



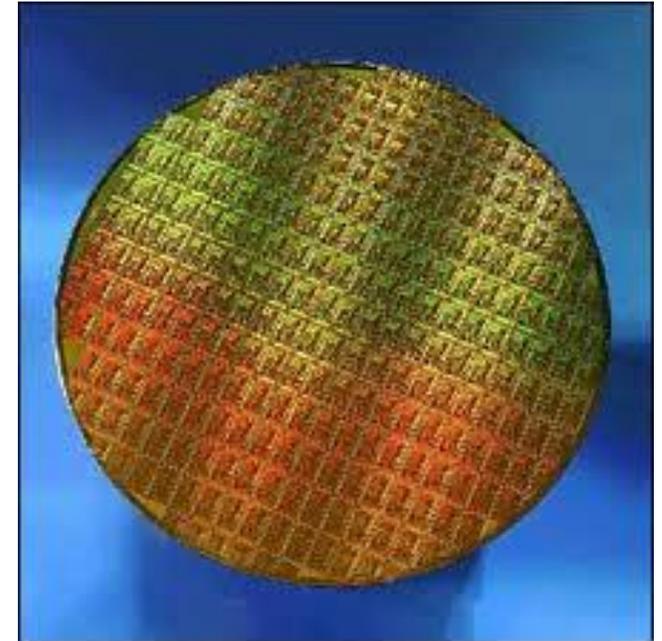
Investor Presentation

September 2020

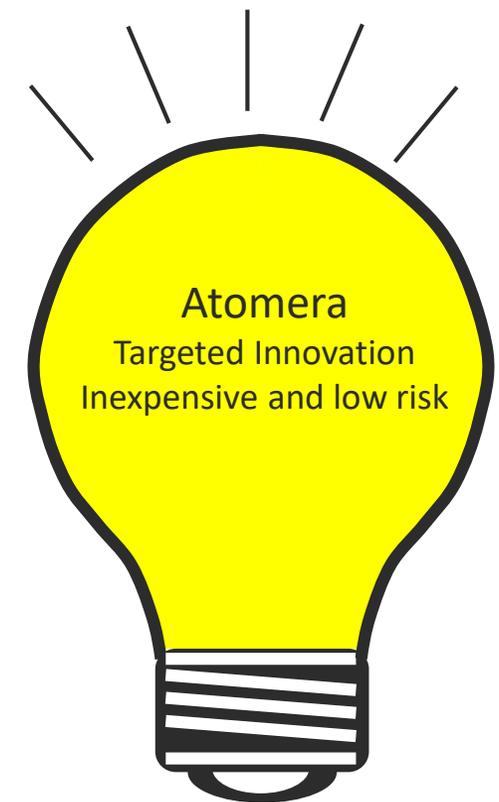
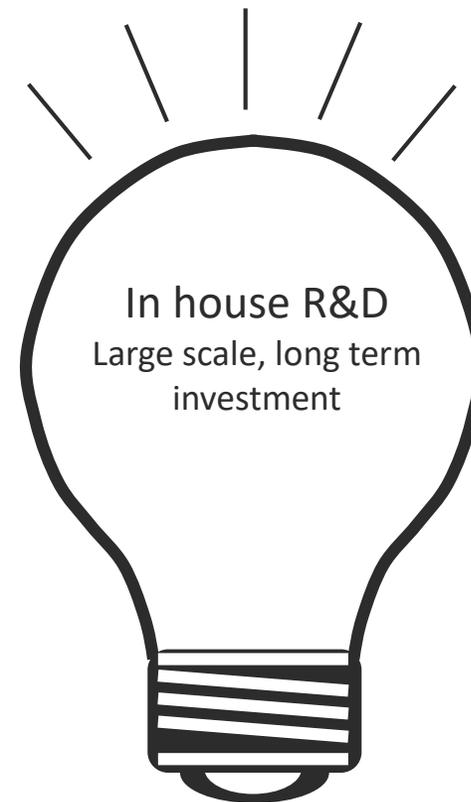
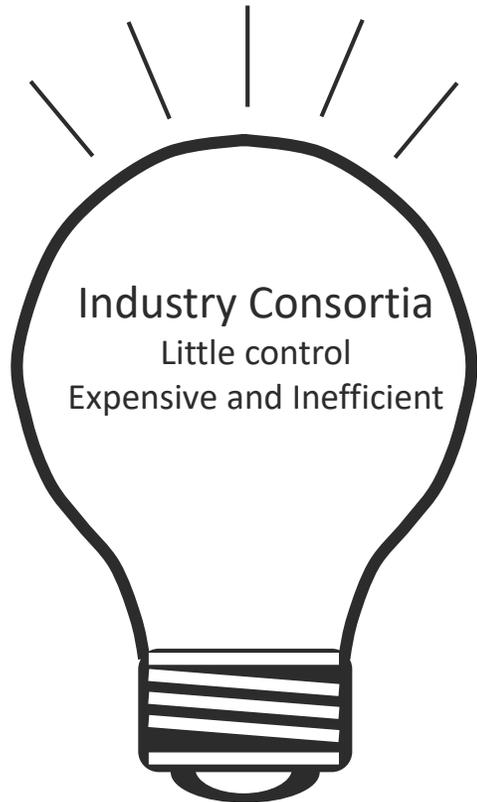
This presentation contains forward-looking statements concerning Atomera Incorporated (“Atomera,” the “Company,” “we,” “us,” and “our”). The words “believe,” “may,” “will,” “potentially,” “estimate,” “continue,” “anticipate,” “intend,” “could,” “would,” “project,” “plan,” “expect” and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those disclosed in the section “Risk Factors” included in our Prospectus Supplement filed with the SEC on May 13, 2020. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this presentation may not occur and actual results could differ materially and adversely from those anticipated or implied in our forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in our forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances described in the forward-looking statements will be achieved or occur.

