



***Axcelis is Uniquely Positioned with the Capability, DNA, and Unwavering Focus to solve customers' high value, high impact, ion implantation challenges.***

March 9, 2021

***axcelis***





## ***Safe Harbor Statement***

*This presentation and discussion contain forward-looking statements, including our expectations for future revenues, expense reductions, profits, and other results that are forward-looking statements under the SEC's safe harbor provision. These forward-looking statements are based on management's current expectations, and are subject to the risks inherent in our business. These risks are described in detail in our Form 10-K annual report and other SEC filings. Our actual results may differ materially from our current expectations. We do not assume any obligation to update these forward-looking statements.*



## Axcelis at a Glance

- Global leader in technology development and manufacturing of ion implant systems and services for the semiconductor industry for over 40 years
  - Serving an estimated \$1B ion implant systems market
  - Based in Beverly, MA with headcount of approximately 1000 worldwide
  - Global infrastructure supporting customers in 31 countries
  - Growing installed base of over 3200 tools
  - Strong IP portfolio with >800 patents
- Supplier of record to leading semiconductor CAPEX spenders in all market segments including DRAM, Flash, Foundry and Logic



## Recent Axcelis Technologies Achievements

©2021 FORBES MEDIA LLC. USED WITH PERMISSION



**Axcelis Named to Forbes' List of  
America's Best Small-Cap Companies  
Ranking #19 Out of 100 Companies**



*The Boston Globe*

**2020**  
**Top 100**  
**WOMEN-LED BUSINESSES**

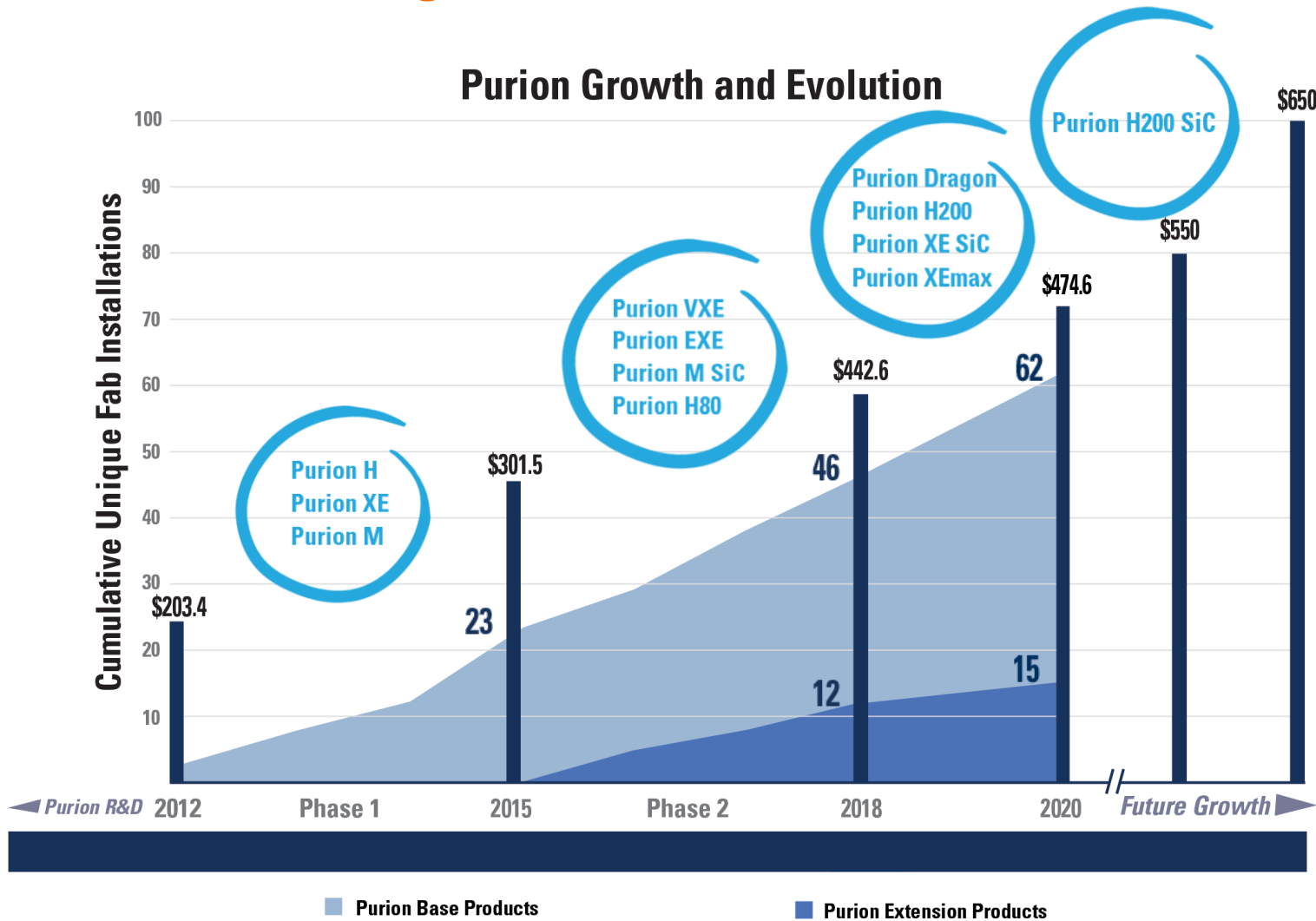
