated at fair market value. At March 31, 2023, the fair market value is classified as Level 2 of the hierarchy established under ASC 820 with valuations based on quoted prices for identical securities in active markets, less a discount applied to reflect the remaining lock-up period.

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At March 31, 2023 and December 31, 2022, the components of trading securities were as follows:

	March 31, 2023	December 31, 2022
Trading securities listed in Shanghai Stock Exchange		
Cost	\$ 7,883	\$ 14,779
Market value	12,733	20,209

	Three Months Ended March 31,	
	2023	2022
Unrealized loss on trading securities	\$ (654)	\$ (3,858)

For the three months ended March 31, 2023, the Company received \$11,072 in proceeds from the sale of trading securities, including a realized gain of \$3,994.

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.

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

Advances to related party	March 31, 2023	December 31, 2022
Ninebell	\$ 2,306	\$ 3,322

Accounts payable	March 31, 2023	December 31, 2022
Ninebell	\$ 14,161	\$ 10,526
Shengyi	4,193	3,942
Total	\$ 18,354	\$ 14,468

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Purchase of materials	Three Months Ended March 31,	
	2023	2022
Ninebell	\$ 16,397	\$ 7,379
Shengyi	1,973	585
Total	\$ 18,370	\$ 7,964

Service fee charged by	Three Months Ended March 31,	
	2023	2022
Shengyi	\$ 278	\$ 34

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 March 31, 2023, ACM issued 163,069 shares of Class A common stock upon option exercises by employees and non-employees.

During the three months ended March 31, 2022, ACM issued 425,349 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.

At March 31, 2023 and December 31, 2022, the number of shares of Class A common stock issued and outstanding was 54,818,355 and 54,655,286, respectively.

At March 31, 2023 and December 31, 2022, the number of shares of Class B common stock issued and outstanding was 5,021,811 and 5,021,811, respectively.

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 a 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 a market based condition is estimated at the date of grant using the Monte Carlo simulation model.

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

	Three Months Ended March 31,	
	2023	2022
Stock-Based Compensation Expense:		
Cost of revenue	\$ 125	\$ 113
Sales and marketing expense	431	354
Research and development expense	701	411
General and administrative expense	811	496
	<u>\$ 2,068</u>	<u>\$ 1,374</u>

	Three Months Ended March 31,	
	2023	2022
Stock-based compensation expense by type:		
Employee stock option plan	\$ 2,018	\$ 1,273
Non-employee stock option plan	11	11
Subsidiary stock option plan	39	90
	<u>\$ 2,068</u>	<u>\$ 1,374</u>

Employee Awards

The following table summarizes the Company's employee share option activities during the three months ended March 31, 2023:

	Number of Option Shares (1)	Weighted Average Grant Date Fair Value	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term
Outstanding at December 31, 2022	9,211,641	\$ 3.58	\$ 8.24	6.36 years
Granted	24,000	6.54	11.85	
Exercised	(72,678)	1.25	3.24	
Forfeited/cancelled	(16,967)	11.40	24.68	
Outstanding at March 31, 2023	9,145,996	\$ 3.52	\$ 8.10	5.84 years
Vested and exercisable at March 31, 2023	6,475,599			

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

As of March 31, 2023 and December 31, 2022, \$13,962 and \$16,009, 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 1.29 years and 1.53 years, respectively. Total recognized compensation cost may be adjusted for future changes in estimated forfeitures.

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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:

	Three Months Ended March 31, 2023 (6)	Years ended December 31, 2022
Fair value of share of common stock (1)	\$11.85	\$16.83-\$25.45
Expected term in years(2)	6.25	5.50-6.25
Volatility(3)	52%	49.43%-50.87%
Risk-free interest rate(4)	4%	1.7%-3.04%
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 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 three months ended March 31, 2023:

	Number of Option Shares (1)	Weighted Average Grant Date Fair Value	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term
Outstanding at December 31, 2022	1,483,658	\$ 0.38	\$ 1.15	3.68 years
Exercised	(90,391)	0.23	0.54	
Forfeited/cancelled	(4,663)	0.22	0.50	
Outstanding at March 31, 2023	1,388,604	\$ 0.39	\$ 1.19	3.24 years
Vested and exercisable at March 31, 2023	1,373,604			

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

As of March 31, 2023 and December 31, 2022, \$44 and \$55, 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 0.04 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

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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 three months ended March 31, 2023:

	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, 2022	5,377,500	\$ 0.23	\$ 1.93	1.76 years
Outstanding at March 31, 2023	5,377,500	\$ 0.23	\$ 1.90	1.26 years
Vested and exercisable at March 31, 2023	2,688,750			

During the three months ended March 31, 2023 and 2022, the Company recognized stock-based compensation expense of \$2,068 and \$1,374, respectively, and during the three months ended March 31, 2023 and 2022, the Company recognized stock-based compensation expense of \$39 and \$90, respectively, related to stock option grants of ACM Shanghai.

As of March 31, 2023 and December 31, 2022, \$118 and \$160, 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 0.4 years and 0.8 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.

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.

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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 15% to 25% for Chinese income tax purposes due to the effects of the valuation allowance and certain permanent differences from book-tax differences, including stock based compensation, deemed dividend income under Subchapter F of the Internal Revenue Code (Subpart F), and global intangible low-taxed income (GILTI) inclusions, and R&D superdeduction. As a result, the Company recorded income tax benefit (expense) of \$(2,879) and \$4,011 during the three months ended March 31, 2023 and 2022, respectively. The decrease in the Company's effective income tax rate for the three months ended March 31, 2023 compared to the same period of the prior year was primarily due to an increased benefit from the specified deduction to the GILTI inclusion as a result of reduced net operating loss utilization which partially limited the specified deduction in the prior year, and reduced GILTI inclusion related to the amount of capitalized R&D expenses relative to pre-tax income.

Under the change in Section 174 made by the Tax Cuts and Jobs Act of 2017 (the "TCJA") which became effective on January 1, 2022, 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 results 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.

The Company had total unrecognized tax benefits of \$8,448 as of both March 31, 2023 and December 31, 2022. The significant increase in 2022 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 well as the uncertainty in the amount of capitalized R&D expenses that would increase GILTI inclusion. If recognized, the net impact to effective rate, after indirect offset, would be \$6,066. The Company will recognize interest and penalties, when they occur, related to uncertain tax provisions as a component of tax expense. For the three months ended March 31, 2023 and 2022, \$284 and \$71 of interest or penalties was recognized, respectively.

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, 2001 through December 31, 2022. 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 four PRC subsidiaries, ACM Shanghai, ACM Wuxi, ACM Beijing and ACM Lingang, are liable for PRC corporate income taxes at the rates of 15%, 25%, 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 was entitled to a preferential income tax rate of 12.5% from January 1, 2020 to December 31, 2022.

Income tax benefit (expense) was as follows:

	Three Months Ended March 31,	
	2023	2022
Total income tax benefit (expense)	\$ (2,879)	\$ 4,011

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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 March 31, 2023, the Company had \$95,378 of open capital commitments.

Covenants in Lingang'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 Lingang 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 March 31, 2023 and December 31, 2022, the Company had paid in total \$46,651 and \$35,376, 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 March 31, 2023 or December 31, 2022. In the opinion of management, no provision for liability nor disclosure was required as of March 31, 2023 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 March 31, 2023, the Company had no outstanding legal proceedings.