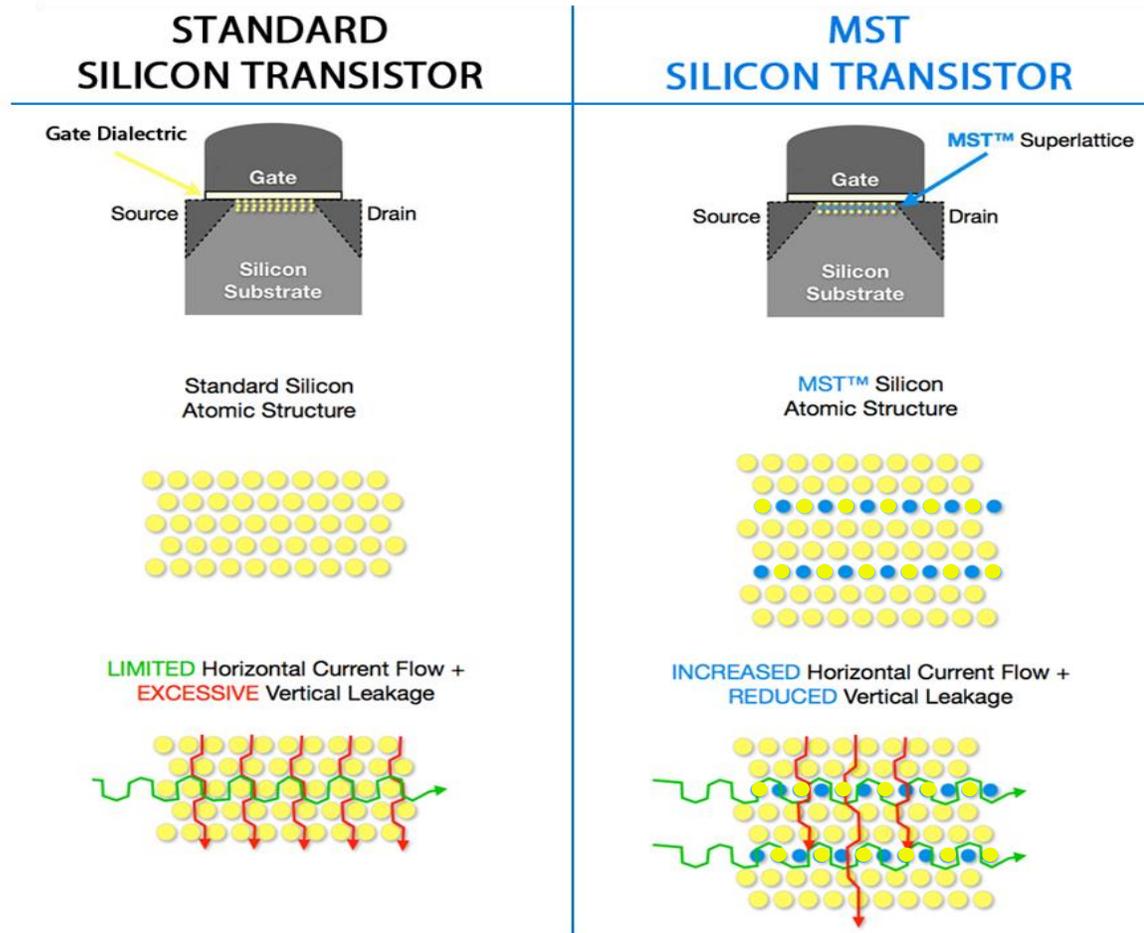
This presentation contains only basic information concerning Atomera. The Company’s filings with the Securities Exchange Commission, including the Prospectus Supplement, include more information about factors that could affect the Company’s operating and financial results. We assume no obligation to update information contained in this presentation. Although this presentation may remain available on the Company's website or elsewhere, its continued availability does not indicate that we are reaffirming or confirming any of the information contained herein.

- **Mears Silicon Technology (MST®) is a thin film used to enhance semiconductors**
 - *Results in higher performance, lower power, and lower costs for ICs*
- **Capital-light IP licensing business**
 - *Robust and growing patent portfolio*
- **Engaged with 50% of world's top semiconductor makers**
- **Licenses with three companies**
- **Strong team to commercialize technology**
 - *CEO ran \$1B+ divisions at Broadcom and Altera*
 - *Founder/CTO co-invented the EDFA for long-haul optical applications*
 - *Deeply experienced materials science and semiconductor engineering team*



A better way for industry R&D

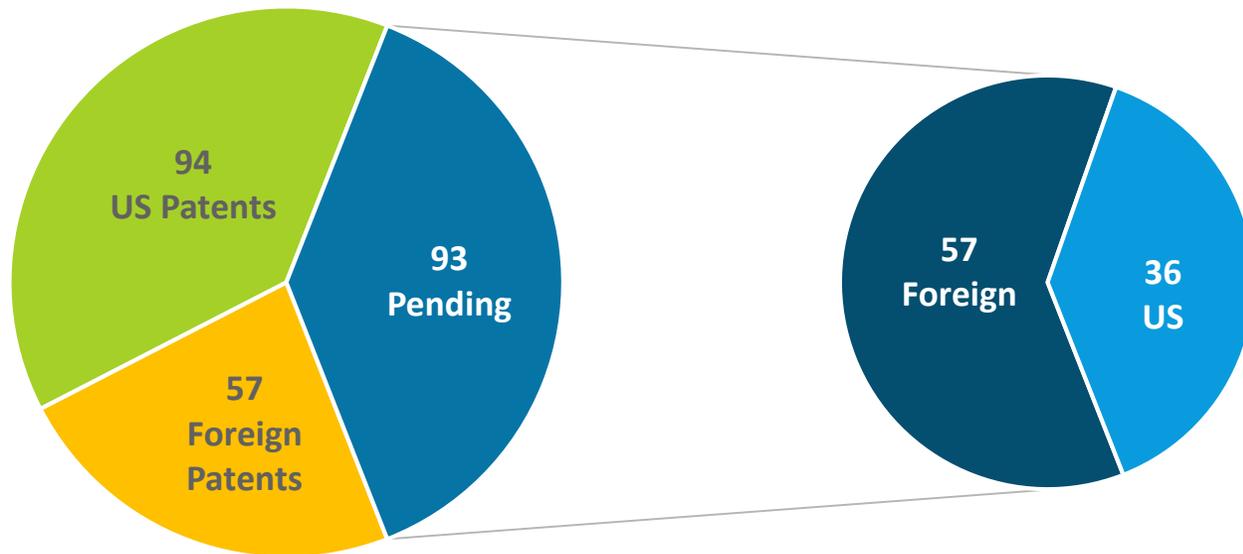




Potential Benefits

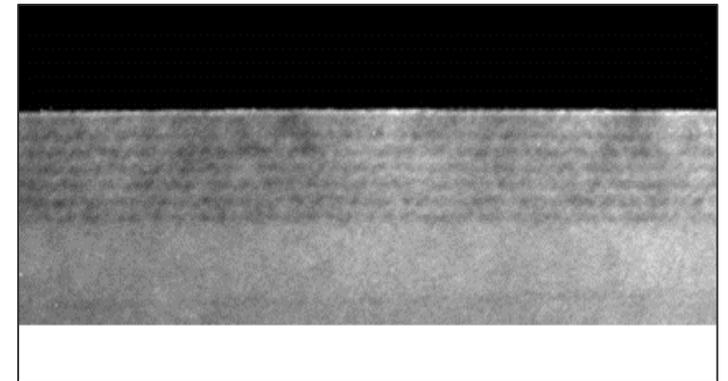
- **Improved Efficiency**
 - *Higher transistor performance*
 - *Lower power consumption*
 - *Better reliability*
- **Lower cost**
 - *Reduced die size*
 - *Improved yield*
 - *Higher throughput*
- **Same benefits as a node shrink**