***axcelis***

# *Purion – The Core of Our Growth Strategy Expanding Into New High Value Applications*



- Innovative scanned spot beam architectures with advanced energy filters
- Common endstation and control system
- Advanced source technology

## Purion – Fueling Axcelis' Growth



- Introduced new Purion products that solve high value, high impact implant challenges that will drive customer, employee and investor satisfaction
- Created the organization required to develop the common platform and base products
- Established differentiated segment-focused Purion products that specifically meet customers' emerging implant challenges
- Accelerated the segment-focused strategy into the high current market that represents ~50%-55% of the Ion Implant TAM




**axcelis**

# New Purion Products Target High Value Applications and Market Segments

| Ion Implantation                  |                        | Base Purion Product | Power   | Image Sensors | Power            | Image Sensors | Advanced Memory/Logic |
|-----------------------------------|------------------------|---------------------|---------|---------------|------------------|---------------|-----------------------|
| High Current<br>~50%-55% of TAM   | Common Purion Platform | H                   | H80     |               | H200<br>H200 SiC |               | Dragon                |
| High Energy<br>~30% of TAM        |                        | XE                  | EXE     | EXE<br>VXE    | XE SiC           | XEmax         |                       |
| Medium Current<br>~15%-20% of TAM |                        | M                   | M SiC   |               |                  |               |                       |
|                                   |                        | Phase 1             | Phase 2 |               | Current Phase    |               |                       |



