Call for Papers

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

3D Woven Composites Materials and Structures

AIAA SciTech 2023
23–27 January 2023
National Harbor, MD

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 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 test of 3D woven materials and structures for aircraft and launch vehicle applications
- 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
- Analysis method developments for process modeling, including weaving, compaction, infusion, and/or cure of 3D woven preforms
- Qualification/certification approaches and challenges for 3D woven materials and structures

The committee welcomes submissions from government, industry, academia, and small businesses.

Extended abstracts of no less than 1,000 words will be due on or about **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

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

For more information, contact one of the following organizers:

Dr. Brett Bednarcyk	NASA Glenn Research Center	brett.a.bednarcyk@nasa.gov
Dr. Andrew Bergan	NASA Langley Research Center	andrew.c.bergan@nasa.gov
Professor Marianna Maiaru	University of MA - Lowell	marianna_maiaru@uml.edu
Dr. Evan Pineda	NASA Glenn Research Center	evan.j.pineda@nasa.gov
Professor Prasad Potluri	University of Manchester	prasad.potluri@manchester.ac.uk

Call for Papers

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

Artificial Intelligence and Machine Learning for Problems in Structures and Materials

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

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 evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due June 1, 2022
Author notification of paper acceptance on or about August 31, 2022
Final manuscript due December 5, 2022

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

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

For more information, contact one of the following organizers:

Dr. Steven Wanthal	The Boeing Company	steven.wanthal@boeing.com
Dr. Wenbin Yu	Purdue University	wenbinyu@purdue.edu

Call for Papers

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

Design, Analysis, and Testing of Structures in Extreme Environments

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

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 **Design, Analysis, and Testing of Structures in 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 evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

Make sure to select the "Design, Analysis, and Testing of Structures in Extreme Environments" topic option under "Materials" or "Structures" when prompted during submission.

For more information, contact one of the following organizers:

Marlana Goldsmith	Jet Propulsion Laboratory	marlana.b.goldsmith@jpl.nasa.gov
Ellen McIsaac	Lockheed Martin	ellen.b.mcisaac@lmco.com
Jessica Piness	Redwire Space, Inc	jmpiness@gmail.com

Call for Papers

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

Fatigue and Fracture

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

With the continued development of advanced materials, such as additively manufactured materials, functional materials, composites, and high-entropy alloys, the mechanistic understanding of the fatigue and fracture behavior of such materials has been challenging. The need for advanced methods and applications for theoretical, numerical, and experimental methods that address fatigue and fracture mechanism continues to grow. The AIAA Materials Technical Committee seeks papers addressing fatigue and failure of materials.

Potential topics could include the following:

- Testing and characterization methods
- Multiaxial fatigue, fracture, and complex loading effects
- Mechanism based models for fatigue
- Crack nucleation
- Crack growth kinetics
- Degradation processes and related driving forces under cyclic loading
- Multiscale/multi-resolution methods
- Stochastic behavior
- Computational modeling

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

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

For more information, contact one of the following organizers:

Paul Davidson	University of Texas at Arlington	paul.davidson@uta.edu
Ibrahim Guven	Virginia Commonwealth University	iguven@vcu.edu

Call for Papers

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

History of Materials

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

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

- Historical development of materials across all classes (metals, polymers, composites, etc.)
- Examining how novel materials are adopted into common use and how adaption challenges have changed throughout time
- Biographies of materials researchers from underrepresented/underprivileged groups

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

Make sure to select the "History of Materials" topic option under "Materials" or "History" when prompted during submission.

For more information, contact one of the following organizers:

Dr. Monica Jacinto	Aerojet Rocketdyne	monicajacinto@me.com
Dr. Jessica Piness	Redwire Space, Inc.	jmpiness@gmail.com

Call for Papers

The AIAA Materials and Digital Engineering (DGE) Technical Committees are sponsoring a Joint Special Session on

ICME & Digital Thread

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical and Digital Engineering Integration Committees are soliciting papers with recent research, technological advancements, and systems-level perspectives that address the various issues associated with capturing, storing, analyzing, and disseminating information, data artifacts, and linkages constituting the digital thread and integrated computational materials engineering (ICME) studies within the AIAA SciTech conference. Specifically, papers discussing material data management activities and Machine Learning surrogate models in the context of the required elements associated with digital twins and digital thread will be considered; that is Data, Informatics, and Visualization as discussed in the NASA 2040 Vision (CR 2018-219771). The goal is to provide a forum for discussion of academia, industrial, and government digital thread activities that enable successful implementation of ICME best practices and culture.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2023**
Author notification of paper acceptance on or about **August 31, 2023**
Final manuscript due **December 5, 2023**

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

Make sure to select the "ICME & Digital Thread" topic option under "Materials" or "Digital Engineering" when prompted during submission.