244 Patents Granted and Pending



Core MST Method and Device
MST Enabled Devices/Architecture
Next-Gen Architectures using MST

Discoverable



These distinctive layers are visible on products using MST

Extensive know-how

Extends life and value of patents

Target Customers & Partners



Integrated Device Manufacturers



Foundry



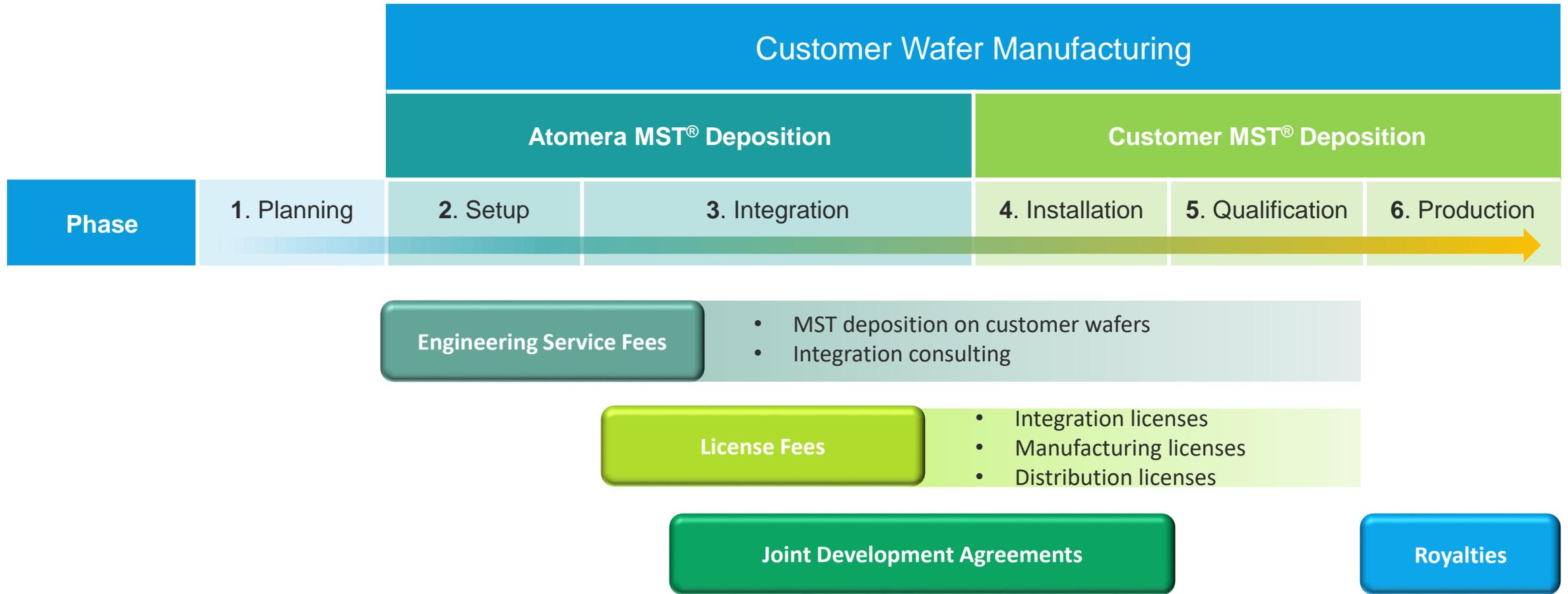
Fabless



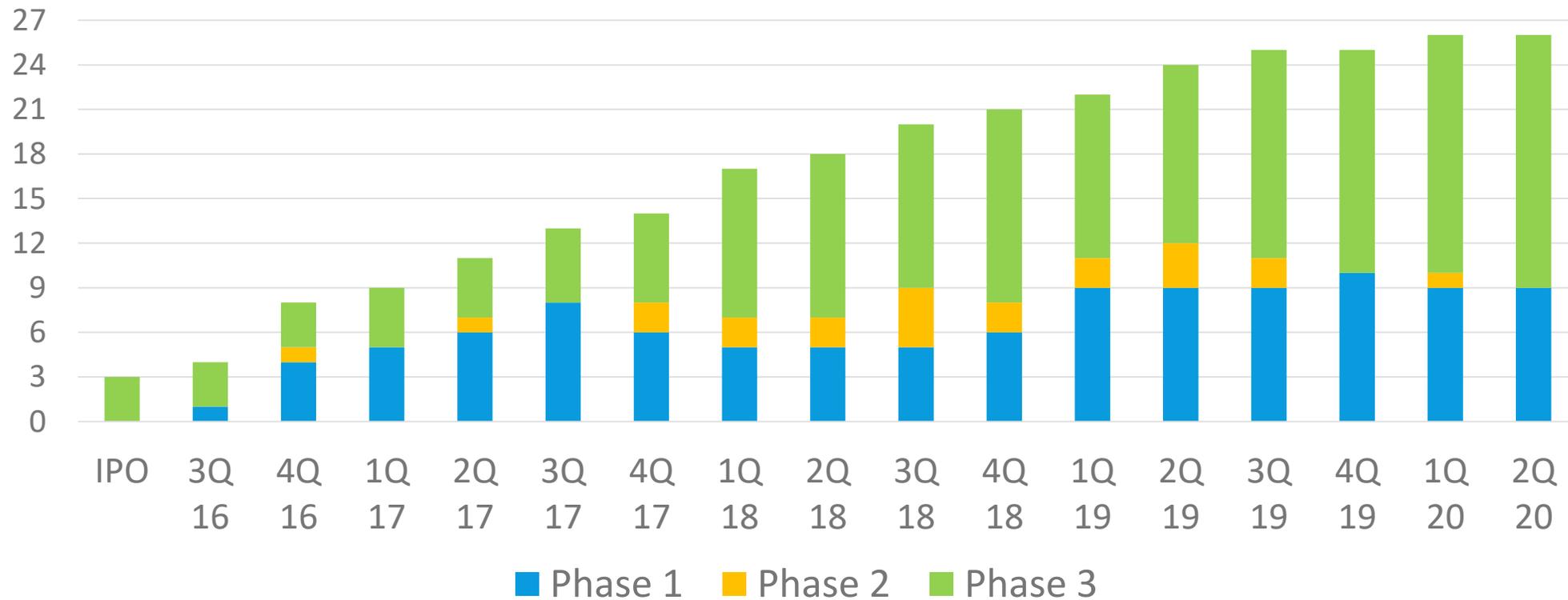
Tool Suppliers (Partners)



Customer engagement and revenue model



Number of Customer Engagements



- 19 customers, 26 engagements
- Working with 50% of the world's top semiconductor makers*

