The AIAA Materials Technical Committees is soliciting abstracts for a Special Session on

Materials for Additive Manufacturing

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee solicits papers with recent research, technological advancements, and systems-level perspectives on **Materials for Additive Manufacturing** within the AIAA SciTech conference. These sessions will examine advances in Additive Manufacturing, also sometimes known as 3D Printing. Any materials-related aspect of additive manufacturing that is relevant to aerospace is acceptable for papers, including but not limited to

- Metals and Alloys: Steel, Titanium and Aluminum based alloys, Superalloys, high entropy alloys etc.
- AM for material and component design: multi-material printing, spatially and functionally gradient designs, etc.
- Computational modeling of AM processes and resulting material properties
- Constitutive models for Additively Manufactured materials
- Multi-scale structural analysis modeling for Additively Manufactured materials
- Design of structures to enable efficient additive manufacturing
- Additive Manufacturing for composites
- Additive Manufacturing for ceramics and refractory materials
- Process monitoring and control methods
- In-space additive manufacturing
- Testing and inspection
- Materials discipline capabilities for certification

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts will be evaluated by qualified individuals from these sectors. While this session is focused on additive materials and their processing, it should be noted that the Structures Technical Committee also has a related session entitled "Additive Structures" which is focused on structural applications of additive manufacturing. Authors are encouraged to submit their abstract to the most relevant session.

Extended abstracts of no less than 1,000 words are due **May 24, 2024** Author notification of paper acceptance on or about **August 26, 2024** Final manuscript due **December 2, 2024**

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Materials for Additive Manufacturing" topic option under "Materials" when prompted during submission.

Ajit Achuthan	Clarkson University	aachutha@clarkson.edu
Steven Wanthal	The Boeing Company	steven.wanthal@boeing.com

The AIAA Structures Technical Committee and the Materials Technical Committee are sponsoring a Joint Special Session on

Artificial Intelligence and Machine Learning for Materials and Structures

AIAA SciTech 2025

January 6-10, 2025 Hyatt Regency Orlando Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Structures and Materials Technical Committees solicit papers with recent research, technological advancements, and systems-level perspectives in Artificial Intelligence and Machine Learning for Problems in Structures and Materials within the AIAA SciTech conference. Artificial Intelligence and machine learning (deep learning included) technologies offer the potential to revolutionize and streamline current processes to develop and qualify materials and improve our design process for aerospace structures. These sessions will examine applications of various artificial intelligence and machine learning technologies to develop new material further and structural applications and their application to design and qualification/certification. Applications to all aero-structures, aircraft and spacecraft (such as launch vehicles), are welcome.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts will be evaluated by qualified individuals from these sectors.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Author notification of paper acceptance on or about August 26, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Artificial Intelligence and Machine Learning for Problems in Structures and Materials" topic option under "Materials" or "Structures" when prompted during submission.

For more information, contact one of the following organizers:

Yumeng Li Steven Wanthal Brandon Hearley Pu Wang University of Illinois The Boeing Company NASA Glenn Research Center The Boeing Company yumengl@illinois.edu steven.wanthal@boeing.com brandon.1.hearley@nasa.gov pu.wang3@boeing.com

The AIAA Materials Technical Committees is soliciting abstracts for a Special Session on

Process Modeling of Composites

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee solicits papers with recent research, technological advancements, and systems-level perspectives on **Process Modeling of Composites** within the AIAA SciTech conference. It is the intention to examine recent developments in multiscale process modeling procedures and techniques, material characterization, and experimental verification and validation for process modeling of thermosets, thermoplastic, and polymer-derived composites. The session welcomes contributions in the most recent advancements in analytical and computational techniques for the analysis of residual stress build up during manufacturing and properties predictions across the characteristic composite length-scales, including micro-, meso- and macro-scales.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts will be evaluated by qualified individuals from these sectors.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Author notification of paper acceptance on or about August 26, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Process Modeling of Composites" topic option under "Materials" when prompted during submission.

