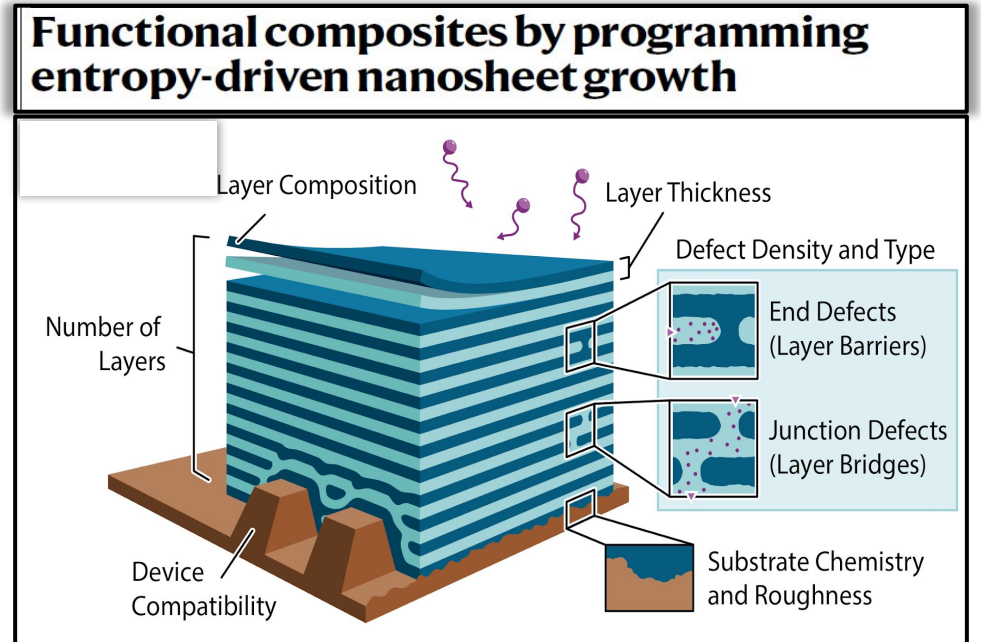
MATERIUM TECHNOLOGIES

Revolutionizing Coatings: Faster, Smarter, Stronger - Thanks to AI & Nanoscience

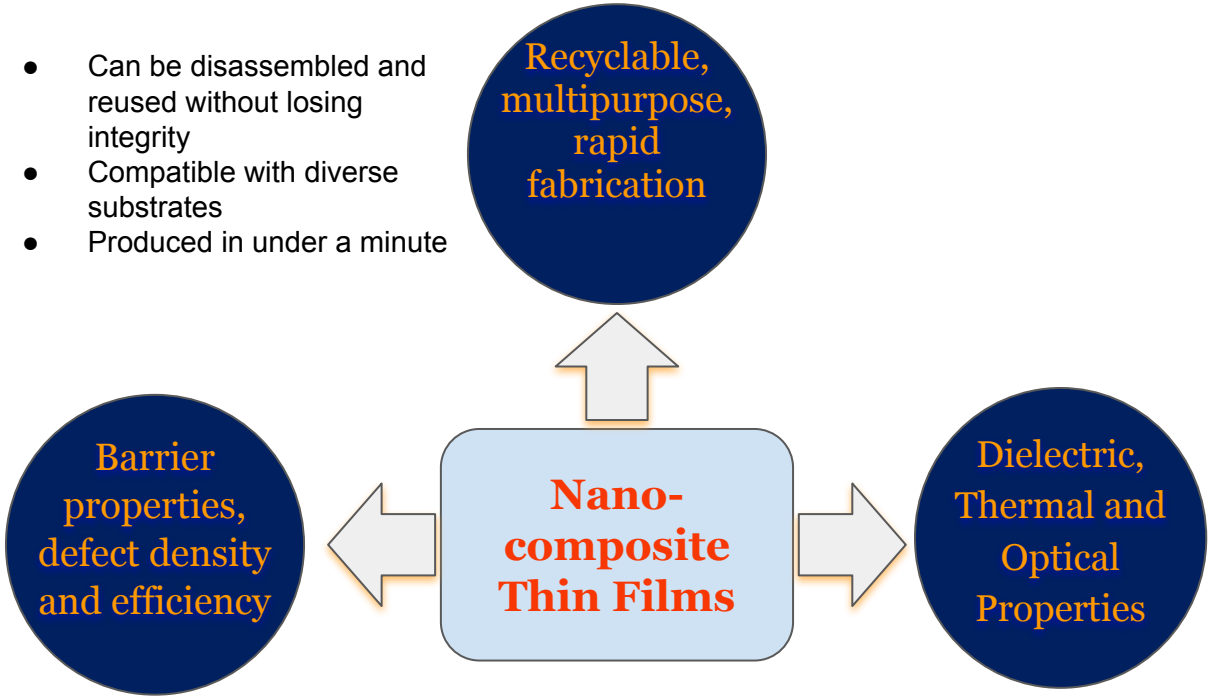
What is the problem?