Royalty opportunity



- ~370 wafer fabs operating worldwide
- Adoption of MST in *one fab* can make Atomera profitable from royalties alone
 - 2020 non-GAAP OPEX guidance is \$12.75-13.25M

Example 1. Worldwide Average Fab		Example 2. Leading Foundry, 28nm Fab	
Monthly Fab Capacity ¹ (wafers/month)	49,000	Monthly Fab Capacity (wafers/month)	80,000
Industry average wafer ASP - 2018	\$1,136	Industry average 28nm wafer ASP	\$3,000
Annual Revenue Potential²	\$13M	Annual Revenue Potential²	\$58M
<i>Annual Revenue at 50% of ramp²</i>	<i>\$6.7M</i>	<i>Annual Revenue at 50% of ramp²</i>	<i>\$29M</i>

1. Represents wafers starts per month (200mm equiv) – 217.3M starts in 370 fabs

2. Assumes 2% royalty rate

Source: IC Insights Global Wafer Capacity 2019-2023 report, McClean Report 2019

MST customer business opportunity



- Standard industry fab wafer pricing, GM, and cost
 - 15% performance improvement option raises price by \$150

	Wafer selling Price	GM%	GM\$ Increase over base	Fab wafer Cost*	
28nm HP wafer - base	\$ 3,000	45%	\$ -	\$ 1,650	
28nm HP+ wafer	\$ 3,150	45%	\$ 68	\$ 1,733	15% improvement in performance

- MST provides a 30+% performance improvement to 28nm wafers
 - Allows fabs to raise their price by \$300

Atomera royalty		2%		\$ 66	
28nm HP wafer with MST	\$ 3,300	47.4%	\$ 214	\$ 1,736	30% improvement in performance

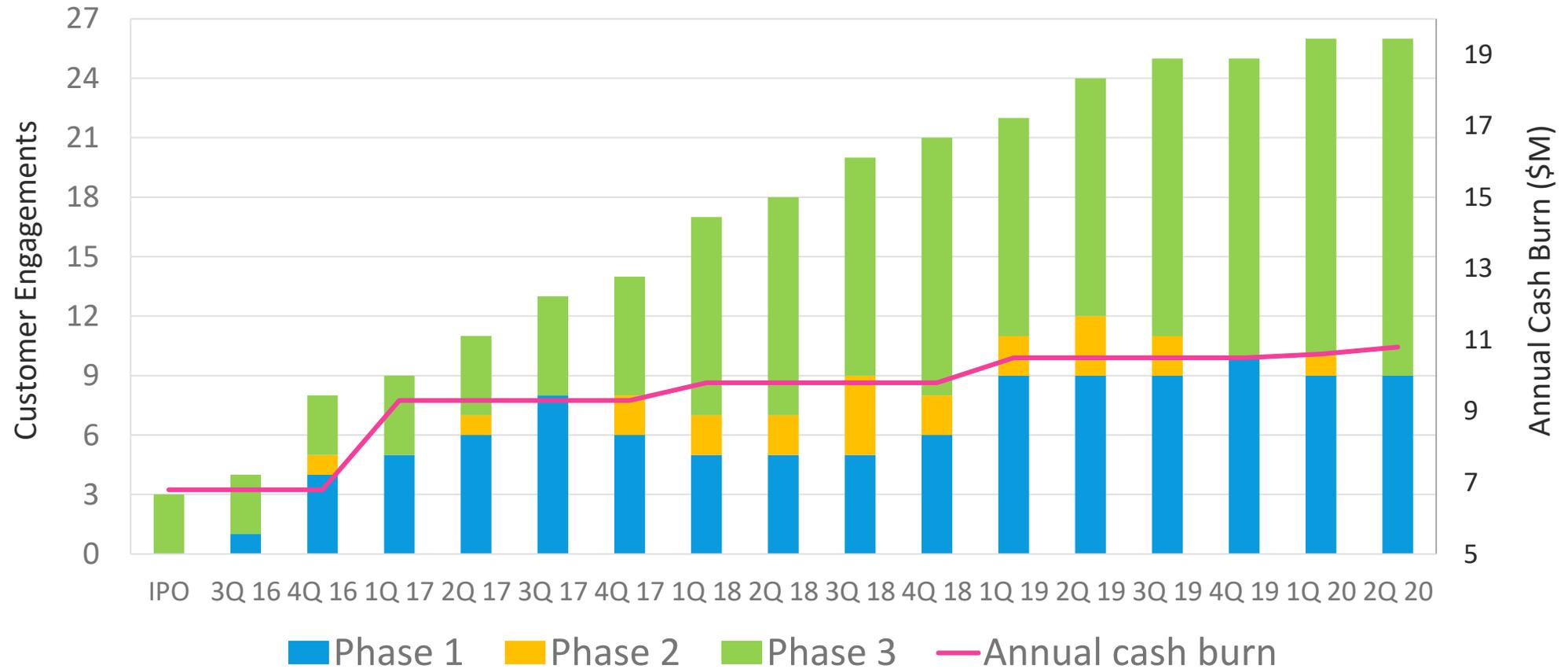
- Instead of a performance boost, MST can be used to make a smaller die size
 - Fabs typically increase their prices by half the total die shrink made available to their customers

Atomera royalty		2%		\$ 68	
28nm HP wafer with MST	\$ 3,375	48.5%	\$ 288	\$ 1,738	25% die size reduction, 12.5% price increase

- Fabs make greater than \$200 additional profit on each MST wafer and Atomera makes ~\$67

