

Next Chapter Meeting Thursday, May 8th

NJ SAMPE is excited to welcome two guests from long-time Chapter sponsor [Airtech International](#) for our May meeting. Globally recognized for their vacuum-bagging and composite tooling expertise, Airtech has been expanding its products and services to support large-scale additive manufacturing of tooling for composites.

Tennessee-based Gregory Haye, Director of Additive Manufacturing, will present a technology and capability overview of large format printing, materials, and application.

Location:

Evonik - 2 Turner Place, Piscataway NJ

Agenda:

5:30 PM - Networking & Dinner

6:30 PM - Presentation

Registration:

Students: No charge, with RSVP

Professionals: \$30

Pay at the door or [online](#).

RSVP to megan@njsampe.org by May 6th.

Calendar

NJ SAMPE Events

May 8, 5:30 PM

Technology and capability overview of large format printing, materials, and application
Gregory Haye
Director of Additive Manufacturing, Airtech
Location: Evonik, Piscataway, NJ

June 5, 4:30 PM

TA Instruments Seminar & Lab Tour
Location: New Castle, DE
*Joint meeting with the
Baltimore-Washington Chapter*

SAMPE Webinars

May 7, 10 AM PT (1 PM ET)

Panel: "Improving Composites Toughness"

Presented by the
SAMPE Technical Committees

[Register](#)

SAMPE 2025

May 19 - 22

Indianapolis, IN

CAMX 2025

September 8 - 11

Orlando, FL

Young Professional Spotlight:

Innovating Multi-Material Composites Through Advanced Manufacturing

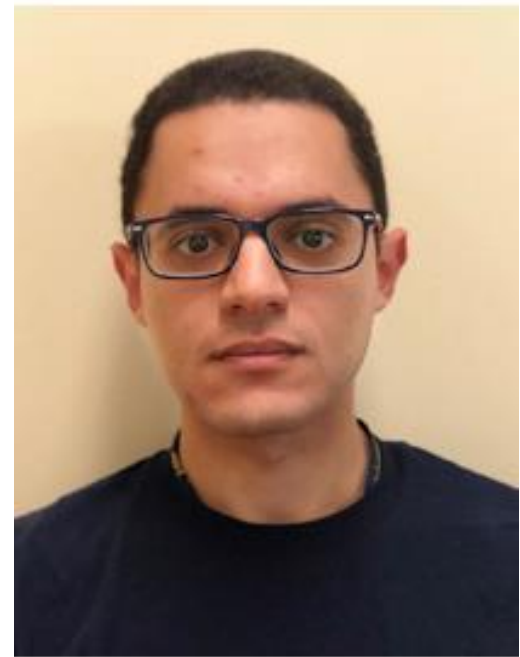
Ahmed M. H. Ibrahim holds a Ph.D. in Chemical Engineering from Drexel University, where he is finishing up a postdoctoral fellowship in the Materials Science and Engineering Department.

His experience includes six years of interdisciplinary research in the field of multi-material composites, covering the fabrication, characterization and testing of structures made from combinations of polymers, inorganic metal-based fillers, and fibers.

During his doctoral work, Ibrahim spearheaded the development, processing, and mechanical testing endeavors of advanced polymer composites - namely fiber-reinforced thermosets and spatially resolved multi-resin structures fabricated via additive manufacturing (AM), particularly digital light processing (DLP). With proper optimization, the technology facilitated production of fiber-reinforced polymers with excellent mechanical properties, outperforming most other AM techniques, presenting itself as a viable alternative to traditional methods given remarkable reduction in processing requirements. Moreover, DLP allowed easy secondary material incorporation (interleaf) to counteract delamination resistance in fiber laminates, which is crucial for extending their service life, a common issue in this class of composites. This work has earned international recognition, including a first-author publication selected among the top 0.4% in Polymers (MDPI) for 2023.

Shedding light on other composites made with DLP, Ibrahim's work laid the foundation for predictive structure-property relationships in printed multi-resin composites. Through judicious control over domain size, chemistry and 3D structure using computer-aided design (CAD), testing of hundreds of replicates and validation through phase-field modelling, his results established the importance of mimicking nature in tailoring material interfaces to synergistically combine target properties in a single structure.