For more information, contact one of the following organizers:

Marianna Maiaru Sagar P Shah Columbia University University of Massachusetts Lowell mm6263@columbia.edu Sagar Shah@uml.edu

The AIAA Materials Technical Committees is soliciting abstracts for a Special Session on

Multiscale Modeling

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee solicit papers with recent research, technological advancements, and systems-level perspectives on **Multiscale Modeling** to be presented in special sessions within the AIAA SciTech conference. It is the intention to examine advances including:

- Unique challenges in multiscale modeling
- New or novel techniques for multiscale modeling
- Cross-scale material phenomena investigated by multiscale modeling and simulation
- Uncertainty quantification and model validation in multiscale modeling and simulation
- Integration of experiments and simulations for multiscale modeling
- Micromechanics
- Multiscale modeling of damage, degradation, and failure

The committee welcomes submissions from government, industry, academia, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Author notification of paper acceptance on or about August 26, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Multiscale Modeling" topic option under "Materials" when prompted during submission.

Name	Affiliation	Email
Dr. Gary Seidel	Virginia Tech	gdseidel@vt.edu
Dr. Yumeng Li	University of Illinois at Urbana	Yumengl@illinois.edu
	Champaign	
Dr. Ibrahim Guven	Virginia Commonwealth University	iguven@vcu.edu

The AIAA Materials Technical Committees is soliciting abstracts for a Special Session on

Nanostructured Materials

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee solicits papers with recent research, technological advancements, and systems-level perspectives on Nanostructured Materials within the AIAA SciTech conference. It is the intention to examine advances including:

- Hierarchical methods development
- Structure-property relationships bridging length and time-scales
- Experimental techniques and characterization, synthesis and processing of nano- structured materials
- Nanotubes, 2-D nanoparticles, and nanofiber reinforced nanostructured composites
- Coatings, thin films, nanocrystalline metals, and multifunctional nanostructured materials
- Validated computational methods that address techniques for bridging length and time scales
- Additively manufactured nanomaterials
- Application of machine learning in nanostructured materials characterization

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts will be evaluated by qualified individuals from these sectors.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Author notification of paper acceptance on or about August 26, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Nanostructured Materials" topic option under "Materials" when prompted during submission.

For more information, contact one of the following organizers:

Joeseph Koo Brian Wardle Samit Roy UT-Austin MIT Univ. of Alabama jkoo@utexas.edu wardle@mit.edu sroy@eng.ua.edu

The AIAA Materials Technical Committee is sponsoring a special session on

Microstructure Characterization and Modeling

AIAA SciTech 2025

January 6–10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee (MTC) is pleased to announce a call for papers to be presented in special sessions on **Microstructure Characterization and Modeling** within the AIAA SciTech Forum. These sessions will examine advances in experimental and computational characterization, testing, design, modeling, simulation, analysis, validation, and optimization of material microstructures. Any materials-related aspect of microstructures relevant to aerospace is acceptable for papers, including but not limited to:

- Modeling and experimentation of predictive relationships between the synthesis/processing parameters, material composition, microstructure (including manufacturing defects, damage, and other physical features), and material degradation, failure, and properties
- Mechanical, thermal, ablation, and multifunctional behavior of microstructures and effects across length scales
- Computational and analytical modeling, simulation, verification, and validation
- Testing and characterization procedures (including micro-computed tomography)
- Design, optimization, and innovative and/or end-user-tailored applications
- Manufacturing and inspection procedures
- Effects of life-cycle, recycling, and/or environment on microstructural evolution

Material architectures with microstructures of interest may include but are not limited to composites, metals and alloys, polymers, ceramics, refractory materials, functionally graded materials, multi-scale hierarchical materials, metamaterials, and interfaces.

To this end, the MTC is soliciting papers with recent research, technological advancements, and systemslevel perspectives in the above areas. The MTC welcomes submissions from government, industry, academic, and small businesses.

> Extended abstracts of no less than 1,000 words are due **May 24, 2024** Author notification of paper acceptance on or about **August 26, 2024** Final manuscript due **December 2, 2024**

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Microstructure Characterization and Modeling" topic option under "Materials" when prompted during submission.