* Additional MST processing cost ~\$20

Cash Efficient Growth



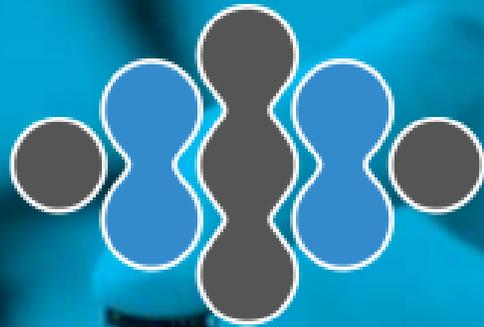
Financial review



	Q2 '19	Q3 '19	Q4 '19	Q1 '20	Q2 '20	Balance Sheet 06/30/20	
GAAP Results							
Revenue	\$0.07M	\$0.25M	\$0.14M	\$0.06M	-	Cash	\$18.0M
Gross Profit	\$0.05M	\$0.05M	\$0.11M	\$0.05M	-	Debt	-
Operating Expense						Shares Outstanding	19.8M
R&D	\$2.1M	\$1.7M	\$1.8M	\$2.1M	\$2.1M		
G&A	\$1.5M	\$1.2M	\$1.2M	\$1.4M	\$1.5M		
S&M	\$0.2M	\$0.2M	\$0.2M	\$0.2M	\$0.2		
Total Operating Expense	\$3.8M	\$3.2M	\$3.2M	(\$3.7M)	(\$3.8M)		
Net Loss	(\$3.6M)	(\$3.1M)	(\$3.0M)	(\$3.6M)	(\$3.8M)		
Loss Per Share	(\$0.24)	(\$0.19)	(\$0.18)	(\$0.22)	(\$0.21)		
Reconciliation between GAAP & Non-GAAP							
Net Loss (GAAP)	(\$3.6M)	(\$3.1M)	(\$3.0M)	(\$3.6M)	(\$3.8M)		
Stock-Based Compensation	\$0.8M	\$0.8M	\$0.6M	\$0.6M	\$0.8M		
Warrant Modification	-	-	-	\$0.1M	-		
Other income (expense)	(\$0.1M)	(\$0.1M)	-	-	-		
Adjusted EBITDA (Non-GAAP)*	(\$2.9M)	(\$2.4M)	(\$2.4M)	(\$2.9M)	(\$3.0M)		

*Adjusted EBITDA is a non-GAAP financial measure. A full reconciliation of GAAP and non-GAAP results is contained in our Q2 press release. Some totals reflect rounding.

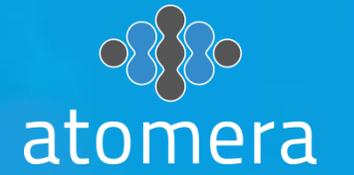
- High margin, recurring revenue financial model
- Strong technology and patent position
- Traction with many top industry players and growing licensee base
- Ramping commercial license revenues



atomera

Thank You

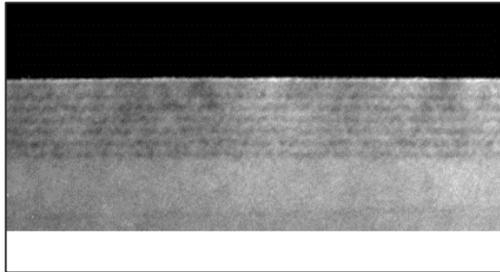
Backup Slides



MST[®] : Mears Silicon Technology



Partial monolayers of Oxygen in Silicon

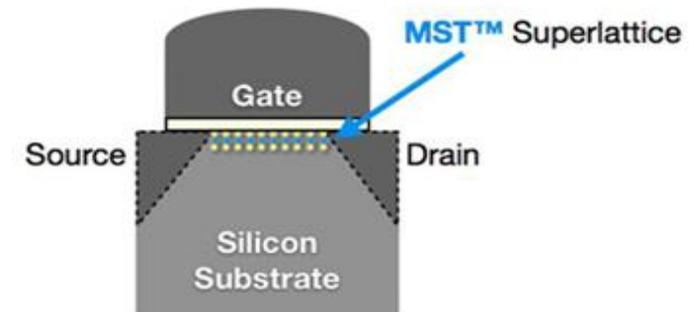


Supported by
major Semiconductor tool suppliers

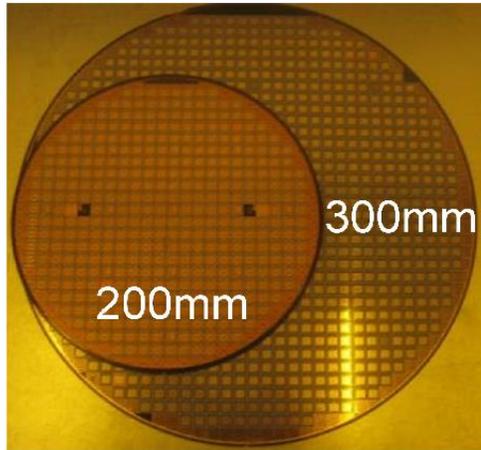


Quantum Engineered Silicon

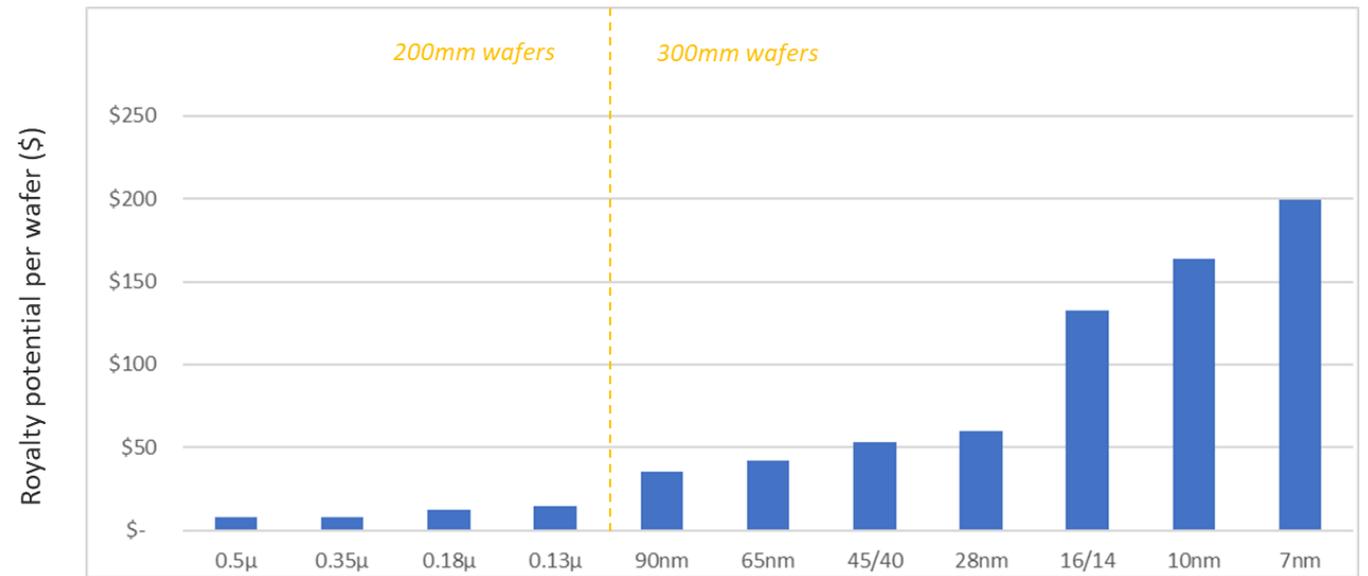
MST enhanced Transistors



300mm Epi tool



300mm Epi Deposition Tool



Source: The McClean Report - 2019

Atomera Licensees



Atomera Licenses MST Technology to Asahi Kasei Microdevices (AKM)

Highlights:

- Asahi Kasei Microdevices, a Japanese semiconductor manufacturer of high-end specialty integrated circuits (ICs) and sensor products, has licensed Atomera's Mears Silicon Technology™ (MST).
- This agreement represents the first license revenue for Atomera and the beginning of our commercial license business.
- Access to Atomera's silicon enhancement Intellectual Property (IP) provides AKM with technology to address global market opportunities

LOS GATOS, Calif., Sept. 25, 2018 (GLOBE NEWSWIRE) -- [Atomera Incorporated](#) (NASDAQ: ATOM), a semiconductor materials and licensing company focused on deploying its proprietary technology into the semiconductor industry, today announced that Asahi Kasei Microdevices (AKM) has signed an integration license for Atomera's MST technology. This license gives AKM certain rights to integrate MST technology into their products and is the first of a three-phase licensing process.



