



Applied Startup Technology & Research
Accelerator (ASTRA)

WINNING TOGETHER

Collaborating with Materials to Systems™
ecosystem to make possible a better future



INNOVATION is at the core of APPLIED MATERIALS' culture

About Applied Materials

Applied Materials, Inc. is the leader in materials engineering solutions used to produce virtually every new chip and advanced display in the world. Our expertise in modifying materials at atomic levels and on an industrial scale enables customers to transform possibilities into reality. At Applied Materials, our innovations Make Possible a Better Future.

Broad and Deep Capabilities

We maintain one of the broadest and deepest portfolios of technologies in the industry to create and modify materials—shaping their electrical, physical, mechanical, and optical properties. Through highly sophisticated methods of deposition, removal, modification, and analysis, we manipulate materials at an atomic level on an industrial scale. An overview of our competence includes:

- Atomic Layer Deposition (ALD)
- Chemical Mechanical Planarization (CMP)
- Chemical Vapor Deposition (CVD)
- Electrochemical Deposition (ECD)
- Epitaxy (EPI)
- Etch Processes
- Ion Implant
- Metrology and Inspection
- Physical Vapor Deposition (PVD)
- Rapid Thermal Processing

WORLD'S #1

semiconductor and display equipment company



\$17.2 billion
revenue



\$2.2 billion
R&D investment



~14,300
patents



AMAT stock
listing on
NASDAQ



Headquartered
in California's
Silicon Valley



~24,000 employees
110 locations
in **19** countries

FORTUNE
WORLD'S MOST
ADMIRED
COMPANIES 2021

TOP
100
BARRON'S
Most
Sustainable
Companies
2021

INVESTOR'S BUSINESS DAILY
2020
BEST
ESG
COMPANIES
ENVIRONMENTAL, SOCIAL & GOVERNANCE

Elevate with Co-innovation and Co-creation

Applied Startup Technology & Research Accelerator (ASTRA)

Applied Materials is leveraging its technical and industry expertise to accelerate the growing startup ecosystem in India. The aim is to collaborate with startups and transform disruptive possibilities into reality. We also connect the selected startups with our network of customers, supply chain partners, and co investors across leading corporate and financial venture capital firms. We are looking to meet startups that are pioneering innovations in areas of our interest.

Applied Materials is actively collaborating with its knowledge partners, academic and industry ecosystem to engage with the startup ecosystem.

As part of the ASTRA initiatives, Applied Materials aims to engage with the ecosystem using multiple approaches from consultation, collaboration, joint development to investment opportunities. Startups selected for ASTRA will be assessed based on the following criteria:

- Fit to Applied (Technology & Market)
- High-Value problems addressed
- Differentiation from existing market solutions
- Potential addressable market

We are part of a close network of academics, researchers, government organizations, commercial partners and entrepreneurs who are shaping the future together.



“ ASTRA plays a critical role in helping us connect with next-gen start-ups. With the third cohort, we look forward to continue engaging with disruptive start-ups across the Materials to Systems™ stack that hold the promise of bringing breakthrough innovations to market in collaboration with Applied Materials. ”

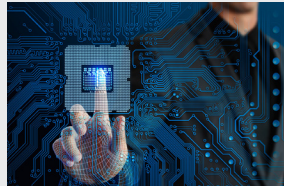
**Anand Kamannavar, Global Head, Applied Ventures, LLC,
and sponsor of ASTRA**

Focus Areas for ASTRA 2022

We are looking to engage with startups with products, platforms and solutions in these areas:



