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Investor Presentation

March 2021

Safe Harbor

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 Annual Report on Form 10-K filed with the SEC on February 19, 2021. 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 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.

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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.

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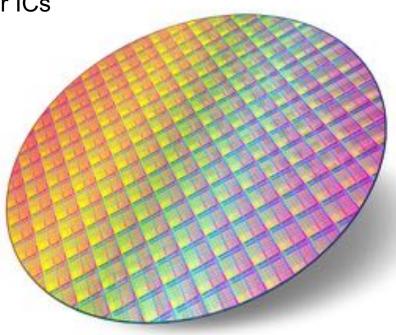
Investment Overview

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 and technology licensing business

- Robust and growing patent portfolio
- Engaged with 50% of world's top semiconductor makers
- Licenses with four companies including recent JDA
- Strong team to commercialize technology



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A Better Way for Industry R&D

Industry Consortia

Little Control

Expensive & Inefficient

Equipment OEMs

No Longer Available

Tied to Equipment Sales

In House R&D

Large Scale, Long Term Investment



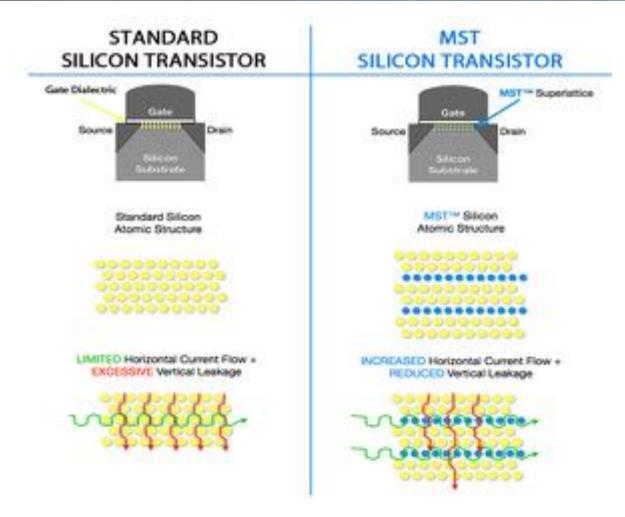
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Inexpensive & Low Risk

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MST Technology

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Potential Benefits

Improved Efficiency

- Higher transistor performance
- Lower power consumption
- Better reliability

Lower cost

- Reduced die size
- Improved yield

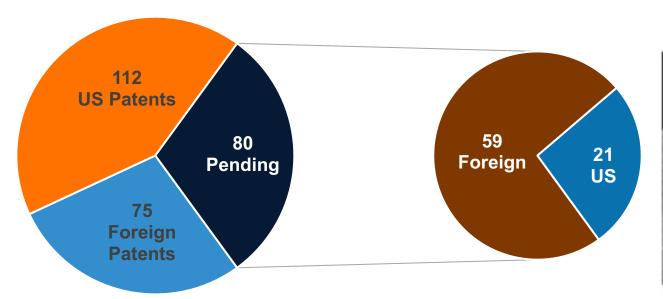
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Higher throughput

Same benefits as a node shrink

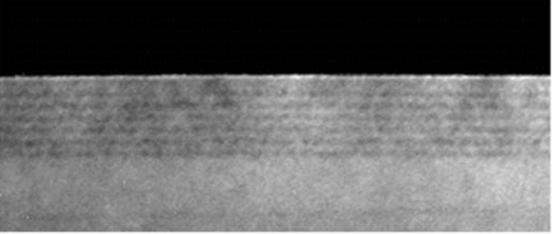
Patent Portfolio – 17% increase YoY

269 Patents Granted and Pending



Discoverable These distinctive layers are visible on products using MST

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

Extensive know-how Extends life and value of patents

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Target Customers & Partners





Tool Suppliers (Partners)

ASM 🛞



Customer Engagement & Revenue Model

		Customer Wafer Manufacturing								
		Atom	nera MST [®] Deposition	Customer MST [®] Deposition						
Phase	1. Planning	2 . Setup	3. Integration	4. Installation	5. Qualification	6. Production				
		Engineering S Fees	MST deposition Integration const	on customer wafe ulting	rs					
			License Fees	 Integration lice Manufacturing Distribution lice 	j licenses					
			Joint Development A	Agreements		Royalties				
			Atomera Incorporated			8				