Atomera Licenses MST to STMicroelectronics

Highlights:

- STMicroelectronics, a global semiconductor leader serving customers across the spectrum of electronics applications, has executed an integration license for Atomera's Mears Silicon Technology™ (MST) as a continuation of their R&D phase.
- The phased license agreement provides rights for STMicroelectronics to integrate Atomera MST with their in-house technology.

LOS GATOS, Calif., Oct. 02, 2018 (GLOBE NEWSWIRE) -- [Atomera Incorporated](#) (NASDAQ: ATOM), a semiconductor materials and licensing company focused on deploying its proprietary technology into the semiconductor industry, today announced that STMicroelectronics (ST) has signed an integration license for Atomera's MST technology. This license gives ST certain rights to integrate MST technology into their products and is the first of a three-phase licensing process.

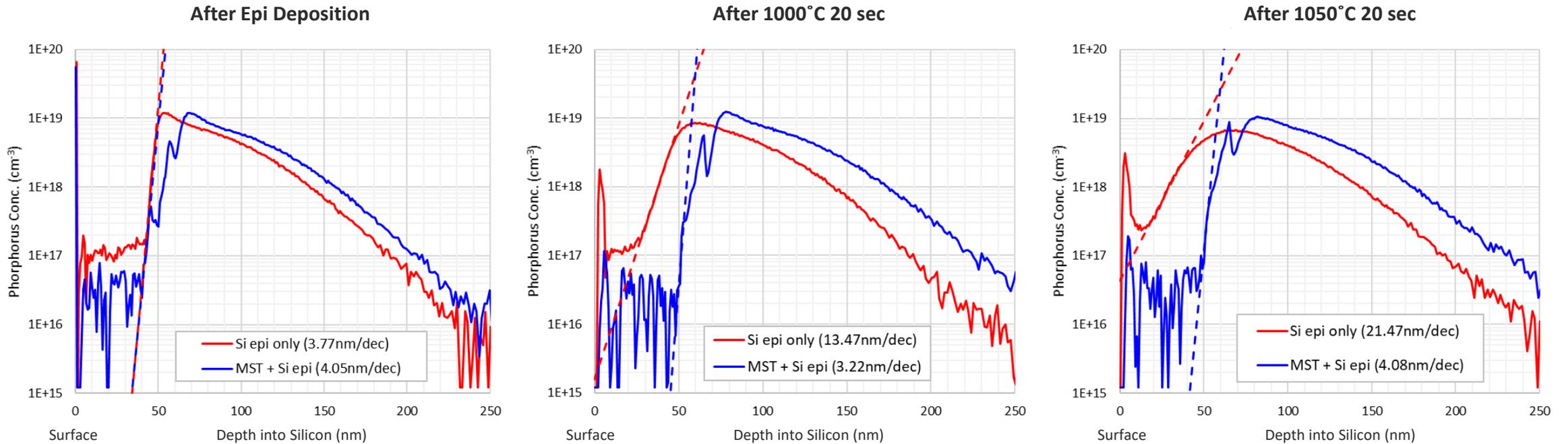


Atomera to License MST Technology to RF Semiconductor Solution Provider for Mobile 5G Markets

The integration license agreement provides rights to develop a next generation RF platform using MST technology
LOS GATOS, Calif., Oct. 30, 2019 (GLOBE NEWSWIRE) -- [Atomera Incorporated](#) (NASDAQ: ATOM), a semiconductor materials and licensing company focused on deploying its proprietary technology into the semiconductor industry, today announced it has reached an agreement to license Atomera's Mears Silicon Technology (MST) technology to a leading semiconductor provider of RF products. Under the terms of this license, the company plans to integrate MST technology into next generation RF products for mobile 5G markets. Atomera's MST is a patented, quantum-engineered material which can enhance transistors to deliver significantly better performance in today's electronics.

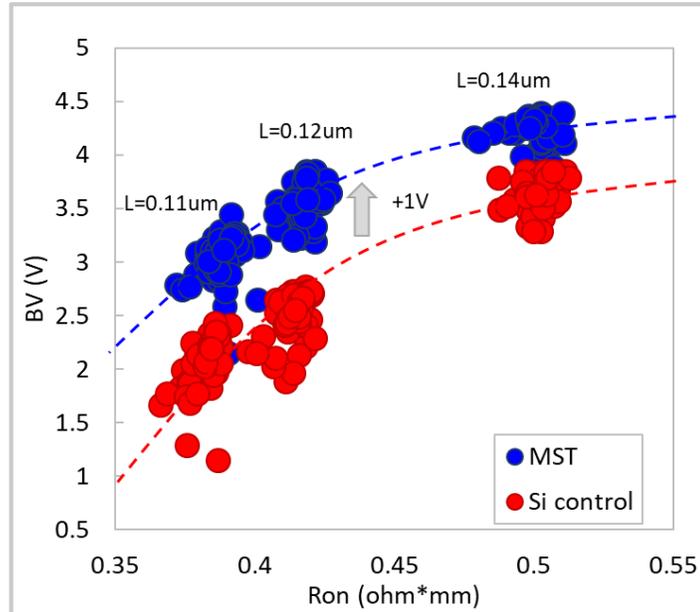
***Large fabless
RF semiconductor
company***