NOTE 21 – SEGMENT INFORMATION

The Company is engaged in the development, manufacture and sale of single-wafer wet cleaning equipment, which have been organized as one reporting segment as the equipment has substantially similar nature and economic characteristics. The Company's principal operating decision maker, ACM's Chief Executive Officer, receives and reviews the results of the operations for all major type of equipment as a whole when making decisions about allocating resources and assessing performance of the Company.

For geographical reporting, revenue by geographic location is determined by the location of customers' facilities to which products were shipped. Long-lived assets consist primarily of property, plant and equipment, other long-term assets, and right-of-use assets and are attributed to the geographic location in which they are located.

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The balance of selected long-lived assets by geography as of March 31, 2023 and December 31, 2022 are presented in the following table:

	<u>March 31,</u> <u>2023</u>	<u>December 31,</u> <u>2022</u>
Long-lived assets by geography:		
Mainland China	\$ 156,720	\$ 140,481
South Korea	12,832	3,830
United States	—	10
Total	\$ 169,552	\$ 144,321

NOTE 22 – STATUTORY SURPLUS RESERVE

In accordance with the PRC’s Foreign Enterprise Law, ACM Shanghai, ACM Lingang, 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 was \$16,881 as of both March 31, 2023 and December 31, 2022, and is 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, 2022, 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, as well as those discussed below and elsewhere in this report, particularly in the section titled “Item 1A – Risk Factors” in Part II below.

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.

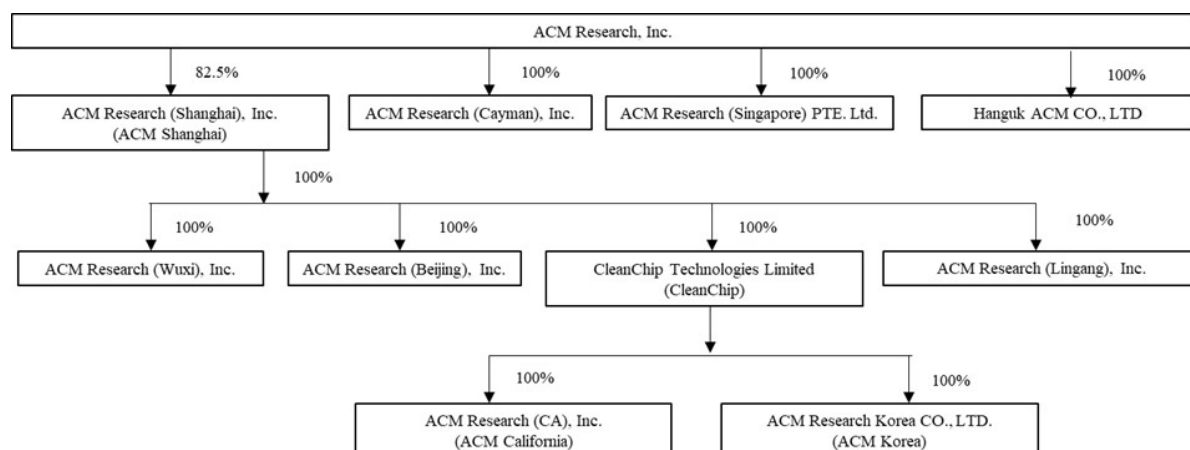
ACM Research is not a PRC operating company, and we do not conduct our operations in the PRC through the use of a variable interest entity, or VIE, or any other structure designed for the purpose of avoiding PRC legal restrictions on direct foreign investments in PRC-based companies. ACM Research has 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 “Item 1A. Risk Factors—Risks Related to International Aspects of Our Business—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” in our Annual Report.

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.

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, which could decline in value or become worthless.

The following chart depicts our corporate organization as of March 31, 2023:



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.

The U.S. Holding Foreign Companies Accountable Act, or the HFCA Act, requires that the Public Company Accounting Oversight Board, or 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 any non-U.S. jurisdiction. BDO China Shu Lun Pan Certified Public Accountants LLP, or BDO China, had been our independent registered public accounting firm in recent years, including for the year ended December 31, 2021. On June 22, 2021, the U.S. Senate passed the Accelerating Holding Foreign Companies Accountable Act, which was enacted on December 29, 2022 under the Consolidated Appropriations Act, 2023, as further described below. 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 “Item 1A. Risk Factors—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 prior audit firm, operating in the PRC” in our Annual Report for more information. Under current regulations, if ACM Research were to be included on this list for two consecutive years due to our independent auditor being located in a jurisdiction that does not allow for PCAOB inspections, the SEC would prohibit trading in our securities and this ultimately could cause our securities to be delisted in the U.S., and their value may significantly decline or become worthless.

On December 15, 2022, the PCAOB announced that it was able to secure complete access to inspect and investigate PCAOB-registered public accounting firms headquartered in the PRC and Hong Kong in 2022 and vacated its previous December 16, 2021 determination to the contrary. However, whether the PCAOB will continue to be able to satisfactorily conduct inspections of PCAOB-registered public accounting firms headquartered in the PRC and Hong Kong is subject to uncertainty and depends on a number of factors out of our, and our auditor’s, control. PRC authorities will need to ensure that the PCAOB continues to have full access for inspections and investigations in 2023 and beyond. Each year, the PCAOB will determine whether it can inspect and investigate completely audit firms in the PRC and Hong Kong, among other jurisdictions. If the PRC authorities do not allow the PCAOB complete access for inspections and investigations for two consecutive years, the SEC would prohibit trading in the securities of issuers engaging those audit firms, as required under the HFCA Act. Further, on December 29, 2022, the Consolidated Appropriations Act, 2023, was signed into law by U.S. President Biden, which, among other things, amended the HFCA Act to reduce the number of consecutive non-inspection years that would trigger the trading prohibition under the HFCA Act from three years to two years (originally such threshold under the HFCA Act was three consecutive years), and so that any foreign jurisdiction could be the reason why the PCAOB does not have complete access to inspect or investigate a company’s public accounting firm (originally

the HFCA Act only applied if the PCAOB's ability to inspect or investigate was due to a position taken by an authority in the jurisdiction where the relevant public accounting firm was located).

In addition, on June 30, 2022, stockholders of ACM Research ratified the appointment of Armanino LLP as our independent auditor for the year ended December 31, 2022. Armanino LLP is neither headquartered in the PRC or Hong Kong nor was it subject to the determinations announced by the PCAOB on December 16, 2021, which determinations were vacated by the PCAOB on December 15, 2022, and we do not believe ACM Research will appear on the "Conclusive list of issuers identified under the HFCAA" 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 "Item 1A. Risk Factors" in our Annual Report, 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 "Item 1A. Risk Factors —Risks Related to International Aspects of Our Business" in our Annual Report for more information.

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.
- In 2022 we added two major new product categories with the launch of the *Ultra Pmax™* PECVD tool, which is equipped with a proprietary designed chamber, gas distribution unit and chuck, and is intended to provide better film uniformity, reduced film stress, and improved particle performance, and the introduction of the *Ultra Track* tool, a 300mm process tool that delivers uniform air downflow, fast robot handling and customizable software to address specific customer requirements, and has multiple features that enhance performance including a reduction in defects, increased, throughput, and reduced cost of ownership.

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.*, or ACM Wuxi, 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.*, referred to by the English name ACM Research (Lingang), or ACM Lingang, 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.*, or 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.

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 second half of 2023.
- 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.

- In February 2023, ACM Shanghai completed the purchase of several buildings in Zhangjiang region of Shanghai to be used as its future headquarters.
- In March 2023, Hanguk ACM CO., LTD purchased land in South Korea as the potential site for construction of a R&D center and production facility.