- Semiconductor fabs face yield losses and limited material versatility.
- Incompatible with flexible substrates and have high defect rates
- Traditional PECVD SiO_2 coatings are costly and require high-energy, high-temperature deposition



Self-assembling nanosheets utilizing entropy-driven assembly for scalable, defect-controlled manufacturing

- Can be disassembled and reused without losing integrity
- Compatible with diverse substrates
- Produced in under a minute



- High-performance barrier materials of more than 200 stacked nanosheets
- Less than 0.056 μm^{-2}
- 98% efficiency

- Low conductivity for advanced electronics - dielectric barrier
- Transparent or opaque to specific wavelengths
- Thermal conductivity

POLSKY
Center for Entrepreneurship and Innovation
THE UNIVERSITY OF CHICAGO

New Jersey CSIT
Commission on Science, Innovation and Technology
NJ EDA
ECONOMIC DEVELOPMENT AUTHORITY

NSF CORPS
NSF Innovation Corps

cradle to commerce

What the Market Needs – Metrics That Matter!!

Coatings with Dielectric Breakdown strength > 300 V/μm is a key metric for reliability in high-density ICs, power modules, and multilayer packages

Thinner coatings with tensile strength over 30 MPa are needed for compact electronics devices to make them flexible & prevent cracks

Conformal coating with above 120℃ glass transition tolerance needed for PCB coating

"Ah-Ha" Moments - Deep Dive into the MicroElectronic Space

"If you can supply something that has excellent barrier properties, really good dielectric properties… and you can fit them in between the electronics… that's probably a huge contract."

NIST National Institute of Standards and Technology - *Stian Romberg*

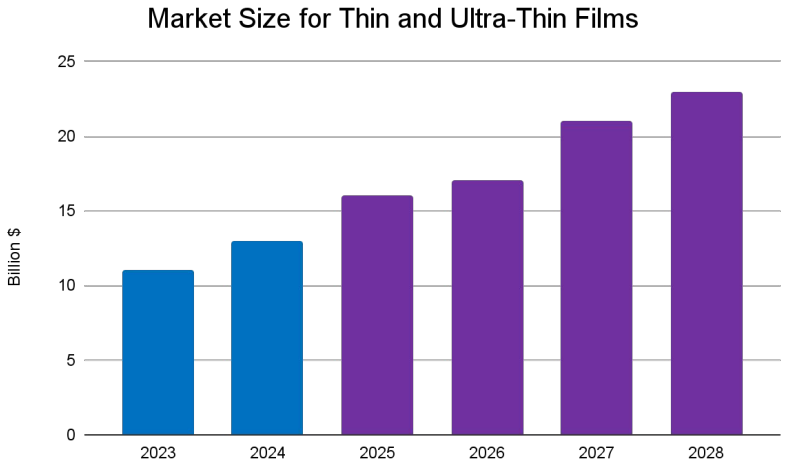
"Thin, flexible, and thermally conductive materials that can handle tight geometries - that's exactly the kind of thing we need for wearable and flexible electronics."