Phosphorus diffusion blocking by MST



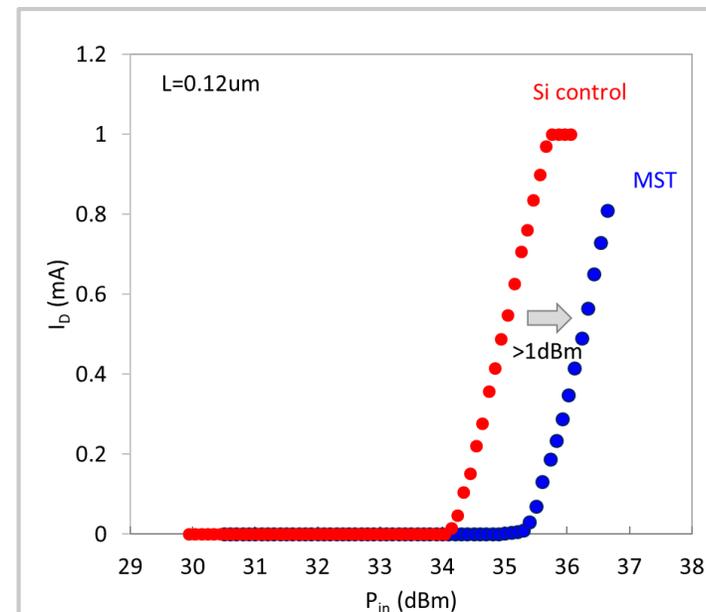
- MST minimizes up-diffusion of Phosphorus through typical manufacturing thermal cycles
 - Ideally dopant concentration will stay very low near the surface
 - Steeper slope (in nm/dec) is more effective at blocking
- MST shows 4-5x better diffusion blocking over Baseline (Si epi only)
 - A very compelling result for use in FinFET devices

Breakdown Voltage vs R_{on}



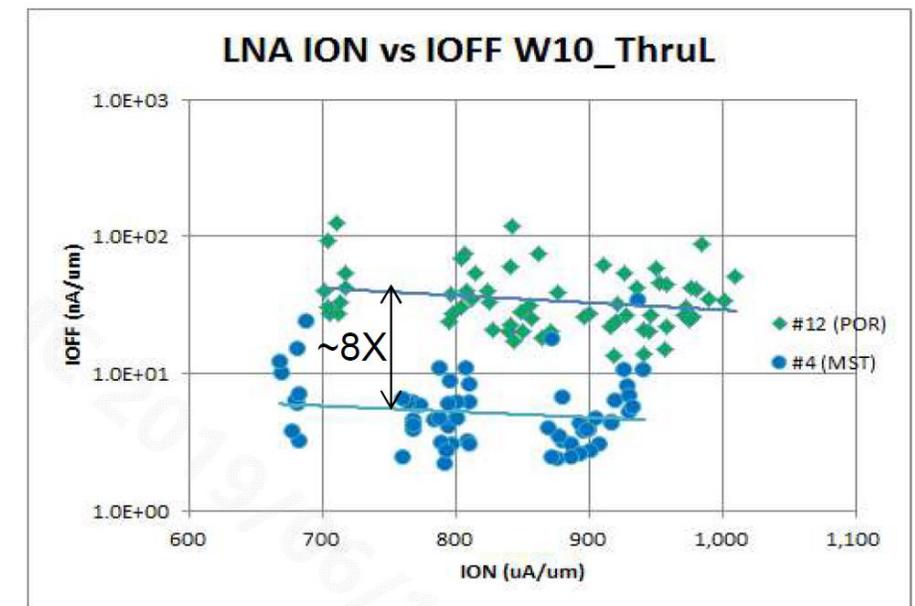
- MST improves BV vs R_{on}
 - Up to 50% BV increase at same R_{on}
 - 15-20% R_{on} improvement at same BV

RF Switch Power Handling



- MST improves RF switch power handling
 - Greater than 25%
 - Provides greater design flexibility

LNA Ioff improvement



- MST improves LNA performance
 - 8 x better Ioff
 - Reduce power consumption extending battery life

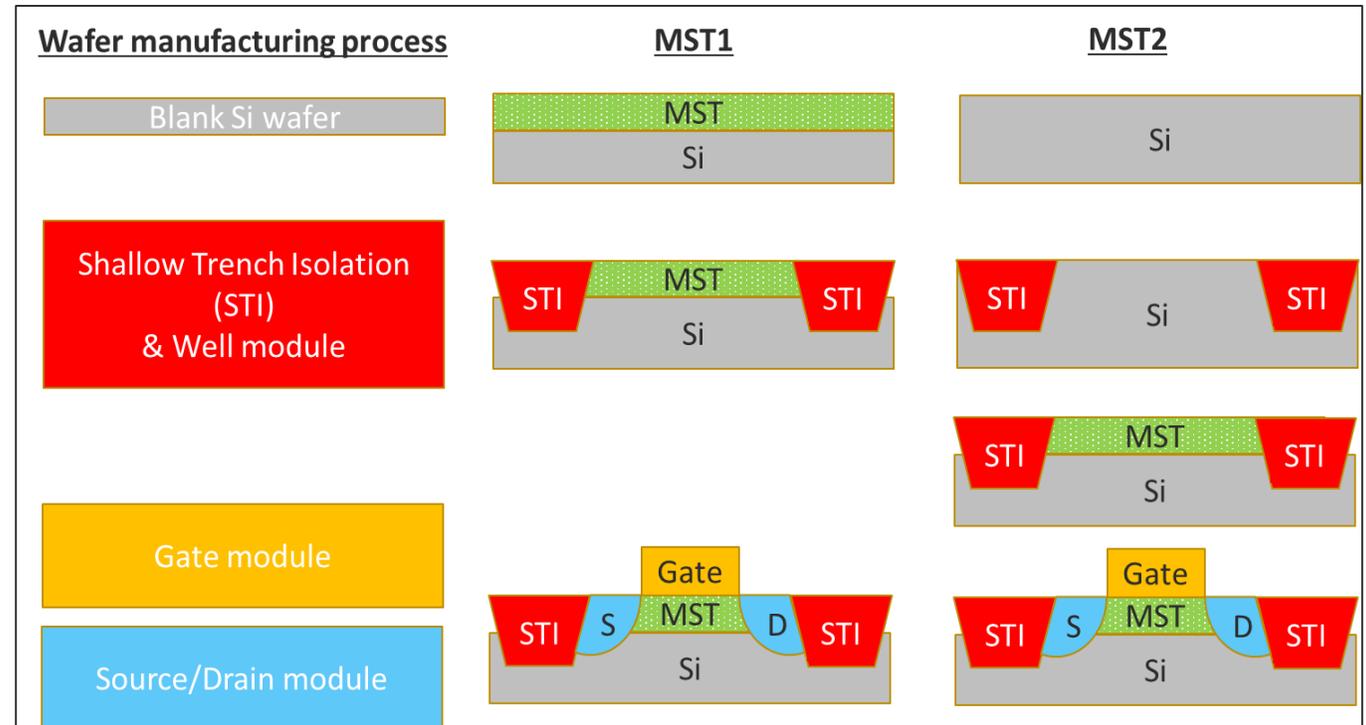
MST1 vs MST2

▪ MST1

- Blanket technology
- Easy to integrate
 - Deposited at beginning of mfg process
- Degraded by high heat in STI/Well module
- Faster time to market for low heat processes
- Used for FinFET, RFSOI, newer process nodes