Life Sciences



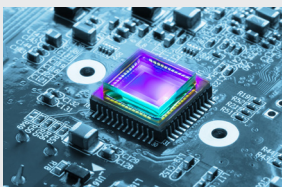
Semiconductor and
Display Technologies



Advanced Optics
and Photonics



Resilient
Supply Chains



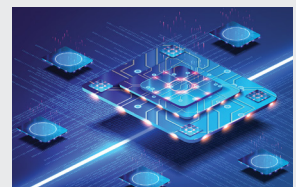
Sensors



Advanced Materials



Industry 4.0



AI Hardware



“ We are excited to embark on a journey with innovative start-ups in India in our joint quest to address global inflections with materials engineering solutions. For Applied Ventures, the vibrant start-up ecosystem in these regions are an excellent opportunity to invest in and collaborate with innovative deep tech start-ups. The mature and growing high tech and entrepreneurial landscape is a great place for us to identify exciting opportunities focused on disruptive innovation with new products and business models. ”

**Om Nalamasu, Senior Vice President and Chief Technology Officer,
Applied Materials, Inc., and President, Applied Ventures, LLC**

ASTRA Program



“ The program’s ultimate success lies in fostering innovation, collaboration and entrepreneurship to nurture a vibrant start-up ecosystem. Having access to Applied’s technology expertise in materials engineering, commercialization and large-scale manufacturing provided a tremendous boost to start-ups in the previous two editions of ASTRA. The third edition of the program aims to empower the forthcoming entrepreneurs by expediting their innovations and driving sustainable and equitable growth. ”

**Srinivas Satya, Country President, and Managing Director,
Applied Materials India Private Limited**

The Journey

Our program provides its participants access to the best of Applied Materials – its people, network and advanced technologies.



As a partner, Applied Materials will act as a consultant to start-ups for addressing market and technology challenges and to explore potential scale-up pathways. The selected companies will also have access to the product development expertise, best known methods for maximizing market opportunities, Applied Infrastructure and ecosystem connect through this engagement.

The product/solution must align with Applied Material’s interest in Life Sciences, Semiconductor and Display Technologies, Advanced Optics and Photonics, Resilient Supply Chains, Sensors, Advanced Materials, Industry 4.0 and AI Hardware

Startups that are selected from ASTRA will have access to a selection of the following opportunities



ASTRA 2020 selected start-ups: aiNDRA (Life Sciences), EcolibriumEnergy (Industry 4.0), and Multi Nano Sense (Air Quality/CMOS/R2R)

ASTRA 2019 selected start-ups: Pandorum Technologies (3D Bio-printing), Falkonry (Advanced Analytics) and Shilps Sciences (Single-cell Transcriptomics)

Applied Ventures (AV)

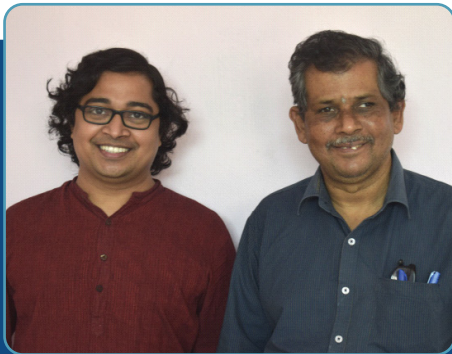
Applied Ventures, LLC is the venture capital arm of Applied Materials, Inc., (NASDAQ: AMAT). For more than a decade, Applied Ventures has invested in start-ups that are pioneering innovations in smartphones, augmented reality and virtual reality, AI, driverless cars, big data, life sciences, 3D printing, robotics, cleantech, and advanced materials. Start-ups can gain access to new materials engineering and semiconductor technology innovations and leverage our global fab infrastructure to validate high-performance devices and scale faster. We offer start-ups atomic-level engineering capabilities on 200mm/300mm silicon wafers, glass substrates and roll-to-roll substrates. Applied Ventures is stage agnostic and invested more than \$300M globally. We have invested in over 85 companies so far, across 15 countries.

