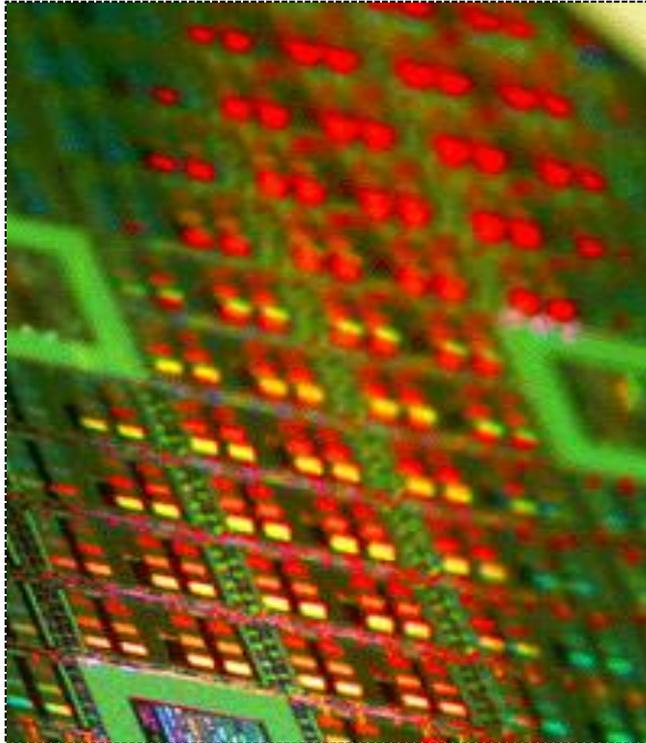




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# AXT

A Material Science Company

AXT Overview & STAR Market Update  
September 2021



# Legal Disclosure

## SEE ADDITIONAL RISK FACTORS ON FORM 10-Q AND FORM 10-K

This presentation includes forward-looking statements about the Company's business, operations, financial outlook, sales, customers, utilizing our new manufacturing sites, customer needs, life cycles of our products and applications, our partially owned raw material companies and other matters. In addition, completing the steps in connection with the proposed listing of shares of Tongmei on the STAR Market, being accepted to list shares of Tongmei on the STAR Market and the timing and completion of such listing of shares of Tongmei on the STAR Market are each considered forward-looking statements. Forward-looking statements are subject to risks and uncertainties and our actual results could differ materially from what is described. In addition to the risks associated with developing complex technology, our future results will depend on factors including: the impact of COVID-19; the timing and receipt of significant orders; the cancellation of orders and return of product; emerging applications using chips from our substrates; efficiently utilizing our new manufacturing sites, complying with the growing environmental, health and safety and the chemical regulations in China; end-user acceptance of products containing chips using our substrates; our ability to bring new products to market; product announcements by our competitors; the ability to control costs and improve efficiency; cancellations of orders; the withdrawal, cancellations or requests for redemptions by private equity funds in China of investments in Tongmei; the administrative challenges in satisfying the requirements of various government agencies in China in connection with the investments in Tongmei and the listing of shares of Tongmei on the STAR Market; continued open access to companies to list shares on the STAR Market; investor enthusiasm for new listings of shares on the STAR Market; geopolitical tensions between China and the United States; and other factors. For further discussion of risks and uncertainties please see the Company's most recent Form 10-K and Form 10-Q filings.



# AXT Snapshot

- **History:** Founded in 1986; IPO in 1998
- **Products:** Alternative wafers when silicon will not work
- **Process Technology:** Pioneered Vertical Gradient Freeze (VGF) crystal growth; substantial process technology and IP
- **Facility:** Headquarters in Fremont, CA
- **Manufacturing:** Launched in China in 1998. Operating in three locations:
  - Beijing – Indium phosphide crystal growth and wafer processing
  - Dingxing – Gallium arsenide and germanium wafer processing
  - Kazuo – Gallium arsenide crystal growth; facility also houses two raw material joint ventures: Beijing BoYu Semiconductor Vessel Craftwork Technology Co., Ltd. (“BoYu”) and Nanjing JinMei Gallium Co., Ltd. (“JinMei”)
- **Operations:** Sophisticated supply chain model with ownership interest in 10 raw material companies



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# Indium Phosphide (InP) Market

- Growth engine ignited in 2014
- Applications using InP are expanding
- We expect a long product life cycle—mirroring GaAs