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 \$56.4 million, or 75.9% of total revenue, for the three months ended March 31, 2023, as compared to \$31.7 million, or 75.1% of total revenue, for the same period in 2022. 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, SMIC, Shanghai SK Hynix Inc., YMTC and ChangXin Memory Technologies.

Revenue from advanced packaging, other back-end processing tools, services and spares totaled \$17.9 million, or 24.1% of total revenue, for the three months ended March 31, 2023, as compared to \$10.5 million, or 24.9% of total revenue, for the same period in 2022. 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; 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 10.7% from \$88.1 billion in 2021 to \$97.5 billion in 2022, and is also expected to increase by 10.7% to \$97.5 billion in 2023.

Since 2009 we have delivered more than 410 wet-cleaning and other front-end processing tools, more than 310 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 March 31, 2023, 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. and global services team.

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," in our Annual Report.

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, which are referred to as zero-COVID policies. 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 in 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 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 points 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 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. The effects of the PRC restrictions continued for several months, with a gradual return of PRC operations, production capacity, and global logistics as Shanghai and other areas in the PRC began to reopen. We cannot assure you 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 the future 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.

In December 2022, the PRC government relaxed its zero-COVID policies, which resulted in large scale COVID-19 infections throughout China, including Shanghai. A significant number of ACM Shanghai employees were also infected, and in many cases missed work for one or several weeks, which caused administrative and operational challenges in late 2022 and early 2023. With the relaxation of the PRC's zero-COVID policies in December 2022, and the subsequent widespread infections of China's population, during the three months ended March 31, 2023, the Company experienced additional inefficiencies due in part to infections and the resultant absenteeism experienced by its employees and the general population of China. We cannot assure you that illnesses of ACM Shanghai employees, or of its customers, suppliers or other third parties, may not result in closures, reductions of PRC operations or production, or additional administrative inefficiencies in the upcoming months or quarters.

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 U.S. employees, other than certain of our executive officers being delayed in traveling between the PRC, our California office, and other global locations, and a significant number of ACM Shanghai employees missing work in late 2022 and early 2023 for one or several weeks due to COVID-19 related illness following relaxation of the PRC's zero-COVID policies in December 2022.

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.

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 Lingang 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 three months ended March 31, 2023 and 2022, related government subsidies recognized as reductions of relevant expenses in the consolidated statements of operations and comprehensive income (loss) were \$0.5 million and \$0.1 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 three months ended March 31, 2023 and 2022, related government subsidies recognized as other income in the consolidated statements of operations and comprehensive income (loss) were \$78,000 and \$79,000, 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 March 31, 2023 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 March 31,	
	2023	2022
Revenue	100.0 %	100.0 %
Cost of revenue	46.2	53.3
Gross margin	53.8	46.7
Operating expenses:		
Sales and marketing	12.6	15.9
Research and development	18.9	41.1
General and administrative	10.4	11.7
Total operating expenses, net	41.9	68.7
Income (loss) from operations	11.9	(22.0)
Interest income (expense), net	1.5	3.7
Realized gain from sale of trading securities	5.4	0.0
Unrealized loss on trading securities	(0.9)	(9.1)
Other benefit (expense), net	(1.9)	0.6
Equity loss in net loss of affiliates	—	(0.2)
Income (loss) before income taxes	16.0	(27.0)
Income tax benefit (expense)	(3.9)	9.5
Net income (loss)	12.1	(17.5)
Less: Net income (loss) attributable to non-controlling interests	2.4	(3.9)
Net income (loss) attributable to ACM Research, Inc.	9.7 %	(13.6)%

Comparison of Three Months Ended March 31, 2023 and 2022
Revenue

	Three Months Ended March 31,		% Change 2023 v 2022	Absolute Change 2023 v 2022
	2023	2022		
	<i>(in thousands)</i>			
Revenue	\$ 74,256	\$ 42,186	76.0 %	\$ 32,070
Single wafer cleaning, Tahoe and semi-critical cleaning equipment	\$ 36,614	\$ 26,033	40.6 %	\$ 10,581
ECP (front-end and packaging), furnace and other technologies	26,598	12,248	117.2 %	14,350
Advanced packaging (excluding ECP), services & spares	11,044	3,905	182.8 %	7,139
Total Revenue by Product Category	\$ 74,256	\$ 42,186	76.0 %	\$ 32,070
Wet-cleaning and other front-end processing tools	\$ 56,382	\$ 31,702	77.8 %	\$ 24,680
Advanced packaging, other processing tools, services and spares	17,874	10,484	70.5 %	7,390
Total Revenue Front and Back-End	\$ 74,256	\$ 42,186	76.0 %	\$ 32,070

The increase in revenue for three months ended March 31, 2023 as compared to the same period in 2022 was driven by higher sales of single wafer cleaning, Tahoe and semi-critical cleaning equipment, increased contribution from newer ECP (front-end and packaging), furnace and other technologies, and higher sales of Advance packaging (excluding ECP), services & spares. 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 global semiconductor market. Our Shanghai operations were adversely impacted by the continuation of effects related to the cessation of China's zero-COVID policies in late 2022 that resulted in illnesses amongst our employees, customers, and the general population in China, and the continued impact from new restrictions implemented by the U.S. Department of Commerce for PRC-based semiconductor producers in October 2022 (Note 2).

Cost of Revenue and Gross Margin

	Three Months Ended March 31,		% Change 2023 v 2022	Absolute Change 2023 v 2022
	2023	2022		
	<i>(in thousands)</i>			
Cost of revenue	\$ 34,270	\$ 22,500	52.3 %	\$ 11,770
Gross profit	39,986	19,686	103.1 %	20,300
Gross margin	53.8 %	46.7 %	7.1 %	718 bps

Cost of revenue and gross profit increased in the three months ended March 31, 2023 as compared to the corresponding period in 2022 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 favorable revenue mix between tools within our product categories.

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 March 31,		% Change 2023 v 2022	Absolute Change 2023 v 2022
	2023	2022		
	<i>(in thousands)</i>			
Sales and marketing expense	\$ 9,337	\$ 6,697	39.4 %	\$ 2,640
Research and development expense	14,029	17,346	(19.1)%	(3,317)
General and administrative expense	7,758	4,949	56.8 %	2,809
Total operating expenses	\$ 31,124	\$ 28,992	7.4 %	\$ 2,132

Sales and marketing expense increased in the three months ended March 31, 2023 as compared to the corresponding period in 2022, and reflected an increase of \$2.6 million due to \$1.9 million higher costs for supplies and spare parts for promotional tools, an increase of \$1.5 million due to increased costs for personnel, commissions, outside services, travel & entertainment and other costs, offset by decrease of \$0.8 million in professional services. 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 decreased in the three months ended March 31, 2023 as compared to the corresponding period in 2022, reflecting a decrease of \$2.8 million in costs of components, costs of tools built for product development purposes, and costs of other research and development supplies, and a decrease of \$3.2 million for professional services and other R&D-related costs, offset by an increase of \$2.7 million for personnel, stock-based compensation, and travel & entertainment costs to support product development.