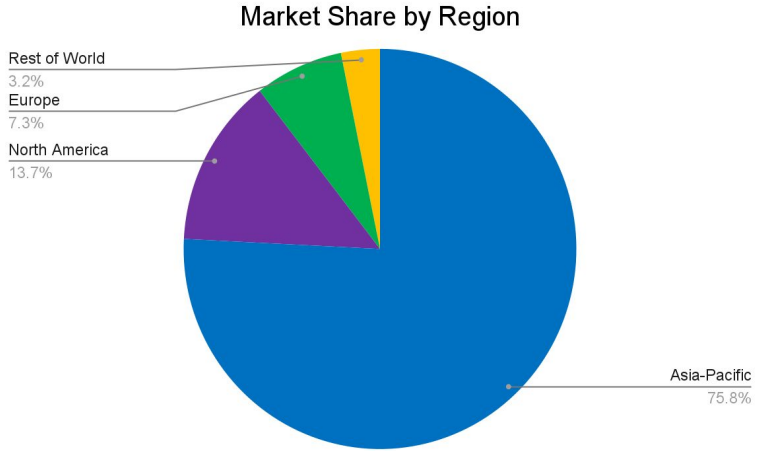
SLAC - *Chris Tassone*

From Broad Possibility to Focused Opportunity

Competitive Landscape

We Beat the Multi-Layer Stack





Market Opportunity
$23 B
By 2028 with 13.5% CAGR

Key competitors:

- Semiconductor Materials: JSR, Tokyo Ohka Kogyo, DuPont, Fujifilm (70%+ market share)
- Optical coatings: Materion Balzers, Edmund Optics, Alluxa, NACL, Iridian

Materium’s Team

A strategic leader with 30+ years of experience managing high-impact teams and corporate advisory projects. Scott brings dual expertise with an MBA and a Master’s in Artificial Intelligence, guiding Materium with vision and execution.

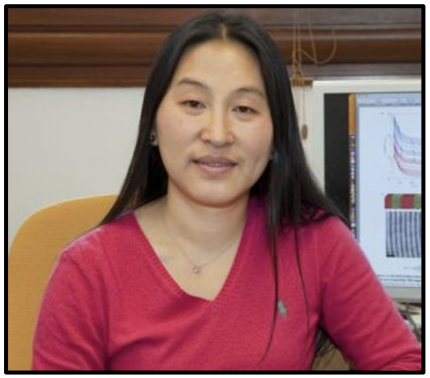
Scott Daniel
Co-Founder

A data-driven innovator with deep expertise in machine learning, data analysis, & software development. With Master’s degrees in both Data Science and Applied Physics, Sheldon bridges cutting-edge tech with real-world applications.

Sheldon Fereira
Co-Founder

A globally respected materials scientist with over 30 years of research experience and 450+ publications. Dr. Ravindra anchors the team with scientific depth and technical leadership in materials and engineering innovation.

Dr. N.M. Ravindra
Technical Lead



Dr. Ting Xu is a world-renowned expert in nanomaterials and self-assembly, whose groundbreaking research at UC Berkeley and Lawrence Berkeley National Laboratory forms the foundation of Materium Technologies' core innovations.

Dr. Ting Xu
Principal Scientific Advisor

Swati

MEng Mechanical Engineering

Brandon

Masters of Business Administration

Conner

Masters of Business Administration / MEng

Jeyhun

LLM - Berkeley Law School

Payal

MEng Materials Science Engineering

ACTION PLAN

1

Follow Up with Customers

Use network developed during I-Corps customer discovery to determine precise specifications for their needs.

2025 - infinity

2

Apply for SBIR Grant & Fellowship Programs

Apply for an NSF SBIR Phase 1 grant to further refine our materials and establish “scalability”.

July 2025

3

Negotiate JDA

Establish Joint Development Agreements with at least two prospective customers to develop prototype materials.

2025 Q4

4

Raise $1–2M for Scale-up & Commercialization

Raise $1–2M from investors and grants to fund scale-up and team expansion.

Late 2025–Mid 2026

5

Scale-Up & Pilot Testing

Scale up to pilot production scale using SBIR Phase 2 and/or equity seed funds.

2026-2027

And Our Journey Continues…


thank you!