Please notify us if you are planning to submit an abstract, so that we can ensure that it is included in these sessions. For more information contact one of the following organizers:

Samantha Bernstein	The University of Texas at Austin	samantha.bernstein@utexas.edu
Dr. Joseph H. Koo	The University of Texas at Austin	jkoo@mail.utexas.edu
Dr. Reed Kopp	ATA Engineering, Inc.	reed.kopp@ata-e.com
Dr. Jessica Piness	Aegis Aerospace Inc.	jmpiness@gmail.com
Dr. Evan Pineda	NASA Glenn Research Center	evan.j.pineda@nasa.gov
Jamal Husseini	University of Massachusetts Lowell	jamal_husseini@uml.edu

The AIAA Materials Technical Committee and the Survivability Technical Committee are sponsoring a Joint Special Session on

Survivable Materials and Structures

AIAA SciTech 2025

January 6-10, 2025 Orlando, Florida

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee and the Survivability Technical Committee are soliciting papers with recent research, technological advancements, and systems-level perspectives on **Survivable Materials and Structures** within the AIAA SciTech conference. Survivability improvements for air and space systems increasingly rely on the development of new structural designs, which must be lightweight but also satisfy a demanding set of mechanical, thermal, electromagnetic, or other requirements. Topics of interest include but are not limited to design, analysis, modeling, optimization, and/or testing of:

- Novel structural designs for impact mitigation and stress wave management
- Crashworthy structures
- Multifunctional structures for survivability
- Designs that incorporate structural health monitoring or self-healing
- Additively manufactured structural components with properties optimized for specific applications
- Improved ballistic protection systems for rotary-wing aircraft
- Improved thermal protection systems for spacecraft
- Thermal protection system materials, including polymer and ceramic matrix composites

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 24, 2024** Author notification of paper acceptance on or about **August 26, 2024** Final manuscript due **December 2, 2024**

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Survivable Materials and Structures" topic option under "Materials" or Survivability" when prompted during submission.

For more information, contact one of the following organizers:

Beldon Lin Mattie Piness Survivability Materials beldon.lin@lmco.com mattiepiness@gmail.com

The AIAA Materials Technical Committees is soliciting abstracts for a Special Session on

Fatigue and Fracture

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee solicits papers with recent research, technological advancements, and systems-level perspectives on **Fatigue and Fracture** mechanics research, development, and application within the AIAA SciTech conference. It is the intention to examine advances including underlying theoretical principles, fundamental improvements to the state of the art in experimental, computational, and/or modeling practices, verification, validation, and uncertainty quantification, standard and nonstandard testing, and additional relevant topics as proposed.

- Durability and damage tolerance
- Material behavior including composites, metals, ceramics, and polymers
- Environmental influences
- Computational and analytical modeling
- Experimental mechanics
- Testing and characterization procedures
- Sustainment and life extension
- Verification and validation
- Post-impact performance
- No-growth and slow-growth design criteria

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts will be evaluated by qualified individuals from these sectors.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Author notification of paper acceptance on or about August 26, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Fatigue and Fracture" topic option under "Materials" when prompted during submission.

Dr. Ibrahim Guven	Virginia Commonwealth	iguven@vcu.edu
	University	
Dr. Joe Schaefer	The Boeing Company	joseph.d.schaefer@boeing.com
Dr. Gary Seidel	Virginia Tech University	gdseidel@vt.edu
Dr. Solver Thorsson	Exponent, Inc.	sthorsson@exponent.com

The AIAA Spacecraft Structures Technical Committee and the Materials Technical Committee are sponsoring a Joint Special Session on

High Strain Composite Materials and Structures

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Spacecraft Structures Technical Committee and the Materials Technical Committee are soliciting papers with recent research, technological advancements, and systems-level perspectives on **High Strain Composite Materials and Structures** within the AIAA SciTech conference. It is the intention to cover topics including:

- Analysis, numerical modeling, and experimental characterizations of high strain composite materials
- Material failure, structural instability, and mechanics of high strain composite structures
- Novel structural concepts enabled by high strain composites
- Effects of extreme environments on high strain composite materials and structures
- Any other topics relevant to high strain composites

The committees welcome submissions from government, industry, academic, and small businesses. All abstracts will be evaluated by qualified individuals from these sectors.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Author notification of paper acceptance on or about August 26, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "High Strain Composite Materials and Structures" topic option under "Materials" or "Spacecraft Structures" when prompted during submission.