## Key Applications

- Data center connectivity (Silicon photonics)
- Passive Optical Networks (PONs)
- 5G telecommunications infrastructure
- Emerging market for medical sensors
- Upside – 5G mobile devices
- Upside – driverless cars

## Market Dynamics

- Strong barriers to entry
  - Crystal growth very difficult due to two key variables
  - Customer spec-driven market
- Three leading suppliers:
  - AXT, Sumitomo, and Japan Energy
- AXT is strategically adding capacity



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# Gallium Arsenide (GaAs) Market

- Our first strong growth engine, even before our IPO in 1998
- A long product life cycle populated with new applications
- Supplied first 8-inch gallium arsenide wafers to major customers in April 2021

## Key Applications

- LED lighting
- Industrial lasers
- Printer heads
- Power amplifiers
- 3-D sensing
- MicroLEDs

## Market Dynamics

- Market pushes wafer size
- Tier-one requires very low defect density (EPD)
- Consumer applications mean high volume
- GaAs not going away, keeps re-inventing itself
- New opportunities developing
- Limited competitive landscape:
  - AXT, Sumitomo, Freiberger



# Germanium (Ge) Market

- A single element wafer i.e. just Germanium
- Primary application is satellite solar cells:
  - Multi-junction solar cells
  - Weather, environmental, communication
- Market Dynamics:
  - Satellites increasingly in the news
  - Satellite solar cell market increasing
  - Difficult to make house calls
  - Difficult for customer to change supplier
  - AXT has strong relationships with multiple leading customers



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# Sophisticated Supply Chain

- Ownership interest in ten raw material companies in China
- Merging two jewels into Beijing Tongmei Xtal Technology Co., Ltd. (“Tongmei”)
- Direct visibility and influence in these markets
- Favorable cost/pricing
- A risk minimization strategy if supply shortages occur
- On the boards of all ten raw material companies
- AXT is uniquely positioned to secure key materials



*AXT's Beijing facility*



# Key Financials

	<u>2021</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(\$ in M)	<u>Q1</u>	<u>Q2</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>
<b>Revenue</b>	<b>\$31.40</b>	<b>\$33.70</b>	<b>\$95.40</b>	<b>\$83.30</b>	<b>\$102.40</b>	<b>\$98.70</b>
<b>Gross Margin %</b>	<b>36.80%</b>	<b>36.30%</b>	<b>31.70%</b>	<b>29.80%</b>	<b>36.10%</b>	<b>34.90%</b>
<b>Op Expense</b>	<b>\$8.00</b>	<b>\$8.30</b>	<b>\$26.30</b>	<b>\$25.10</b>	<b>\$24.90</b>	<b>\$21.80</b>
<b>Net Profit/(Loss)</b>	<b>\$3.40</b>	<b>\$4.40</b>	<b>\$3.20</b>	<b>(\$2.60)</b>	<b>\$9.70</b>	<b>\$10.10</b>



# STAR Market Listing Announcement

- Announced intention for Tongmei to IPO in China (announced on Nov. 16, 2020)
- Completed private equity investment funding in Tongmei in Jan. 2021. Private equity firms have invested approximately \$49 million in exchange for an approximately 7.28 percent minority interest in Tongmei.
- Separate listing of Tongmei, no change regarding the current Nasdaq listing of AXTI
- A convergence of factors:
  - The Shanghai Stock Exchange's Sci-Tech innovAtion boaRd (the "STAR Market") is now allowing the listing of foreign-owned entities
  - The STAR Market's focus is technology companies, including semiconductors & materials
  - Completion of relocation of gallium arsenide manufacturing to Kazuo and Dingxing
  - AXT's well-established presence in China: 20+ years and 1,200+ employees
  - IPO plan enhances our reputation at the local and provincial levels



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# Process and Milestones

- A long process, Tongmei is not expected to IPO until approximately Q2 or Q3 of 2022
- First step: need China entity ownership
  - Private equity round completed; approx. \$49M; \$624M valuation pre-money
  - Oversubscribed
- Reorganization underway. Includes:
  - Convert Beijing company into a stock issuing company (no change to operations)
  - Merge two material companies into Tongmei (JinMei and BoYu)
  - New audit required and is underway
- Complete filing documents in Q3 2021; we expect to file in late Q3 or Q4 2021
- China SEC takes a minimum of 6 months to review, means the listing may be approved in Q2 2022
- Assuming China SEC approval, we expect the actual listing to be in Q2 or Q3 of 2022
- Long time horizon increases risk of unforeseen issues and there can be no assurances that the Tongmei IPO will be completed. If Tongmei fails to go public by Dec. 31, 2022, PE investors can require that their investment is redeemed.