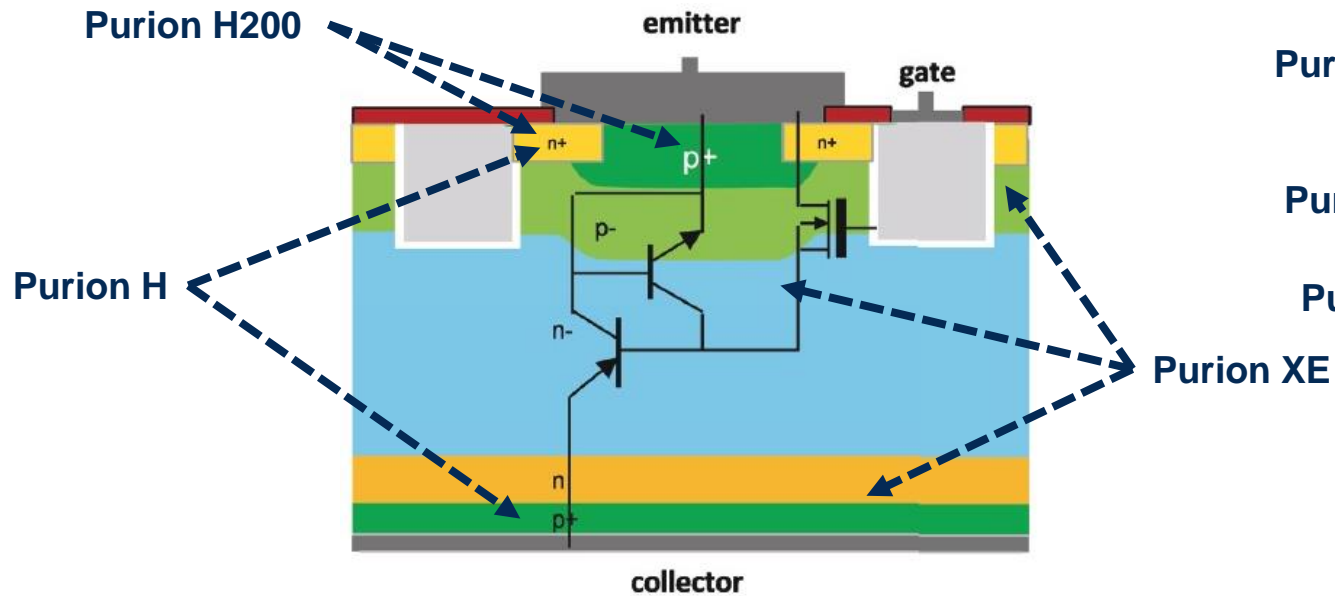
## Purion Power Series – Enabling Advanced Power Device Technology

| <div>Purion</div> <div>Power Series</div>  |  | SiC |    |                  | Si |    |   |                  |
|--|--|-----|----|------------------|----|----|---|------------------|
|  |  | M   | XE | H <sub>200</sub> | M  | XE | H | H <sub>200</sub> |
|   | Aluminum Implantation                      | ✓   | ✓  | ✓                |    |    |   |                  |
|  | 150mm Wafer Handling                       | ✓   | ✓  | ✓                |    |    |   |                  |
|   | Hot Implantation to 700°C For 150mm Wafers | ✓   | ✓  | ✓                |    |    |   |                  |
|  | 80keV Antimony Implantation                |     |    |                  |    |    | ✓ |                  |
|  | 200mm Thin Wafer Handling                  |     |    |                  | ✓  | ✓  | ✓ |                  |
|  | 80keV High Current Capability              |     |    |                  |    |    | ✓ |                  |
|  | 200keV High Current Capability             |     |    | ✓                |    |    |   | ✓                |