Research and development expense represented 18.9% and 41.1% of our revenue in the three months ended March 31, 2023 and 2022, respectively. Without reduction by grant amounts received from PRC governmental authorities (see ‘–PRC Government Research and Development Funding’), gross research and development expense totaled \$14.0 million, or 18.9% of total revenue, in the three months ended March 31, 2023 as compared to \$17.3 million, or 41.1% of revenue, in the corresponding period in 2022. 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 in the three months ended March 31, 2023 as compared to the corresponding period in 2022, primarily reflecting a \$2.2 million increase in personnel and professional services, a \$0.3 million increase in stock-based compensation, and a \$0.3 million increase in bad debt reserves. 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;
- bad debt reserve; 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.

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

	Three Months Ended March 31,		% Change 2023 v 2022	Absolute Change 2023 v 2022
	2023	2022		
	<i>(in thousands)</i>			
Interest Income	\$ 1,785	\$ 1,805	(1.1)%	\$ (20)
Interest Expense	(695)	(261)	166.3 %	(434)
Interest Income (expense), net	<u>\$ 1,090</u>	<u>\$ 1,544</u>	-29.4 %	<u>\$ (454)</u>
Other income (expense), net	\$ (1,418)	\$ 237	-698.3 %	\$ (1,655)

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. Interest income (expense), net decreased in the three months ended March 31, 2023 as compared to the corresponding period in 2022, primarily due to higher interest expense related to a higher balance of short term borrowings.

Other income (expense), net primarily reflects (a) losses recognized from the impact of exchange rates on our foreign currency-denominated working-capital transactions which were (\$1.5 million) and (\$22,000) for the three months ended March 31, 2023 and 2022, respectively and (b) depreciation of assets acquired with government subsidies, as described under “—PRC Government Research and Development Funding” above.

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

	Three Months Ended March 31,		% Change 2023 v 2022	Absolute Change 2023 v 2022
	2023	2022		
	(in thousands)			
Realized gain from sale of trading securities	\$ 3,994	\$ -	100.0 %	\$ 3,994
Unrealized loss on trading securities	\$ (654)	\$ (3,858)	(83.0)%	\$ 3,204
Equity loss in net loss of affiliates	\$ (32)	\$ (71)	(54.9)%	\$ 39

We recorded a realized gain from sale of trading securities of \$4.0 million for the three months ended March 31, 2023 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 \$0.7 million for the three months ended March 31, 2023 as compared to an unrealized loss of \$3.9 million for the same period in 2022, based on a change in market value of ACM Shanghai's indirect investments in certain publicly traded securities on China's stock markets as described in Note 15 to the condensed consolidated financial statements included in this report.

Equity loss in net loss of affiliates was substantially unchanged for the three months ended March 31, 2023 due to slightly lower net loss 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 March 31,	
	2023	2022
	(in thousands)	
Total income tax benefit (expense)	\$ (2,879)	\$ 4,011

We recognized a tax expense of \$2.9 million for the three months ended March 31, 2023 as compared to a tax benefit of \$4 million for the prior year period. The tax expense for the three months ended March 31, 2023 primarily resulted from the tax effect of a decrease in our effective income tax rate applied to an operating profit for the period. The decrease in our effective income tax rate for the three months ended March 31, 2023 compared to the same period of the prior year was primarily due to an increased benefit from the specified deduction to the GILTI inclusion as a result of reduced net operating loss utilization which partially limited the specified deduction in the prior year, and reduced GILTI inclusion related to the amount of capitalized R&D expenses relative to pre-tax income. The tax benefit in the three months ended March 31, 2022 was primarily due to a higher effective tax rate applied to a pre-tax net loss for the period.

Our effective tax rate differs from statutory rates of 21% for U.S. federal income tax purposes and 15% 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 PRC subsidiaries, ACM Shanghai, ACM Wuxi, Inc., ACM Lingang, and ACM Beijing are liable for PRC corporate income taxes at the rates of 15%, 25%, 25% 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 was entitled to a preferential income tax rate of 12.5% from January 1, 2020 to December 31, 2022.

Under the change in Section 174 made by the Tax Cuts and Jobs Act of 2017 (the “TCJA”) which became effective on January 1, 2022, 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 results 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 repeal defer the capitalization requirement to later years.

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 2001 through 2022. 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 (Loss) Attributable to Non-Controlling Interests

	Three Months Ended March 31,		% Change 2023 v 2022	Absolute Change 2023 v 2022
	2023	2022		
	<i>(in thousands)</i>			
Net income (loss) attributable to non-controlling interests	\$ 1,818	\$ (1,657)	(209.7)%	\$ 3,475

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.

Foreign currency translation adjustment

	Three Months Ended March 31,		% Change 2023 v 2022	Absolute Change 2023 v 2022
	2023	2022		
	<i>(in thousands)</i>			
Foreign currency translation adjustment	\$ 9,423	\$ 2,454	284.0 %	\$ 6,969

We recorded a foreign currency translation adjustment of \$9.4 million for the three months ended March 31, 2023, as compared to \$2.5 million for the same period in 2022, 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.

Comprehensive income (loss) attributable to non-controlling interests

	Three Months Ended March 31,		% Change 2023 v 2022	Absolute Change 2023 v 2022
	2023	2022		
	(in thousands)			
Comprehensive income (loss) attributable to non-controlling interests	\$ 3,462	\$ (1,073)	(422.6)%	\$ 4,535

Comprehensive income attributable to non-controlling interests increased by \$4.5 million for the three months ended March 31, 2023 due to change in net income generated from the non-controlling interests as impacted from foreign exchange rate fluctuations.

Liquidity and Capital Resources

During the first three months of 2023, 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 \$381.7 million at March 31, 2023, compared to \$420.9 million at December 31, 2022. The \$39.2 million decrease was primarily driven by \$30.5 million of cash used in operations, \$4.7 million, excluding net cash increase for time deposits, was used in investing activities, \$1.5 million net cash used in financing activities, a \$2.5 million net decline from the effect of exchange rate on cash, cash equivalents and restricted cash, and other items.

	March 31, 2023	December 31, 2022
	(In thousands)	
<i>Cash and cash equivalents and time deposits:</i>		
Cash and cash equivalents	\$ 260,847	\$ 248,451
Short-term time deposits	2,999	70,492
Long-term time deposits	117,855	101,956
Total	\$ 381,701	\$ 420,899

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 “—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 Factor–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 three months ended March 31, 2023 and 2022, with the exception of sales and services-related transfer-pricing payments in the ordinary course of business, 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 March 31, 2023 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. 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 in operating activities of \$30.5 million during the three months ended March 31, 2023 consisted of:

	Three Months Ended March 31,	
	2023	2022
	(In thousands)	
Net income (loss)	\$ 8,963	\$ (7,443)
Depreciation and amortization	1,714	1,213
Realized gain on trading securities	(3,994)	-
Equity income in net income of affiliates	32	71
Unrealized loss on trading securities	654	3,858
Bad debt expense	298	—
Deferred income taxes	(6,294)	(2,081)
Stock-based compensation	2,068	1,374
Net changes in operating assets and liabilities:	(33,937)	(24,721)
Net cash flow used in operating activities	\$ (30,496)	\$ (27,729)

Significant changes in operating asset and liability accounts included the following uses of cash: an increase of inventories of \$79.9 million (Note 5), and an increase of accounts receivable of \$2.5 million (Note 4). As described under “PRC Government Research and Development Funding,” ACM Shanghai has received research and development grants from local and central PRC governmental authorities. ACM Shanghai received \$78,000 payments related to such grants in the first three months of 2023, as compared to cash receipts of \$0.3 million in the same period of 2022.

The uses of cash are offset by the following significant sources of cash: an increase in advances from customers of \$25.9 million (Note 3), and an increase in accounts payable of \$13.2 million.