Francisco Lopez	University of Colorado Boulder	francisco.lopezjimenez@colorado.edu
Xin Liu	The University of Texas at	xin.liu@uta.edu
Andrew Lee	Arington North Carolina State University	alee29@ncsu.edu

The AIAA Materials Technical Committees is soliciting abstracts for a Special Session on

High Performance Materials for Extreme Environments

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee solicits papers with recent research, technological advancements, and systems-level perspectives on **High Performance Materials for Extreme Environments** within the AIAA SciTech conference. It is the intention to examine advances including:

- Performance of materials and structures at extreme high and extreme low temperatures
- Materials for emerging entry, descent, and recovery systems & technologies
- Materials for hypersonic applications, especially for use at Mach 10-20
- Modeling, formulation, and processing of materials for pressure vessel applications
- Development of thermal and environmental barrier material coatings and systems

• Assessment and prevention of materials degradation due to space environment hazards such as ionizing radiation, atomic oxygen, spacecraft charging, and micrometeoroids

- Emerging propulsion systems
- Innovative test methodologies, simulations, and platforms

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts will be evaluated by qualified individuals from these sectors.

Extended abstracts of no less than 1,000 words are due **May 24, 2024** Author notification of paper acceptance on or about **August 26, 2024** Final manuscript due **December 2, 2024**

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "High Performance Materials for Extreme Environments" topic option under "Materials" when prompted during submission.

Valerie Wiesner	NASA Langley Research Center	valerie.l.wiesner@nasa.gov
Terrisa Duenas	ESTE Leverage, Inc.	terrisa@esteleverag.com
Jessica Piness	Aegis Aerospace, Inc.	jmpiness@gmail.com

The AIAA Structures Technical Committee and the Materials Technical Committee are sponsoring a Joint Session on

3D Woven Composite Materials and Structures

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Structures and the Materials Technical Committees solicits papers with recent research, technological advancements, and systems-level perspectives on **3D Woven Composites for Materials and Structures** within the AIAA SciTech conference. It is the intention to examine advances relevant to aerospace materials and structures including:

- Design, analysis, and characterization of 3D woven materials and structures
- Novel manufacturing techniques for 3D woven preforms and composite structures
- New analysis methods for 3D woven material and structural design and evaluation
- Imaging and microstructural evaluation of 3D woven materials and structures
- Novel observations of material and structural response characteristics resulting from mechanical and/or thermal loading
- Process modeling of 3D woven materials and structural components, including weaving, compaction, infusion, and/or cure of 3D woven preforms
- Integration of process and performance predictions of 3D woven composites
- Qualification/certification approaches and challenges for 3D woven materials and structures

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/call-for-content/call-for-papers</u>

Make sure to select the "3D Woven Composite Materials and Structures" topic option under "Materials" or "Structures" technical discipline when prompted during submission.

Prof. Hülya Cebeci	İstanbul Technical University	hulya.cebeci@itu.edu.tr
Prof. Dianyun Zhang	Purdue University	dianyun@purdue.edu

The AIAA Structures Technical Committee, Multidisciplinary Design Optimization Technical and Materials Technical Committee Discipline are sponsoring a Joint Session on

Integrated Computational Materials Engineering (ICME)

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

This session will focus on technology advances in **Integrated Computational Materials Engineering (ICME)** and its applications in air and space structures.

Topics of interest include but are not limited to:

- Multiscale modeling and simulation techniques
- Material characterization and property prediction
- Integrated Process-Performance modeling and optimization
- Data management & process integration for ICME projects
- Design methodologies enabled by ICME
- Data-driven approaches and machine learning in ICME
- Validation and verification of ICME models
- Applications of ICME in air and space structures

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 24, 2024** Author notification of paper acceptance on or about **August 26, 2024** Final manuscript due **December 2, 2024**

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/call-for-content/call-for-papers</u>

Make sure to select the "Integrated Computational Materials Engineering (ICME)" topic option under "Structures" or "Multidiscipline Design Optimization" or "Materials" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Ali Najafi Kai James Steven M. Arnold

ANSYS Georgia Tech NASA Glenn Research Center <u>ali.najafi@ansys.com</u> <u>kai.james@gatech.edu</u> <u>Steven.M.Arnold@nasa.gov</u>

The AIAA Structures Technical Committee and Materials Technical Committee are sponsoring a Joint Session on