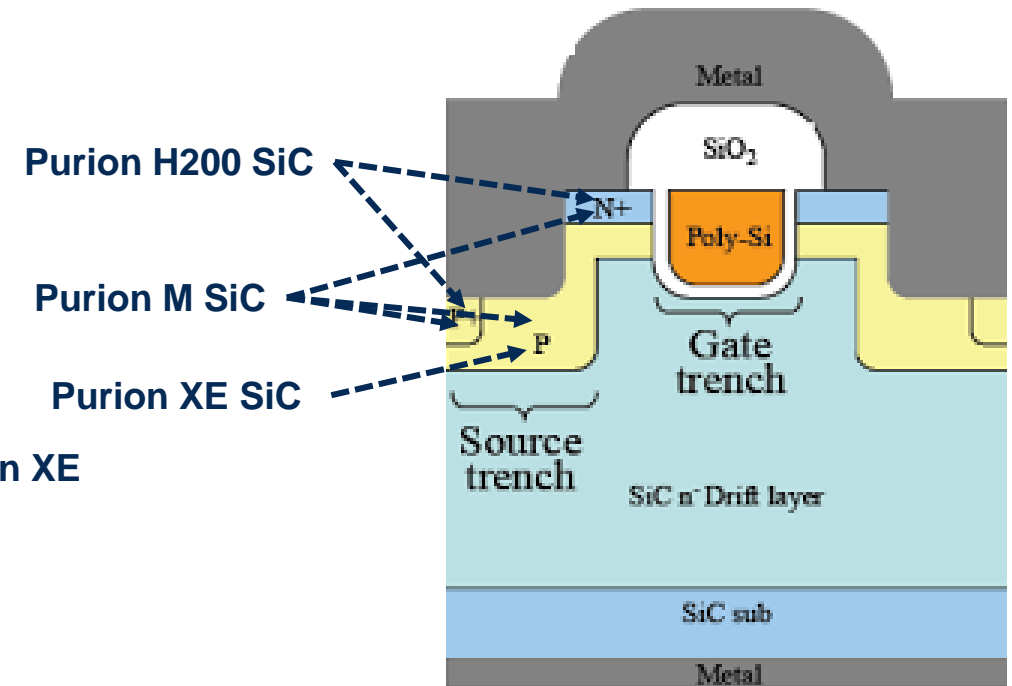


## Power Devices are Extremely Ion Implant Intensive

# Si IGBT Power Device



## SiC Trench MOSFET Power Device



## Recent Purion Placements Supporting the Power Device Market

### AXCELIS ANNOUNCES FIRST ORDER FOR PURION IN JAPAN

*System Provides Enabling Technology to Meet the Unique Needs  
of Emerging Power Device Applications*

**BEVERLY, Mass., April 2, 2020** -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of innovative, high-productivity solutions for the semiconductor industry, announced today that it has received an order to ship its first Purion system into Japan. The order, from a leading Japanese semiconductor manufacturer, is for the Purion XE Power Series™ implanter. This Purion XE product line extension will be used in high volume production of power devices supporting automotive, mobile and IoT applications.

### AXCELIS SHIPS FIRST PURION H200™ HIGH CURRENT IMPLANTER AND FOLLOW ON PURION M SiC™ MEDIUM CURRENT IMPLANTER TO LEADING POWER DEVICE MANUFACTURERS

*Purion Systems Feature Enabling Technology for Power  
Device Applications*

**BEVERLY, Mass., Sept. 30, 2020** -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of innovative, high-productivity solutions for the semiconductor industry, announced today the first shipment of a Purion H200 high current implanter evaluation system, as well as another follow on order for a Purion M SiC medium current implanter to leading power device manufacturers. The Purion H200 system is targeted for use in a production ramp for Si power devices and the Purion M SiC system is being utilized for a fab capacity expansion. Both systems shipped in the third quarter.

### AXCELIS SHIPS PURION H200™ HIGH CURRENT IMPLANTER TO A SECOND LEADING POWER DEVICE MANUFACTURER

*Innovative System Features Enabling Technology for  
Power Device Applications*

**BEVERLY, Mass., Feb. 2, 2021** -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of innovative, high-productivity solutions for the semiconductor industry, announced today the second shipment of the Purion H200™ high current implanter. The Purion H200 system went to a leading power device manufacturer, targeted for use in a production ramp for Si power devices. The system shipped in the fourth quarter.

### AXCELIS ANNOUNCES FIRST SHIPMENT OF 'PURION H200 SiC POWER SERIES' IMPLANTER

*Enabling Technology for SiC Power Device Applications*

**BEVERLY, Mass., March 8, 2021** -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of innovative, high-productivity solutions for the semiconductor industry, announced today that it has shipped the first Purion H200 SiC Power Series™ implanter. The new Purion H200 product line extension, featuring innovative silicon carbide capability, shipped to a leading power device manufacturer to support a production ramp for SiC power devices. The system shipped in the first quarter.