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Customer Pipeline

Number of Customer Engagements



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- 19 customers, 25 engagements
- Working with 50% of the world's top semiconductor makers*

At least 10 of the top 20 (IC Insights, McClean Report 2021)
 [^] Updated March 2, 2021

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Royalty Opportunity

- ~370 wafer fabs operating worldwide
- Adoption of MST in one fab can make Atomera profitable from royalties alone
 - 2021 non-GAAP OPEX guidance is \$14.00-14.5M

Example 1 Worldwide Avera	ge 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 Potential ²	\$13M	Annual Revenue Potential ²	\$58M				
Annual Revenue at 50% of ramp ²	\$6.7M	Annual Revenue at 50% of ramp ²	\$29M				

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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

				G	M\$	N	/IST		
	1	Price	GM%	Inc	rease	Ro	yalty	Cost	
28nm HP wafer	\$	3,000	45%	\$	-	\$	-	\$ 1,650	
28nm HP+ wafer	\$	3,150							\$150 price increase for +15% performance

► Fab gets a 30% performance improvement <u>or</u> 25% shrink via MST

MST processing cost						\$ 20	Incremental cost of depositing MST
28nm HP wafer with MST	\$	3,300	47.4%	\$ 214	\$ 66	\$ 1,736	\$300 price increase for +30% performance
28nm HP wafer with MST	\$	3,375	48.5%	\$ 288	\$ 68	\$ 1,738	12.5% price increase for 25% size reduction

Fabless customer benefit in die shrink case

Chip sales/		1	GM\$	Product		
	wafer*	GM%	Increase	ASP	Die/wafer	
28nm HP wafer	\$ 8,400	50.0%	\$-	\$ 4.42	2,235	Baseline business for 30mm ² chip
28nm HP wafer with MST	\$ 11,279	62.8%	\$ 2,879	\$ 4.42	3,001	Improved financials with 25% size reduction

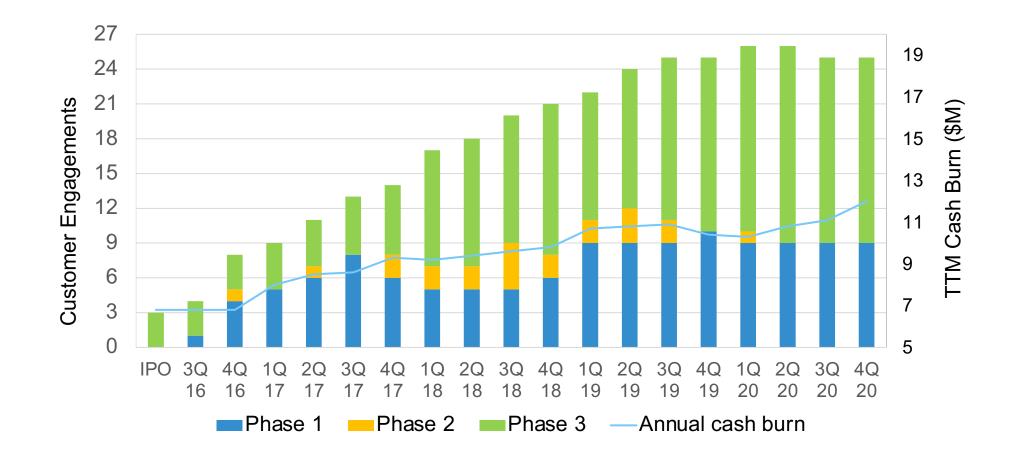
Everyone in the value chain benefits from MST technology