Ibrahim has also demonstrated that proper crystallographic tuning of metal oxide fillers reflects positively on their reinforcing capabilities in polymers. Results from his postdoctoral work on high-temperature treated one-dimensional lepidocrocite titania indicate their ability to enhance thermosetting polymer strength without compromising the host material's flexibility, an extremely rare combination in this class of polymers.



Ahmed M. H. Ibrahim, PhD. Active chapter member open to industry opportunities upon conclusion of post-doc in June.

If any of these research endeavors sound familiar, readers may recall that Ibrahim has presented his work at several Chapter events:

2023 Regional AM Symposium

"Novel Technique for Controlled Fabrication of Multi-material Composites via Additive Manufacturing"

2024 Student Night

"Composite Materials: Famous Classes and Their Applications, Testing and Manufacturing Difficulties in 3D Manufacturing"

Looking ahead, Ibrahim is actively learning about advances in both Artificial Intelligence (AI) and Machine Learning (ML) models with regards to their applicability in engineering and manufacturing.

Currently, he is seeking roles in industry where he can lead innovations in materials development. He is pursuing opportunities to contribute to Product R&D, Process Engineering and Optimization, or Material Science and Technology Development.

Ibrahim is especially interested in contributing to enterprise-level efforts that leverage interdisciplinary collaboration to scale novel materials from lab to market. Whether working on next-gen packaging, aerospace structures, or bio-compatible materials, he is motivated by the challenge of transforming fundamental research into impactful, real-world solutions.

Follow Ibrahim's research on [ResearchGate](#) or [Google Scholar](#).

Connect with him on [LinkedIn](#).

Sponsor of the Month:

Airtech International

Airtech International, Inc. is a division of Airtech Advanced Materials Group, the largest manufacturer of vacuum bagging and composite tooling materials for prepreg/autoclave, resin infusion, and wet lay-up processes up to 799°F (426°C).

Their product line includes vacuum bagging films, release films, pressure sensitive tapes, mold releases (non-liquid), peel plies, breathers & bleeders, sealant tapes, vacuum bag connectors & hoses, rubber, pressure pads, cutting tools, vacuum leak detectors, shrink tape, PTFE coated fiberglass, tooling prepregs and resins, and carbon and glass reinforcements.

Business focus areas include aerospace, wind energy, marine, automotive, printed circuit board, solar energy and general FRP composites.

They have a global presence, with facilities in California, Tennessee, Luxembourg, England, and China. All Airtech locations offer technical assistance and are ready to meet your composite production challenges.

Building upon nearly 50 years of extrusion experience, Airtech has recently taken the next step into additive manufacturing, offering Print-Tech® - a large-scale additive manufacturing or 3D printing tooling service for composites. Large-scale tooling in the form of trim fixtures, holding fixtures, and layup molds can be designed, tooled, and built faster without compromising quality. They also manufacture a full line of Dahltram® tooling and Dalpram® purging resins.

Airtech is an ISO 9001:2015 / AS9100 Rev. D registered company.

For more information, contact:

Tony Constantino
5700 Skylab Road
Huntington Beach, CA 95647
714-899-8100
tconstantino@airtechintl.com



www.airtechintl.com

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We are the New Jersey Chapter of SAMPE

Chartered in 1977, NJ SAMPE is one of the oldest Chapters in the SAMPE network. We serve the greater NJ/NY/CT/PA area by focusing on our membership, as well as student and young professional outreach. NJ SAMPE includes ten SAMPE Fellows, thirteen Senior Honorary Members, one SAMPE George Lubin Award Winner, and one SAMPE Young Professionals Emerging Leadership Award Winner. NJ SAMPE was designated as SAMPE's first Center of Excellence for Additive Manufacturing in 2018.

We welcome you to participate and network, either for business opportunities, recruitment, or keeping up with industry trends in the region. As the only technical society encompassing all fields of endeavor in materials and processes, SAMPE provides a valuable forum for scientists, engineers and academics. We especially invite students and young professionals to engage in dialog with industry members, explore career options, make presentations at monthly meetings, and join our local student chapters.

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