Cash Flow Used in Investing Activities. Net cash used in investing activities, excluding net cash increase for time deposits, for the three-months ended March 31, 2023 was \$4.7 million, primarily consisting of \$15.1 million purchase of property and intangible assets and \$0.7 million purchase of long-term investment, offset by \$11.1 million in proceeds from selling trading securities (Note 15).

Cash Flow Used in Financing Activities. Net cash used in financing activities for the three months ended March 31, 2023 was \$1.5 million, primarily consisting of \$1.7 million net repayment or short and long-term borrowings, offset by \$0.2 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:

Lender	Agreement Date	Maturity Date	Annual Interest Rate	Maximum Borrowing Amount(1)	Amount Outstanding at March 31, 2023
<i>(in thousands)</i>					
China Everbright Bank	July 2021	December 2023	3.00%~3.60%	RMB150,000	RMB150,000
				\$ 21,825	\$ 21,825
Bank of Communications	August 2022	September 2023	3.50%~3.60%	RMB100,000	RMB100,000
				\$ 14,550	\$ 14,550
Bank of China	August 2022	August 2023	3.15%	RMB40,000	RMB40,000
				\$ 5,820	\$ 5,820
China Merchants Bank	October 2021	September 2023	3.50%	RMB100,000	RMB100,000
				\$ 14,550	\$ 14,550
China Merchants Bank	November 2020	Repayable by installments and the last installments repayable in November 2030	3.95%	RMB128,500	RMB103,428
				\$ 18,697	\$ 15,049
Bank of China	June 2021	Repayable by installments and the last installments repayable in June 2024	2.60%	RMB10,000	RMB8,500
				\$ 1,455	\$ 1,237
Bank of China	September, 2021	Repayable by installments and the last installments repayable in September 2024	2.60%	RMB35,000	RMB29,750
				\$ 5,093	\$ 4,328
				\$ 81,990	\$ 77,359

(1) Converted from RMB to dollars as of March 31, 2023. 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 Lingang and guaranteed by ACM Shanghai, as described above under “—Contractual Obligations.”

Effect of exchange rate changes on cash, cash equivalents and restricted cash. The effect of exchange rate cash, and cash equivalents was (\$4.8 million) during the first three months of 2023. 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 Lingang, 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 Lingang Special Area Administration, or the Grantor. ACM Lingang 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 Lingang 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 Lingang within ten business days. If the achievement of any of the above milestones is delayed or abandoned, ACM Lingang 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 March 31, 2023 is as follows:

- ACM Lingang achieved the Construction Start Milestone and 60% of the performance deposit was refunded to ACM Shanghai in 2020.
- The Construction Completion Milestone was originally required to be met prior to January 9, 2023. Due to COVID-19 related restrictions, ACM Lingang has experienced delays and did not meet the Construction Completion Milestone. In December 2022, the deadline to meet the Construction Completion Milestone was extended until July 9, 2023. Although the extended deadline has not been reached, ACM Lingang has experienced further delays and does not expect to meet the extended deadline. ACM Lingang plans to file another request for an extension in June 2023. We cannot guarantee the new extension will be granted or that ACM Lingang will meet any extended deadline or be refunded this 20% portion of the performance deposit.

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

- If ACM Lingang fails to complete the construction pursuant to the date agreed under the Grant Agreement or any extended completion date approved by the Grantor, ACM Lingang shall pay 50% of the deposit for timely completion of construction as liquidated damages;
- If ACM Lingang 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.
- 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 Lingang.

- The Production Start Milestone was originally required to be met prior to January 9, 2024. In December 2022, due to COVID-related delays, ACM filed a request for a six-month extension, which was granted, and thus the deadline for the Production Start Milestone was extended until July 9, 2024. Although the extended deadline has not been reached, ACM Lingang has experienced further delays and does not expect to meet the extended deadline. ACM Lingang plans to file another request for an extension in June 2023. We cannot guarantee the extension will be granted, or that ACM Lingang will meet any extended deadline or be refunded this 20% portion of the performance deposit.

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

- If ACM Lingang fails to commence production pursuant to the date agreed under the Grant Agreement or any extended commencement date approved by the Grantor, ACM Lingang shall pay the total deposit for timely commencement of production as liquidated damages;
- If ACM Lingang 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 Lingang.

In addition to the milestones, covenants in the Grant Agreement require that, among other things, ACM Lingang 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 Lingang 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 Lingang 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 Lingang.

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 Lingang 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 Lingang amounted to \$95.4 million and \$102.9 million at March 31, 2023 and December 31, 2022, respectively.

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” shipment 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” shipment 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 months ended March 31, 2023 totaled \$89.2 million, as compared to \$67.0 million for the same periods in 2022. Repeat tool shipments in the three months ended March 31, 2023 totaled \$38.9 million, as compared to \$30.2 million for the same periods in 2022. First tool shipments in the three months ended March 31, 2023 totaled \$50.3 million, as compared to \$36.8 million for the same periods in 2022.

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:

	Three Months Ended March 31,			
	2023	2022	% Change 2023 v 2022	Absolute Change 2023 v 2022
	<i>(in thousands)</i>			
Adjusted EBITDA Data:				
Net income (loss)	\$ 8,963	\$ (7,443)	(220.4 %)	\$ 16,406
Interest (income), net	(1,090)	(1,544)	-29.4 %	454
Income tax expense (benefit)	2,879	(4,011)	-171.8 %	6,890
Depreciation and amortization	1,714	1,213	41.3 %	501
Bad debt expense	298	—	100.0 %	298
Stock based compensation	2,068	1,374	50.5 %	694
Unrealized loss on trading securities	654	3,858	-83.0 %	(3,204)
Adjusted EBITDA	\$ 15,486	\$ (6,553)	(336.3 %)	\$ 22,039

The \$22.0 million increase in adjusted EBITDA for the three months ended March 31, 2023 as compared to the same period in 2022 reflected a \$6.9 million impact from a change in income tax benefit (expense), a \$16.4 million increase in net income, a \$0.5 million decrease in interest income, net, a \$0.7 million increase in stock based compensation, and a \$0.5 million increase in depreciation and amortization, \$0.2 million increase in bad debt expense, partly offset by a \$3.2 million decrease in unrealized loss on trading securities.

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 “—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:

	Three Months Ended March 31,			
	2023	2022	% Change 2023 v 2022	Absolute Change 2023 v 2022
	(in thousands)			
Free Cash Flow Data:				
Net cash used in operating activities	\$ (30,494)	\$ (27,729)	10.0 %	\$ (2,765)
Purchase of property and equipment	(14,895)	(3,176)	369.0 %	(11,719)
Purchase of trading securities	(728)	—	100.0 %	(728)
Free cash flow	\$ (46,117)	\$ (30,905)	49.2 %	\$ (15,212)

The \$15.2 million decrease in free cash flow for the three months ended March 31, 2023 as compared to the same period in 2022 reflected the factors driving net cash used in operating activities, an increase of purchases of property and equipment and intangible assets and trading securities. 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:

	Three Months Ended March 31,					
	2023			2022		
	Actual (GAAP)	SBC	Adjusted (Non- GAAP)	Actual (GAAP)	SBC	Adjusted (Non-GAAP)
	<i>(in thousands)</i>					
Revenue	\$ 74,256	\$ -	\$ 74,256	\$ 42,186	\$ -	\$ 42,186
Cost of revenue	(34,270)	(125)	(34,145)	(22,500)	(113)	(22,387)
Gross profit	39,986	(125)	40,111	19,686	(113)	19,799
Operating expenses:						
Sales and marketing	(9,337)	(431)	(8,906)	(6,697)	(354)	(6,343)
Research and development	(14,029)	(701)	(13,328)	(17,346)	(411)	(16,935)
General and administrative	(7,758)	(811)	(6,947)	(4,949)	(496)	(4,453)
Income (loss) from operations	\$ 8,862	\$ (2,068)	\$ 10,930	\$ (9,306)	\$ (1,374)	\$ (7,932)

Adjusted operating income for the three months ended March 31, 2023 increased by \$18.9 million, as compared with the same period in 2022, due to a \$18.2 million increase in income from operations and a \$0.7 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 three months of 2023 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 March 31, 2023. 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, in 2021, 2022 and 2023, 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 the COVID-19 pandemic increases.