Applied Ventures Sample Portfolio



For more details on collaboration and our investment portfolio, visit <http://www.appliedventures.com>

Quotes from ASTRA 2020



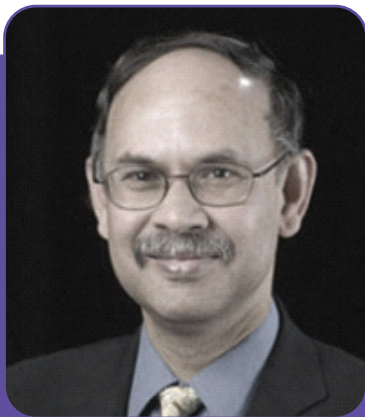
“ LightspeedAI benefitted greatly from our participation in ASTRA 2020 hosted by Applied Ventures and Applied Materials India. We got an opportunity to share our ideas with the Applied Global Management and technology leadership across continents.

The best part was the engagement over the year – Applied Materials managers mentored us in our interface with global incubators like Luminate, NY and AMAT letter of support facilitated us to engage with A*STAR IME, Singapore. We got an opportunity to pitch to potential investors globally thanks to their introductions.

We look forward to a deeper, continued relationship with AMAT teams as we grow in this sector with suggested end-customers. We encourage start-ups to apply to this unique opportunity and gain valued benefits.”

Rohin and Ramana

Founders,
LightspeedAI Labs Pvt Ltd.



“ Our participation and recognition as “Most Out of the Box Solution” at ASTRA 2020 was highly enriching and has opened several high-value use cases for our Platform CMOS MEMS Omni-Gas Sensor Technology. We started working closely with AMAT towards a funded POC for demonstrating capability to develop cutting-edge real-time, in-situ gas analysis systems for the semiconductor

equipment industry. Our engagement commenced with Applied Materials senior team in Santa Clara and Bengaluru. The engagement and interactions are progressing meaningfully with the necessary resource support a start-up requires to tackle high-value problems with patient innovation, with transparent technical objectives and clear intent of a larger framework if we are successful. We are proud and excited to be a part of ASTRA program. It provides the ideal support and scale-up ecosystem that a complementing technology Start-Up like Multi Nano Sense Technologies looks for.”

Prof. Vasant Kumar

Co-Founder & Director,
Multi Nano Sense Technologies

Selection Criteria

- Available demonstration of proof-of-concept or available within 3 months
- Seed funding should have been previously secured
- Ongoing engagement with customer/s or potential customers is an advantage but not mandatory
- IP portfolio and/or Freedom to Operate is an advantage
- The product/solution must align with Applied Material's interest in Life Sciences, Semiconductor and Display Technologies, Advanced Optics and Photonics, Resilient Supply Chains, Sensors, Advanced Materials, Industry 4.0 and AI Hardware
- Startup must have a differentiated solution with a strategic fit to Applied

To Apply

- Applications for ASTRA 2022 are now open. Fill up the application form [HERE](#)
- In your executive summary, please include: Biographical information of key management, Description of the product and/or service, Explanation of your market, Competition and Differentiation, Funding history and Business plan.
- Please mention 'For ASTRA' in the Description field of the submission form.

For any queries, reach out to us at Applied_Idea_Accelerator@amat.com

DATES TO REMEMBER:

- Last date to submit application : **6th December, 2021**
- Announcement of shortlisted startups : **24th December, 2021**
- Tech Talk : **January – February, 2022**
- Pitch : **February 2022**
- Venue : **Bengaluru (India) & Virtual**

Please note:

Once we receive the information, it can take 2-4 weeks for the initial review process. Upon completion of this initial review, you will either be asked to submit an additional information or informed of our decision.

Please do not disclose any confidential information to us.

By submitting the form, you agree and represent to us that any information or data that you provide to us ('Information') is considered non-confidential and non-proprietary to you or any other party, and Applied Materials has no obligation towards you or any other party to protect such information. Any information you transmit shall be considered non-confidential and non-proprietary information regardless if marked 'Confidential' or 'Proprietary'. Applied Materials will have no obligation of any kind with respect to such information. By communicating with Applied Materials, you acknowledge and agree to the foregoing terms. If, after consideration of your non-proprietary disclosure, we wish to have further discussions, we may wish to enter into a confidentiality agreement with you.