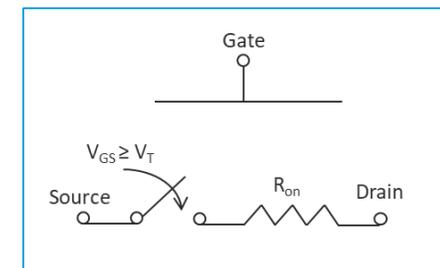
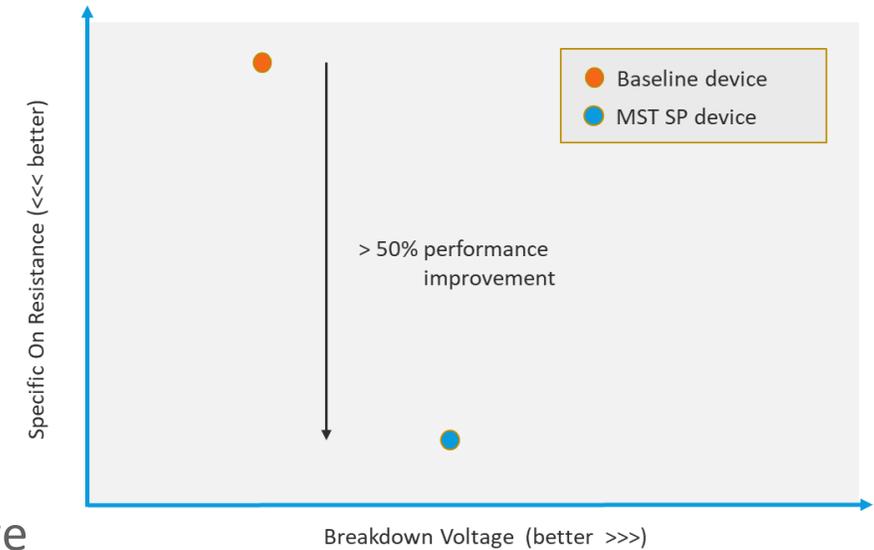
▪ MST2

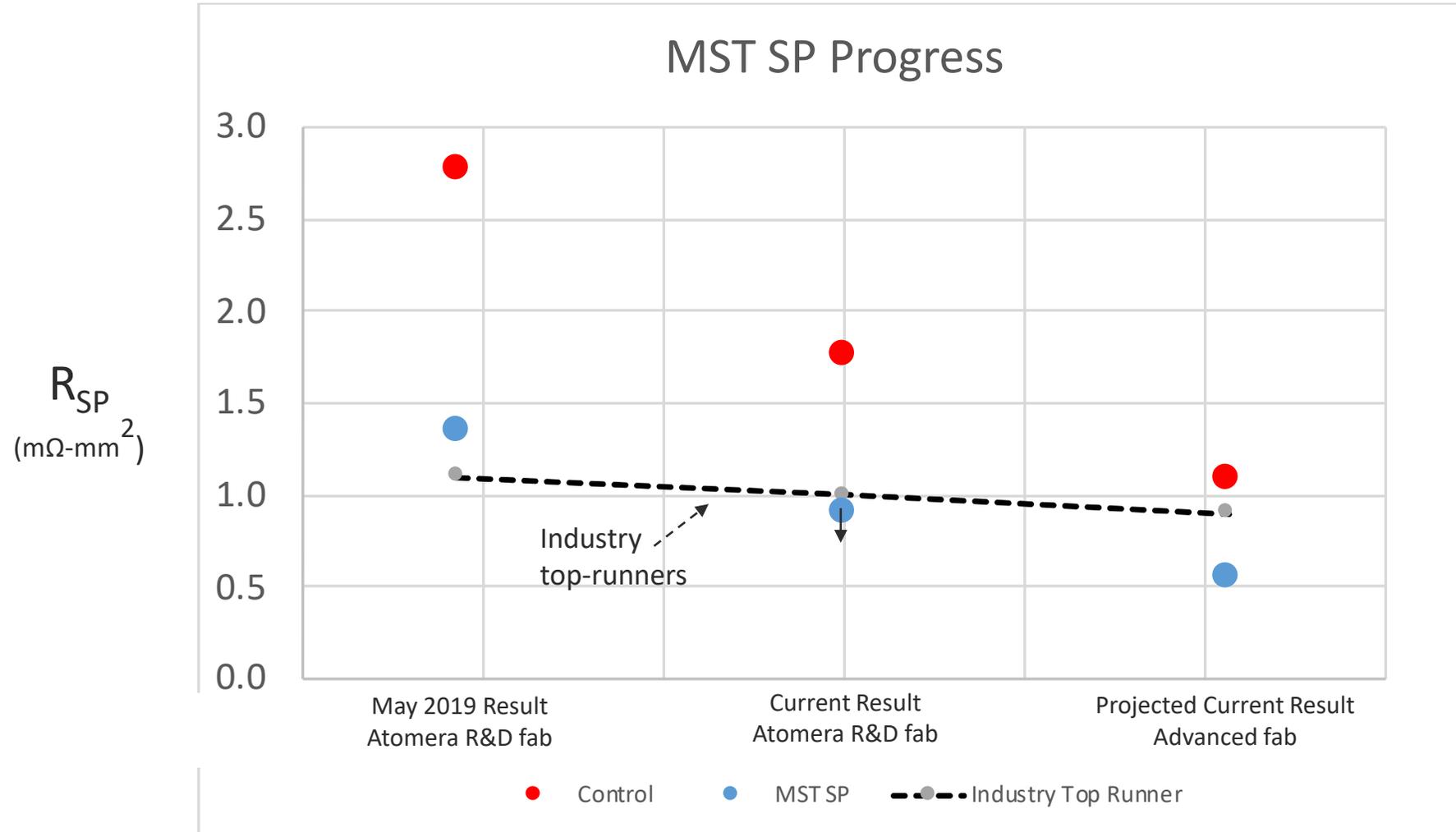
- Selective technology
 - Integrated after STI/Well so avoids highest heat
- More flexible to apply to selected areas only
- Used for 5V, Analog, older process nodes



5V Analog Breakthrough

- 3. Breakthrough performance achieved on 5V analog products
- Large segment of the overall analog market
- Atomera has targeted ~20% improvement on 5V devices
- In April Atomera demonstrated a 50%+ improvement
 - Using MST-SP technology
 - Relatively fast and easy to implement
- Expected to give many business advantages
 - Time to license, accelerated time to royalty, negotiating leverage
 - Applicable to even more markets
- Market size: ~\$33B, or \$660M in royalties





MST matching performance

- Transistor mismatch is an industry problem
- Certain circuit designs benefit from mismatch reduction
 - A-D convertors
 - SRAM
 - Flash
 - DRAM sense amplifiers
- MST can reduce mismatch by more than 50%
- Details available at Atomera's website
 - blog.atomera.com