Structural Joints and Repairs

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

This session will focus on technology advances in the areas of design, analysis, manufacturing, inspection, testing, and performance evaluation of Structural Joints and Repairs for aerospace vehicles. Structural joints may include bonded, bolted, or new innovative joining methods. Structural repairs may include innovative design concepts, new material combinations, and/or manufacturing processes. Topics of interest may include but are not limited to: analysis & design for predicting strength and durability, structural health monitoring for assessing integrity, material selection and processing, 3D printing, non-destructive testing for damage assessment, automated joining and repair processes for repeatability and reliability. The committee welcomes submissions from government, industry, academia, and small businesses.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Author notification of paper acceptance on or about August 26, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/call-for-content/call-for-papers</u>

Make sure to select "Structural Joints and Repairs" topic option under "Structures" or "Materials" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Dr. Stephanie TerMaath Dr. Scott Norwood Dr. Richard Li

University of Tennessee Lockheed Martin Aurora Flight Sciences stermaat@utk.edu scott.norwood@lmco.com li.richard@aurora.aero

The AIAA Structures Technical Committee and the Materials Technical Committee are sponsoring a Joint Session on

Structures and Materials in Extreme Environments

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Structures Technical Committee and the Materials Technical Committee are soliciting papers with recent research, technological advancements, and systems-level perspectives on Structures and Materials within Extreme Environments within the AIAA SciTech conference. It is the intention to examine advances including:

- Special considerations for materials, design, analysis, and testing of structures in extreme environments (e.g. hypersonic; entry descent, and landing; aircraft and rocket engine; space/planetary exploration; and cryogenic applications)
- Design, analysis, and test methods for materials in extreme environments (e.g. additive structures, lattice structures, high temperature composites)
- Design and analysis methods for combined and/or coupled loads, including modeling, design optimization, and multi-disciplinary analysis (fluid, thermal, and structural interactions; optics; deployable structures)

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 24, 2024** Author notification of paper acceptance on or about **August 26, 2024** Final manuscript due **December 2, 2024**

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/call-for-content/call-for-papers</u>

Make sure to select the "Structures and Materials in Extreme Environments" topic option under "Structures" or "Materials" technical discipline when prompted during submission.

Marlana Goldsmith	Jet Propulsion Laboratory	marlana.b.goldsmith@jpl.nasa.gov
Ellen McIsaac	Lockheed Martin	ellen.b.mcisaac@lmco.com

The AIAA Materials Technical Committees is soliciting abstracts for a Special Session on

Multifunctional Materials for Aerospace

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee solicits papers with recent research, technological advancements, and systems-level perspectives on Multifunctional Materials for Aerospace within the AIAA SciTech conference. It is the intention to examine advances including:

- Area of interest 1: Multifunctional nano-composite materials and applications
- Area of interest 2: Piezoelectric/pyroelectric materials and applications
- Area of interest 3: Piezoresistive/piezoresistance materials and applications
- Area of interest 4: Photo sensitive materials and applications
- Area of interest 5: Temperature sensitive materials and applications
- Area of interest 6: Electroactive/Magneto-active materials and applications
- Area of interest 7: Shape memory materials and applications
- Area of interest 8: Dielectric materials and applications
- Area of interest 9: Self-healing materials and Structures
- Area of interest 10: Any new functional/multifunctional material discoveries

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts will be evaluated by qualified individuals from these sectors.

Extended abstracts of no less than 1,000 words are due **May 24, 2024** Author notification of paper acceptance on or about **August 26, 2024** Final manuscript due **December 2, 2024**

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Multifunctional Materials for Aerospace" topic option under "Materials" when prompted during submission.