Based on that evaluation, and as a result of the material weaknesses in internal control over financial reporting described in our Annual Report, our Chief Executive Officer and Chief Financial Officer concluded that, as of March 31, 2023, our company’s disclosure controls and procedures were not 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 the 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.

Notwithstanding the material weaknesses in internal control over financial reporting described in our Annual Report, our management, including our Chief Executive Officer and Chief Financial Officer, believes that our consolidated financial statements included in this report present fairly, in all material respects, our financial position, results of operations and cash flows as of and for the periods presented, in conformity with GAAP.

Material Weaknesses in Internal Control Over Financial Reporting

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

As disclosed in our Annual Report, management identified the following material weaknesses during its assessment of internal controls over financial reporting as of December 31, 2022, and is in the process of remediating them as of March 31, 2023:

- Management did not design and maintain effective risk assessment procedures, and monitoring activities. These deficiencies were attributed to insufficient identification and assessment of risks impacting the design, implementation, and operating effectiveness of internal control over financial reporting, and insufficient evaluation and determination as to whether components of internal control were present and functioning.
- Management did not design and maintain effective information technology controls related to (a) user access controls to ensure appropriate segregation of duties and adequately restrict user and privileged access to financial applications, programs, and data to appropriate personnel, (b) computer operations controls to ensure that critical information is monitored, and data backups are authorized and monitored, (c) appropriate controls to evaluate automated controls, and (d) appropriate controls to validate the completeness and accuracy of key reports used within controls across substantially all financial statement areas.

Although these material weaknesses did not result in any material misstatement of our consolidated financial statements, there is a reasonable possibility that a material misstatement of our consolidated financial statements will not be prevented or detected on a timely basis. Accordingly, management has concluded that these control deficiencies constitute material weaknesses.

Remediation Efforts

We have begun the process of, and are focused on, designing and implementing effective internal control measures to improve our internal control over financial reporting and remediate the material weaknesses. Our internal control remediation efforts include the following:

- Continue engagement with an outside firm to assist management with (i) designing and maintaining effective risk assessment procedures and monitoring activities, (ii) reviewing our current processes, procedures, and systems and assessing the design of controls to identify opportunities to enhance the design of controls that would address relevant risks identified by management to assure the operating effectiveness of internal control over financial reporting, and (iii) enhancing and implementing protocols to retain sufficient documentary evidence of operating effectiveness of such controls.
- Continue to recruit qualified individuals for key positions within our accounting and other support functions that will further enhance internal control capabilities, allow for appropriate segregation of duties, and provide appropriate oversight and reviews.
- Complete the implementation of our new enterprise reporting software and other system integrations and establish effective general controls over these systems to ensure that our automated process level controls and information produced and maintained in our IT systems is relevant and reliable.
- Restrict and monitor user access controls to ensure appropriate segregation of duties and adequately restrict user and privileged access of applications, programs, and data to appropriate personnel, implement computer operations controls to ensure that critical information is monitored, and data backups are authorized and monitored, establish appropriate controls

to evaluate automated controls, and design and monitor appropriate controls to validate the completeness and accuracy of key reports used within controls across substantially all financial statement areas.

We are committed to ensuring that our internal controls over financial reporting are designed and operating effectively. Management believes the planned remediation will improve the effectiveness of our internal control over financial reporting. While these planned actions are subject to ongoing management evaluation and will require validation and testing of the design and operating effectiveness of internal controls over a sustained period of financial reporting cycles, we are committed to the continuous improvement of our internal control over financial reporting and will continue to diligently review our internal control over financial reporting.

Changes in Internal Control over Financial Reporting and Remediation Efforts

There were no changes in our internal control over financial reporting during the three months ended March 31, 2023 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 1A. 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. 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.

Regulatory Risks

Our ability to sell our tools to customers in the PRC has been impacted, and will likely continue to be materially and adversely impacted, by export license requirements, other regulatory changes, or other actions taken by the U.S. or other governmental agencies.

ACM Shanghai utilizes certain items subject to export controls under the U.S. Export Administration Regulations (EAR) in manufacturing and supplying its products. The EAR applies to exports of commodities, software and technology from the United States, including for use in manufacturing products outside the United States, as well as to certain products manufactured outside the United States 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 restrictions targeting the semiconductor manufacturing industry in the PRC. Many of these restrictions were imposed through licensing requirements with a presumption of denial. These types of restrictions may impact the operations of ACM Shanghai.

As part of the new regulations, BIS imposed a series of restrictions on exports of designated products and exports for specified end uses and end users in connection with the supercomputer, artificial intelligence, integrated circuit (IC) and semiconductor manufacturing sectors in the PRC. These new restrictions have impacted the procurement by ACM Shanghai of certain items from the United States, and of certain items subject to U.S. export controls from outside the

United States, for use in manufacturing its products and, depending on the details of the final implementation of these new restrictions and associated licensing policies, will likely continue to limit to an undetermined extent ACM Shanghai's ability to supply its products to certain end users and for certain end uses in the PRC.

Alongside these new restrictions, BIS has also continued to designate additional PRC entities, many involved in the semiconductor manufacturing industry, on restricted party lists under the EAR, such as the Entity List and the Unverified List. These designations impose licensing requirements for the supply of products to such entities. In most cases, any items subject to the EAR, including foreign produced products with specified U.S. content, now require an export license from BIS before they can be supplied to the newly listed PRC entities, regardless of their export classification. In December 2020, SMIC, one of the largest chip manufacturers in the PRC and one of our key customers, was one of numerous entities added to the Entity List. Challenges faced by SMIC and its key suppliers as a result of the listing have indirectly impacted SMIC's demand for, and ACM Shanghai's ability to supply, ACM Shanghai products. More recently, in October 2022, YMTC, a leading PRC memory chip company and one of our key customers, 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. In December 2022, YMTC was moved from the Unverified List to the Entity List. 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 expanded 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 the PRC. In the case of semiconductor manufacturing equipment, the new rules require an export license for the export, re-export, or transfer to or within the PRC of additional types of semiconductor manufacturing equipment, items for use in manufacturing designated types of semiconductor manufacturing equipment (along with other items subject to the EAR, for use in the development or production of ICs), and semiconductor manufacturing equipment for use at certain IC manufacturing and development facilities in the PRC. In most cases, license applications for these exports are reviewed under a presumption of denial. In addition, BIS imposed new restrictions by which U.S. persons anywhere in the world are effectively barred from engaging in certain activities related to the development and production of semiconductors at PRC fabrication facilities meeting specified criteria, even if no items subject to the EAR are involved.