* Yielded

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Cash Efficient Growth

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Financial Review

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	FY 2019	Q1 '20	Q2 '20	Q3 '20	Q4 '20	FY 2020	Balance Sheet 12/	31/20
GAAP Results							Cash	\$37.9M
Revenue	\$0.53M	\$0.06M	\$-	\$-	\$ -	\$0.06M	Debt	-
Gross Profit	\$0.28M	\$0.05M	\$-	\$-	\$-	\$0.05M	Shares Outstanding	22.4M
Operating Expense								
R&D	\$7.7	\$2.1M	\$2.1M	\$2.0M	\$2.2M	\$8.4M		
G&A	\$5.2	\$1.4M	\$1.5M	\$1.3M	\$1.4M	\$5.6M		
S&M	\$1.0	\$0.2M	\$0.2M	\$0.2M	\$0.3M	\$0.9M		
Total Operating Expense	\$13.9M	\$3.7M	\$3.8M	\$3.6M	\$3.9M	\$15.0M		
Net Loss	(\$13.3M)	(\$3.6M)	(\$3.8M)	(\$3.6M)	(\$3.9M)	(\$14.9M)		
Loss Per Share	(\$0.84)	(\$0.22)	(\$0.21)	(\$0.19)	(\$0.19)	(\$0.79)		
Reconciliation between GAAP & Non-GA	AP							
Net Loss (GAAP)	(\$13.3M)	(\$3.6M)	(\$3.8M)	(\$3.6M)	(\$3.9M)	(\$14.9M)		
Stock-Based Compensation	\$2.9M	\$0.6M	\$0.8M	\$0.8M	\$0.8M	\$3.0M		
Warrant Modification	-	\$0.1M	-	-	-	\$0.1M		
Other income (expense)	(\$0.3M)	-	-	-	-	\$0.1M		
Adjusted EBITDA (Non-GAAP)*	(\$10.7M)	(\$2.9M)	(\$3.0M)	(\$2.7M)	(\$3.0M)	(\$11.7M)		

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

Summary

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High margin, recurring revenue financial model

- Strong technology, patent position, and balance sheet
- Traction with many top industry players and growing licensee base
- Ramping commercial license revenues

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Thank You

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Backup Slides

Joint Development Agreements

Advantages of joint development

- Atomera and customer engineers aligned on common goal
- Customer "resident expert" team develops expertise on Atomera technology

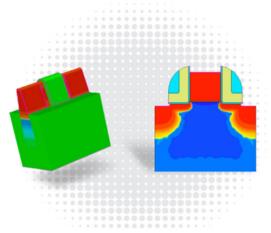
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- Resident experts become natural advocates
- First JDA signed with market leading semiconductor company
 - Includes a manufacturing license, putting them in Phase 4
 - Upon completion, MST can more easily be adopted by business units
 - Each business unit is an incremental licensing opportunity

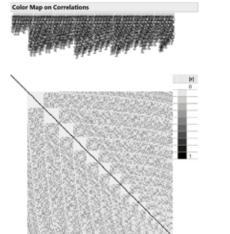
Atomera MSTcad[™]

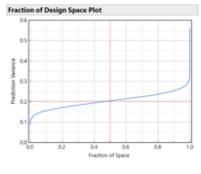


- Leading semiconductor companies use TCAD to model manufacturing processes
- MSTcad is an add-on for MST
- MSTcad can optimize complex statistical experiments to assess impact of multiple manufacturing options
- Lowers cost of MST evaluation
- Accelerates time to successful results by customers



Design Evaluation





Design Diagnostics	
D Efficiency	92.30176
G Efficiency	92,28571
A Efficiency	92,28571
Average Variance of Prediction	0.203498
Design Creation Time (seconds)	