For more information, contact one of the following organizers:

Tian-Bing Xu Donghyeon Ryu Richard Li Old Dominion University New Mexico Tech Aurora Flight Sciences, A Boeing Company txxu@odu.edu donghyeon.ryu@nmt.edu li.richard@aurora.aero

The AIAA Materials Technical Committee is soliciting abstracts for a Special Session on

Testing and Characterization of Materials

AIAA SciTech 2025

January 6–10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee is very pleased to announce a call for papers to be presented in special sessions on **Testing and Characterization of Materials** within the AIAA SciTech conference. These sessions will examine advances in testing and characterization of materials to be utilized in any aircraft, aerospace, spacecraft, hypersonic, or other vehicle or structure. Any aspect of this broad area relevant to aerospace is acceptable for papers, including:

- Testing and characterization programs, results, or material selection efforts
- Unique challenges in testing and characterization
- New or novel materials testing techniques
- Overview or survey papers addressing available databases or consortiums
- New or novel instrumentation methods or instrumentation applications for new material types
- Extreme environment materials testing or characterization
- Analog or performance testing of materials, even in structural configurations

To this end, the Materials Technical Committee is soliciting papers with recent research, technological advancements, and systems level perspectives in the above areas. The committee welcomes submissions from government, industry, academic, and small businesses.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Author notification of paper acceptance on or about August 26, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Testing and Characterization of Materials" topic option under "Materials" when prompted during submission.

Joseph Koo	UT Austin	jkoo@mail.utexas.edu
Evan Pineda	NASA Glenn Research Center	evan.j.pineda@nasa.gov
Mattie Piness	Lockheed Martin	martha.e.piness@lmco.com
Antonio Avila	Universidade Federal de Minas Gerais	<u>avila@ufmg.br</u>
Reed Kopp	ATA Engineering, Inc.	reed.kopp@ata-e.com

The AIAA Structures and Materials Technical Committees are sponsoring a Special Session on

Thermoplastic Composites

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The American Institute of Aeronautics and Astronautics (AIAA) Structures and Materials Technical Committees solicit papers with recent research and technological advancements on **Thermoplastic Composites** at the AIAA SciTech 2025 conference. Thermoplastic composites offer potential performance, cost, and manufacturing rate benefits to aircraft structures, but several challenges remain.

Topics of interest include, but are not limited to:

- Thermoplastics and thermoplastic matrix composites
- Multiscale modeling characterization of microstructure
- Developing processing-structure-property relationships
- Development novel thermoplastic composites
- Computational simulation and modeling
- Processing, manufacturing, characterization and testing techniques
- Design, analysis, and certification of thermoplastic composite materials and structures
- Material degradation
- Joining, repair and painting of thermoplastic composite parts

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Author notification of paper acceptance on or about August 26, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/call-for-content/call-for-papers</u>

Make sure to select the "Thermoplastic Composites" topic option under "Structures" or "Materials" technical discipline when prompted during submission.

Dr. Stephen Clay	Air Force Research Lab	stephen.clay.2@us.af.mil
Dr. Yumeng Li	University of Illinois Urbana-	Yumengl@illinois.edu
	Champagne	
Dr. Gregory Odegard	Michigan Technological University	gmodegar@mtu.edu
Dr. Evan Pineda	NASA Glenn Research Center	evan.j.pineda@nasa.gov
Dr. Navid Zobeiry	University of Washington	navidz@uw.edu

The AIAA Materials Technical Committee and the Non-Deterministic Approaches Technical Committee are sponsoring a Joint Special Session on

Uncertainty Quantification and Model Validation

AIAA SciTech 2025

January 6-10, 2025 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee and the Non-Deterministic Approaches (NDA) Technical Committee are soliciting papers with recent research, technological advancements, and systems-level perspectives on **Uncertainty Quantification and Model Validation** within the AIAA SciTech conference. It is the intention to examine advances including:

- Stochastic models, validation, verification, and uncertainty quantification for predictive computational science
- Multifidelity uncertainty quantification
- Sensitivity analysis

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts will be evaluated by qualified individuals from these sectors.

Extended abstracts of no less than 1,000 words are due May 24, 2024 Author notification of paper acceptance on or about August 26, 2024 Final manuscript due December 2, 2024

Detailed deadline information, abstract preparation instructions, and policies can be found at: <u>https://www.aiaa.org/SciTech/presentations-papers/call-for-papers</u>

Make sure to select the "Uncertainty Quantification and Model Validation" topic option under "Materials" or "NDA" when prompted during submission.

Steven M. Arnold	NASA Glenn Research Center	steven.m.arnold@nasa.gov
Ashwin Renganathan	The Pennsylvania State	ashwin.renganathan@psu.edu
	University	
Marianna Maiaru	U Mass Lowell	marianna_maiaru@uml.edu