ACM Shanghai has determined that several of its customers have PRC-based facilities that meet the restricted criteria, and has also determined that several of its products, and/or components, may meet the parameters of export control classification numbers, or ECCNs, affected by the restrictions. Accordingly, depending on the details of the final implementation of these new restrictions and associated licensing policies, ACM may not be able to import, or may face substantial restrictions in importing, parts from the United States or parts subject to U.S. export controls from outside the United States to support tool shipments to such facilities, or to be embedded into tools defined by affected ECCNs. ACM and ACM Shanghai have implemented modifications to their existing business policies and practices in response to the new restrictions, including by imposing limitations on the activities of their U.S. persons and undertaking measures in connection with their supply chains more broadly to comply with the new regulations.

We believe that as a result of the new restrictions, several ACM Shanghai customers have significantly reduced production and related capital spending at facilities meeting the restricted advanced node capabilities. In addition, ACM Shanghai has experienced challenges as the companies in its supply chain adapt their policies to the new regulations. These factors had an adverse impact on ACM Shanghai's shipments and sales in the three months ended December 31, 2022 and March 31, 2023. We anticipate these factors will continue to have an adverse impact on ACM Shanghai's shipments and sales in future periods.

We cannot be certain what additional actions the U.S. government may take with respect to PRC entities, or whether such actions will impact our relationships with our PRC-based customers. Additional actions could take the form of further revisions to the Entity List or Unverified List, new export restrictions, additional tariffs or other trade restrictions. It is also possible that other countries could adopt similar semiconductor-focused export controls to align with the October 2022 U.S. actions.

During the three months ended March 31, 2023, two prominent exporters of advanced semiconductor manufacturing equipment, the Netherlands and Japan, announced plans to join the United States in imposing semiconductor-focused export controls. ACM Shanghai currently procures certain items from the Netherlands and Japan that may be impacted by

such controls. Accordingly, the ability of ACM Shanghai to acquire such parts from Japan and the Netherlands to fulfill customer requirements, and the ability of ACM Shanghai's customers in the PRC to scale their production. could be further negatively impacted by these additional controls. The introduction of any further multilateral semiconductor-focused export controls could, of course, further negatively impact ACM Shanghai's supply arrangements. The United States reportedly also is considering additional export controls measures, which could be imposed on items, technologies, or software that are relevant to our business and future growth.

We are unable to predict the duration of the restrictions imposed by the U.S. government, Japan and the Netherlands or the effects of any future governmental actions by the U.S., Japan, the Netherlands or other countries 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

During the three months ended March 31, 2023, ACM Research issued, pursuant to the exercise of stock options at a per share exercise price of \$0.50 per share, an aggregate of 88,391 shares of Class A common stock that were not registered under the Securities Act of 1933, as amended. We believe the offer and sale of those shares were exempt from registration under the Securities Act of 1933, as amended, 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)
January 3, 2023	25,975
March 3, 2023	26,420
March 9, 2023	35,996
Total	88,391

Item 3. Default Upon Senior Securities

None

Item 4. Mine Safety Disclosures

None

Item 5. Other Information

None

Item 6. Exhibits

The following exhibits are filed as part of this report:

Exhibit No.	Description
10.01 +‡	Employment Agreement dated September 25, 2022 between ACM Research (Shanghai), Inc. and Lisa Feng
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)
+	Indicates management contract or compensatory plan.
‡	Certain information in this exhibit was omitted by means of redacting a portion of the text and replacing it with [***].

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: May 9, 2023

ACM RESEARCH, INC.

By: /s/ Mark McKechnie

Mark McKechnie

Chief Financial Officer, Executive Vice President and
Treasurer

(Principal Financial Officer)

EMPLOYMENT AGREEMENT
Party A: ACM Research (Shanghai), Inc.
(Hereinafter: "the Company")
Party B: (Hereinafter: "the Employee")
Lisa Feng
Mr/Ms: Lisa Feng

Detailed employee information is to be filled in on the signature page

This Employment Agreement (this "Agreement") is entered into at Build 4, No.1690 Cai Lun Road, Zhangjiang High-Tech Park, Shanghai on 2022/9/25 in the People's Republic of China ("PRC") signed by the following two parties:

COMPANY: ACM Research (Shanghai) Inc.

And

EMPLOYEE: Name of Employee: Lisa Feng

ID Number: [***]

Identification Address: /

Residential address: [***]

This company and the aforementioned individual shall bilaterally and unanimously reach an agreement on the undertakings, terms and conditions to sign the agreement as follows:

1. GENERAL PROVISIONS

This Agreement is based on equality, willingness and mutual agreement in accordance with *Labor Law of People's Republic of China*, *Labor Contract Law of People's Republic of China* and relevant laws, administrative regulations as well as the actual situation in the Company.

This Agreement is entered into between the Employee and the Company and only comes into effect when this Agreement is signed by both parties.

1. TERM (Termination during probationary period, renewal, and termination) Term

This Agreement is a fixed-term agreement, effective as of 2022/9/25 and shall end on 2025/9/24, unless this agreement is terminated either during the probationary period or in accordance with the company's relevant policies, rules and regulations.

Renewal and Termination

This Agreement renewal and termination will be under the labor law and with the unanimous consent of both parties; however, a written agreement must be agreed upon at least thirty (30) to ninety (90) days in advance of the end of employment.

1. Employee Obligation & Responsibility Scope of Work

The Employee shall be employed as the Company's Chief Financial Officer, and shall have such duties as are commensurate with this position and any related duties now or hereafter assigned to the Employee by the Company.

Observing the Laws and Rules

The Employee must abide by the Company's rules, regulations, and practices as they may be adapted or modified from time-to-time by the Company, including without limitation the rules contained in the Company's Employee Handbook (the "Employee Handbook"). The Employee acknowledges and agrees that performing the duties outlined herein in accordance with industry standards and in a high quality and professional manner is essential to protecting the Company's brand image.

The Employee Handbook will become binding to the Employee when the employment commences. Changes or supplements in the Employee Handbook will be done by Human Resource in collaboration with the management according to the applicable laws and regulations, and officially notify to all employees.

Work Hours

The Employee's normal work hours shall be **eight (8)** hours each day, (excluding one hour for lunch break), five (5) days per week, Monday to Friday, for a total of forty (40) working hours per week. The Employee shall work on a shift basis or other non-standard work hours system, if so required by the Company.

Paid Annual Leave

The Company shall grant Employee **Fifteen (15)** days of totally paid annual leave per calendar year, in addition to the legal public holidays of the PRC. Employee's paid vacation days shall be taken at such time or times as may be approved by the Company, pro-rated for any partial calendar year of employment. Further comment upon rules and regulations regarding holiday affairs are illustrated in the Employee Handbook.

Labor Protection

The company dedicates to provide a safe and comfortable working environment for its employees. The Company adopts necessary measures and regulations to ensure the Employee has a safe work environment. The Employee should obey the regulation or any rules issued by the company to keep themselves safe.

1. REMUNERATION AND BENEFITS

Salary

The salary together with subsidies, if any, of the Employee during the term of this Agreement shall be according to the salary adjustment record, the salary including the monthly allowance for lunch allowance and the traffic allowance **before tax**.

The salary of the present month shall be paid at the 30th to the bank accounts of the Employee established by the Company.

Salary amount is strictly confidential and shall be discussed only between the H.R. Department and the Employee or between the direct manager and the Employee.

Performance-related Bonus

The Employee will receive a bonus based on personal performance and company status and the company annual bonus plan approved by the top management in the company. Normally, the bonus review will be handled by the company, and the bonus will be issued before the Chinese New Year.