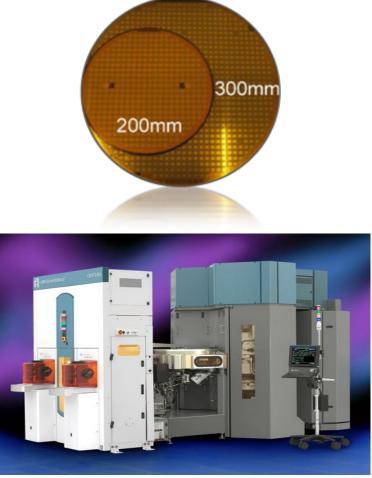
MST: Mears Silicon Technology

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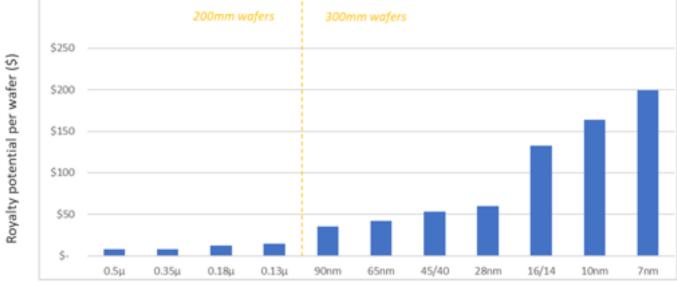
Quantum Engineered Silicon



300mm Epi Tool



300mm Epi Deposition Tool



Source: The McClean Report - 2019

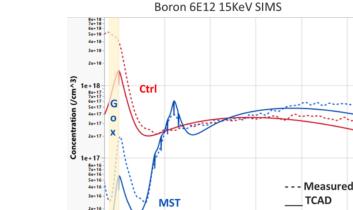
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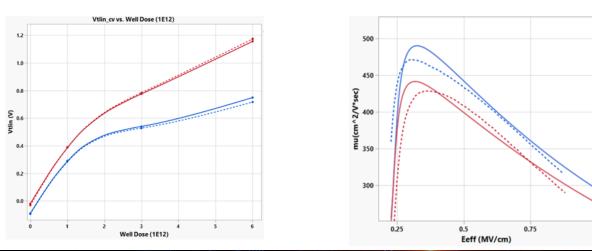
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Atomera MSTcad[™] Progress

- Leading semiconductor companies use TCAD
- MST is modelled with a TCAD add-on called MSTcad
- These plots show silicon verification of **MSTcad** simulations
- Enables good electrical match-up for 5V NMOS and MST SP
- Should speed time to successful results with customers





Depth AlignGoxInterface(nm

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1.2

1.0

0.8

0,4

0.2

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Atomera Licensees

Atomera Licenses MST Technology to Asahi Kasei Microdevices (AKM)

mplant

- Anali Kani Microbiolis, Classerie retrievaluelle in analysiseri of lighted gestalisticity projection of CC and areas products, has benefit Annumaly Microbiology (MCC).
- · This agreement reprint to the first feature internet for Warnet's and the beginning of the conversion feature internet.
- Access Schussers a plices estancement intellectual Property (PT previous AAM with includings in address plotal merket copyrighted in electrony)

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An outed on deploying the proprietar insular in the design and manufactor

Atomera Licenses MST to STMicroelectronics

managine

a Terrar phase Scanably process

- EDMs individually, a global seminandiation inside on ong instruments at 200 fee part insure of all intervals applie times, has measured as being atom inservals at account of Marcel Sills or Technology¹⁰ (MIT) as a continuation of Hair EDD place.
- The phased literan agreement provides rights for 3114/creatistic ratio by integrate Alemana MST-with deals in Fease technology.

UCh CARTOL Call, CAL 02, 2018 ICLCRR HEWINWED - Allower a low approximation of ARDAR's APDM, a spectra state of a solid carrier program Included in displaying Disproprietary technology into the sensitivation inductor inductory to be announced that STM productorealist 2013 has appreciate https://www.integration.into Announce.MD2 inclusions. This Transis gives 27 certain rights to integrate MV1 technology into their products and is the front of

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

> This integration former agreement provides signs to develop a very point atom RF plathers using MDT technology USS GATTEL CARE Core 20, DDTF DISORD MEWWINDED. Allowing Disord atom SOUNCACY ATOMS, a semiconductor material politic array compare Testand or depleting to provide a technology reacted at the technology backs pressent of the reacted or any reacted to the semiconductor provide at the provide at the terms of terms of