## Automotive Megatrends Driving Silicon Consumption

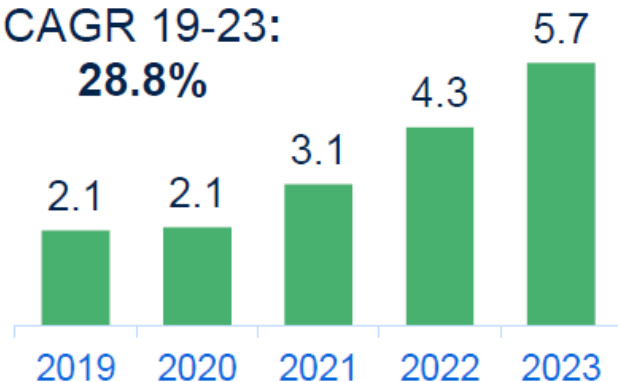
Automotive transformation boosting silicon value in the Car

Light vehicle semiconductor content

2019 **\$36.6B** **Auto Semi TAM** **+5.4% CAGR** **2023 \$45.1B**

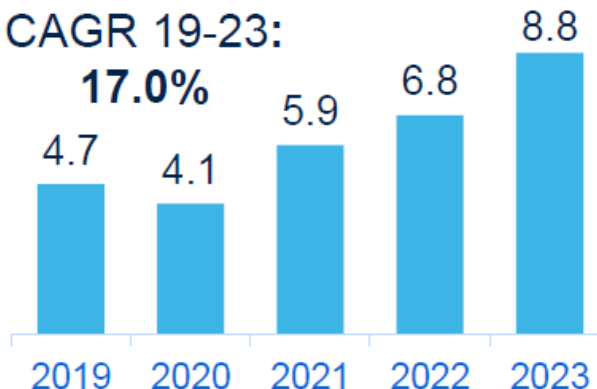
Electrification TAM [B\$]

CAGR 19-23:  
**28.8%**



ADAS TAM [B\$]