Only upon fulfillment of the following three conditions, the performance bonus under this article may be granted: (1) the Employee achieves the target stipulated by the Company and achieves the work target setup by his/her supervisors; (2) the Employee is still under employment with the Company when granting the bonus or the employee is continuously worked in a calendar year from Jan. 1st to Dec. 31st; and (3) the Employee has not violated the relevant rules and regulations of the Company nor damaged the Company assets.

Tax Payment

The Employee shall be personally responsible for the individual income tax and any other charges or taxes, if any, associated with the remuneration. The Company will pay salary and remuneration, if any, directly to Employee, after deducting any amount required to be withheld by the Company, acting as the legally obligatory withholder, as individual income tax or otherwise in accordance with applicable law.

Chinese nationals or employees holding a Chinese passport will receive a tax certificate once a year. Employees whose yearly income exceeds one hundred twenty thousand RMB (RMB120,000.00) will be personally responsible for his/her personal tax claim.

Insurance and Welfare

The Company provides the statutory social insurance to the Employee, and additional commercial insurance to match up the daily requirement to the Employee. The detailed policy is listed in the Employee Handbook.

1. EMPLOYEE'S GENERAL OBLIGATIONS

Management of Files

The Employee will separately file work related files as well as collecting any and all documents produced during the performance of duties, projects, tasks and/or other obligations due; the loss deletion or damage of any document is strictly prohibited and will be deemed as a serious breach of this Agreement and the Employee concerned may not be eligible for the performance bonus under Article 4 of this Agreement.

No Other Work and Other Association

During the term of this Agreement, the Employee shall only assume post of and work for the Company. The Employee is not allowed to undertake any other business or professional activity similar or unsimilar to the duties of the Employee, including employment, provide labor service and/or consultation without permission by the Company either directly or indirectly, independently or in association with others.

Confidential Information

Without the prior written approval of the Company, the Employee shall not, during the term or at any time thereafter, disclose to any unauthorized person (including his/her relatives), or use for the Employee's personal benefit or otherwise any information, knowledge, or data which the Employee receives or develops during the term and that which is confidential, including, but not limited to information contained in business processes, business plan, customer lists, methods, machines, manufacturers, compositions, engineering, research, ideas, concepts, inventions, discoveries, writings, software, or otherwise, or which the Company or any affiliate thereof, has received in confidential from any others; nor shall the Employee disclose to the Company any confidential information of any others. The Employee hereby warrants that the Employee shall hold in confidence all confidential information of the Company.

The Employee covenants that, upon end or termination of the employment due to any reason, the Employee shall deliver to the Company or destroy, at the Company's request, any and all forms of the files, documents and materials in the Employee's possession, which may contain the Company's confidential information.

A breach of this Article of Confidential Information by the Employee constitutes a material breach of this Agreement. The Employee shall be liable for the breach herein, and return to the Company all proceeds gained as resulted from such breach. The Employee shall indemnify the Company against any losses incurred in such breach. Furthermore, the Company also has the right to take punitive actions against the Employee in accordance with relevant labor disciplines and rules, and the Employee concerned may not be eligible for the performance bonus under Article 4 of this Agreement.

Due Practice

During the term of this Agreement, the Employee shall not, and shall not direct any other person, to offer, promise or give to any government official, any political party or official thereof, any candidate for political office, or any other person any money or any other thing of value while knowing or having reason to know that all or a portion of such money or thing of value will be offered, promised, or given directly to any such entity for the purpose of influencing any action, omission, or decision by the recipient in order to obtain or retain business for Company or to direct business to another.

1. TRAINING

The Company requires all Employees to undertake training programs, including compulsory courses and development training courses if the Company considers it appropriate. If the Employee has received training from the Company, and terminates his/her employment pursuant to provisions of this Agreement within two (2) years of completing such training, the Employee shall reimburse the Company of all training related expenses incurred by the Company in providing such training to the Employee on a pro rata basis.

1. END AND TERMINATION OF THIS AGREEMENT End and Termination of this Agreement

For the conditions related to end or termination of this Agreement, the Company will act in accordance with the relevant regulations of *Labor Law of People's Republic of China, Labor*

Contract Law of People's Republic of China, and the regulations as stipulated in the Employee Handbook.

Handover

No matter for which reason this Agreement ends or terminates, the Employee must fully cooperate with the handover personnel designated by the Company to ensure that his/her duties are successfully transferred to the handover personnel. The Company has the discretion to adopt different handover procedures for different employees.

Before the Employee leaves the Company, the following matters must be delivered:

- (1) Company assets held by the Employee (including equipment and facilities assigned by the Company to the Employee);
- (2) Personal loans borrowed from the Company;
- (3) Outstanding company affairs undertaken by the employee;
- (4) Details relating to the company affairs undertaken by the employee;
- (5) Various kinds of documents, disks and E-mails relating to the company affairs (including documents, books, technical data, etc.).

After completion of the handover, the Employee shall not keep any copy of the work related materials or electronic copies; the Employee shall not use the work related materials to support any opponent in lawsuit, arbitration or dispute which may have adverse effect to the Company.

The Employee must complete the handover in person. If the handover cannot be conducted by the Employee, a third party can be designated to complete the delivery upon approval by the Company. However, the Employee will still be responsible for the delivery. If the delivery fails to be delivered in time or completely, the Employee will be responsible for the losses or damages incurred to the Company.

1. STATEMENT OF DISPUTE

In the event of a labor dispute, the Employee and the Company will negotiate based on fairness and equality.

If the dispute is not settled within 30 days after the occurrence, the parties have the right to submit to the local labor dispute arbitration committee for arbitration.

If either party is not satisfied with the arbitration ruling, the case may be forwarded to the local People's Court.

1. NON-CONFLICTING AGREEMENT

The Employee hereby represents and warrants that the execution of this Agreement and the performance of the Employee's obligations hereunder will not breach or be in conflict with any other agreement to which the Employee is a party or is bound to and that the Employee is not subject to any covenants against competition or similar covenants that would affect the performance of the Employee's obligations under this Agreement, and all the obligations included in the non-competition agreement or any other agreements which may have influential problems.

1. MISCELLANEOUS

Survival: After the expiration or termination of this agreement, provisions of this agreement shall survive the termination thereof for the settlement of right(s) and obligation(s) produced by this agreement.

Revision in Written Form: No provision of this Agreement may be amended, modified or waived without a written agreement signed by both parties.

Notice: Any notice or other communications shall be delivered by first class certified mail or by registered mail. If the address of the Employee changes, the Employee shall notify the Company within seven days after the effectiveness of such change.

Language: This Agreement is executed in two (2) sets of originals, with each set comprised of and English and Chinese version. If there is any discrepancy between the Chinese version and the English version, the Chinese shall prevail.

[End of page. Next page is Signature Page.]

IN WITNESS HEREOF, the parties have executed this Employment Agreement as of the date set forth above.

ACM Research (Shanghai), Inc.

/s/ ACM Research (Shanghai), Inc.

EMPLOYEE:

By/

/s/ Lisa Feng

Printed Name: Lisa Feng

I.D. Card : [***]

I.D. Address: /

Residential Address: [***]

Email: lisa.feng@acmrcsh.com

**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: May 9, 2023

/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: May 9, 2023

/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 March 31, 2023, 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: May 9, 2023

/s/ David H. Wang

David H. Wang

Chief Executive Officer and President

(Principal Executive Officer)

Date: May 9, 2023

/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.