Asahi**KASEI**

life.augmented

Large fabless RF semiconductor company

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MST1 vs MST2

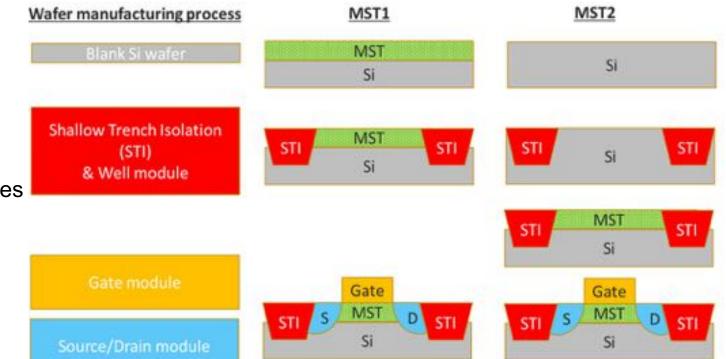
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MST1

- 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

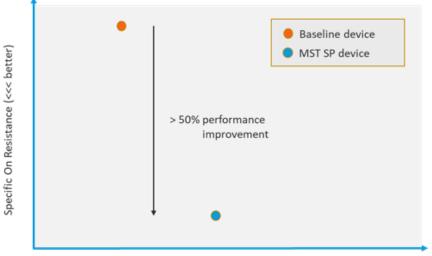
MST2

- 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



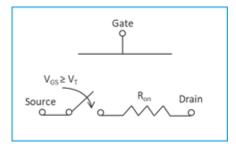
5V Analog Breakthrough

- <u>3. Breakthrough performance achieved on 5V analog products</u>
- 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



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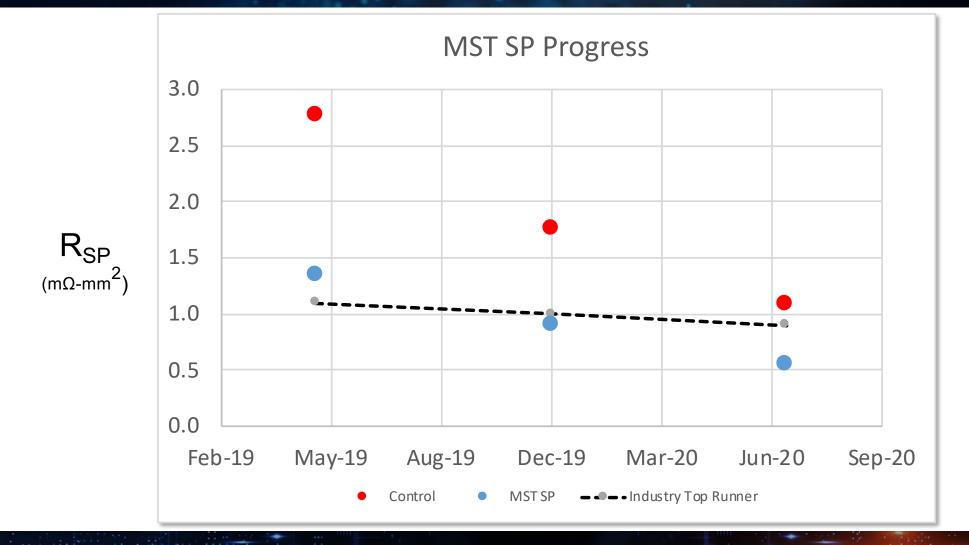
Breakdown Voltage (better >>>)



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MST-SP Progress

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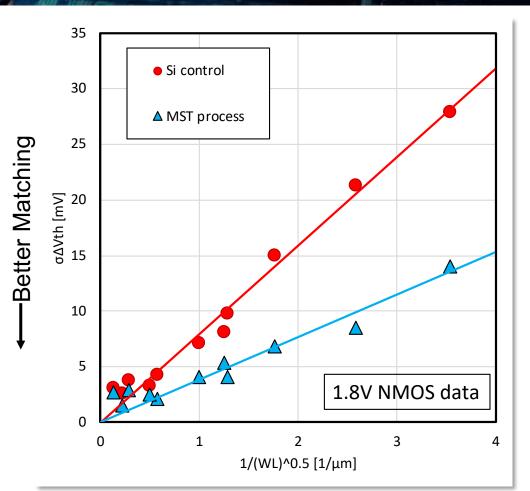


MST Matching Performance

- 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%

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- Details available at Atomera's website
 - blog.atomera.com



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