# Ownership of Tongmei

Ownership after reorganization and private equity investment:

- Since 1998, AXT owns 100% of Tongmei
- Private equity ownership from approximately \$49M investment is 7.28% of Tongmei
- Minority interest from JinMei and BoYu now own approximately 5.30% of Tongmei
- Employees of Tongmei, Jinmei and Boyu now own approximately 1.91% of Tongmei
- AXT, Inc. now owns approximately 85.51% Tongmei

Expected ownership after the IPO in 2022:

- AXT is required to sell an additional 10% of Tongmei in the IPO
- Tongmei plans to implement an employee stock ownership program totaling about 3%
- AXT will own approximately 72% of Tongmei; employees will own approximately 3%



# Benefits to Key Shareholders

- **AXT shareholders**
  - Attractive balance sheet, minimal dilution
  - Displays and leverages/unlocks China assets
  - Strengthens AXT's business development positioning
- **Our customers**
  - Increases confidence in our ability to scale up
  - Confirms our commitment to their projects and to winning their business
- **Our employees**
  - Creates excitement, pride and financial opportunity
  - Strengthens retention, motivation and commitment to excellence



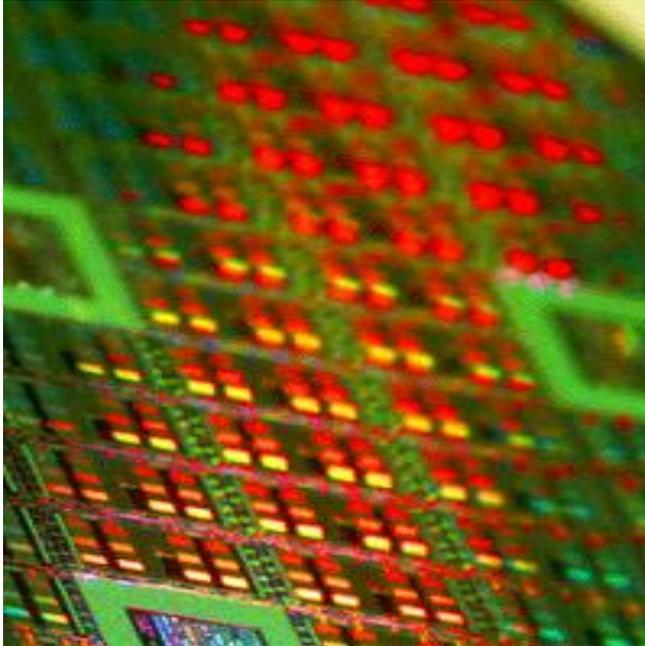
# Higher Valuation in China

- STAR focus: semiconductors, materials and actual manufacturing are favored
  - AXT checks all three boxes
- Longevity is respected. AXT began moving manufacturing to China in 1998 and was operational in 2000
- Now unlocking a valuable asset
- Manufacturing is respected and we are a unique kind of manufacturing company
- Ten raw material companies, starting some as early as year 2000
- BoYu and JinMei were merged into our main company, Tongmei, enhancing our structure
- After the consolidation, Tongmei now has over 1,200 employees
- Virtually all employees of the consolidated entity will be Chinese citizens, paying China income taxes
- End markets are visible and well understood
- We believe Micro LED applications are viewed with greater certainty



# AXT Market Opportunity

- New facilities, equipment and capacity
- Selling into major long-term technology trends: data center expansion, 5G, LED lighting and display, laser-based sensing, medical applications, and more
- Limited competitive landscape
- Market-leading InP technology with high barriers to entry
- Proprietary process technology, barriers to entry
- Access to both China and U.S. capital, U.S. quality standards; China cost structure
- The only player to have a position in raw materials
- Markets and business fundamentals look good
- Potential valuation of Tongmei at STAR Market IPO represents significant upside

A close-up photograph of a microchip, showing a grid of red and yellow components on a green substrate.

Thank You