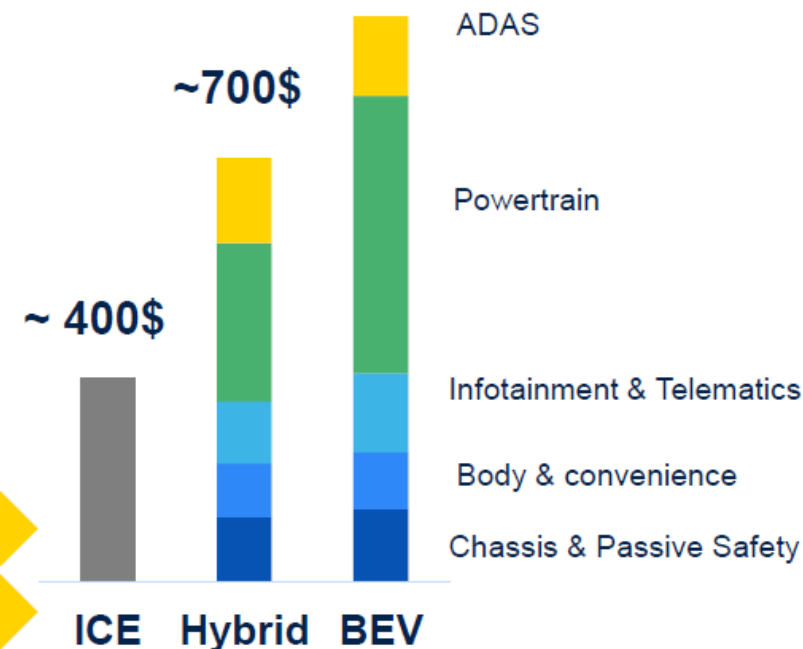
CAGR 19-23:  
**17.0%**



Increase Semi content by level of **ADAS**

Increase Semiconductor content by level of **Electrification**

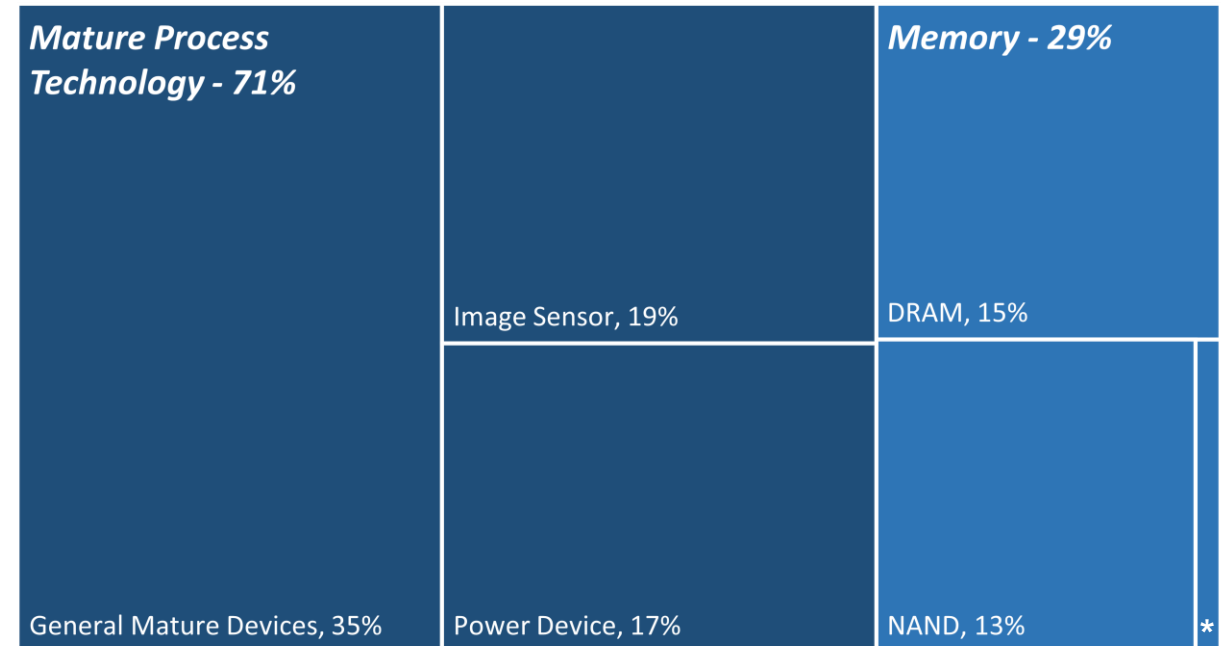
Average semiconductor content per car [\$]  
**>1000\$**



## Strong Systems Revenue Growth in Key Target Market Segments for 2020

- Long term growth expected in key market segments due to the highly differentiated Purion ion implanters and extensions
- Automotive adoption of EV and ADAS expected to drive high growth in power and image sensor devices
- 5G adoption expected to drive growth across all semiconductor market segments

2020 Market Segment Systems Revenue





## Target Business Model (GAAP)


### The Path to Market Share Leadership

| Revenue  | \$301.5M<br>2015(A) | \$267.0M<br>2016(A) | \$410.6M<br>2017(A) | \$442.6M<br>2018(A) | \$343.0M<br>2019(A) | \$474.6M<br>2020(A) | \$550M<br>Model* | \$650M<br>Model* |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------------|------------------|
| Gross Margin                                     | 33.7%               | 37.3%               | 36.6%               | 40.6%               | 42.0%               | 41.8%               | 42-43%           | 44-45%           |
| Total OPEX                                       | 26.8%               | 31.1%               | 24.9%               | 27.0%               | 35.0%               | 29.6%               | ~25%             | ~24%             |
| Operating Profit                                 | 6.9%                | 6.2%                | 11.7%               | 13.5%               | 7.1%                | 12.2%               | 17-18%           | 20-21%           |
| Free Cash Flow<br>(Cash From Operations – Capex) | 5.5%                | (4.1%)              | 11.9%               | 9.5%                | (7.5%)              | 13.2%               | >15%             | >17%**           |

13 \* The model is not a forecast of results but is intended to be indicative of the annual results Axcelis may achieve based on our strategic objectives

\*\* Assumes our federal net operating loss carryforwards have been consumed and Axcelis is now paying cash taxes





*Axcelis is Uniquely Positioned with the  
Capability, DNA, and Unwavering Focus to  
solve customers' high value, high impact,  
ion implantation challenges.*

***axcelis***