For more information, contact one of the following organizers:

Steven M. Arnold	NASA Glenn Research Center	Steven.M.Arnold@nasa.gov
John Matlik	Rolls-Royce Corporation	John.F.Matlik@rolls-royce.com

Call for Papers

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

Materials for Additive Manufacturing

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

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

- Thermosets and their composites
- Thermoplastics and their composites
- Nanocomposites
- Metals and alloys
- Ceramics
- Simulation
- Part optimization for AM, including lattice structures
- Evaluation and testing

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

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

For more information, contact one of the following organizers:

Tim Dominick	Northrop Grumman	timothy.dominick@ngc.com
Abdullah Kafi	RMIT	abdullah.kafi@rmit.edu.au
Joseph Koo	UT Austin	jkoo@utexas.edu
Ji Eun Park	Lockheed Martin	ji.e.park@lmco.com
Hao Wu	KAI, LLC	wuhao@koo-associates.com

Call for Papers

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

Materials for Hypersonics and Extreme Environments

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

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

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

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are evaluated by qualified individuals from industry, academia, or government.. EAR/ITAR concerns are the responsibility of the authors.

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

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

For more information, contact one of the following organizers:

Dr. Bilim Atli-Veltin	TNO & TU Delft	Bilim.atli@tno.nl
Tim Dominick	Northrop Grumman	timothy.dominick@ngc.com
Dr. Terrisa Duenas	Duenas Consulting, LLC	terrisa@gmail.com
Dr. Jessica Piness	Redwire Space, Inc.	jmpiness@gmail.com

Call for Papers

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

Materials for Survivability

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

The AIAA (American Institute of Aeronautics and Astronautics) Survivability Technical Committee and the Materials Technical Committee are soliciting papers with recent research, technological advancements, and systems-level perspectives on **Materials for Survivability** within the AIAA SciTech conference. Survivability improvements for air and space systems increasingly rely on the development of advanced materials and composite systems that are lightweight but also satisfy a demanding set of mechanical, thermal, electromagnetic, or other requirements. Example areas of interest include:

- High toughness composite materials
- Fire resistant composite materials
- Multifunctional materials for survivability
- Lightweight materials for transparent or opaque ballistic protection systems
- Low observability coatings which reduce optical or radar signatures
- Smart materials which support structural health monitoring or self-healing
- Additively manufactured materials with properties optimized for specific applications

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

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

For more information, contact one of the following organizers:

Dr. Eric Farenthold	University of Texas at Austin	epfahren@mail.utexas.edu
Dr. Jessica Piness	Redwire Space, Inc.	jmpiness@gmail.com

Call for Papers

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

Multifunctional Materials for Aerospace

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committees solicit 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 are evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

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:

Yumeng Li	University of Illinois at Urbana-Champaign	yumengl@illinois.edu
Evan Pineda	NASA Glenn Research Center	evan.j.pineda@nasa.gov
Gary Seidel	Virginia Tech	gary.seidel@vt.edu
Ivica Smojver	University of Zagreb	ivica.smojver@fsb.hr
Tian-Bing Xu	Old Dominion University	txxu@odu.edu

Call for Papers

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

Multiscale Modeling

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committees 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:

- The development of physics-based multiscale modeling and simulation
- 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
- Bridging scales from materials to structures for aerospace applications.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

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

For more information, contact one of the following organizers:

Dr. Yumeng Li	University of Illinois at Urbana Champaign	Yumengl@illinois.edu
Dr. Wenbin Yu	Purdue University	WenbinYu@purdue.edu

Call for Papers

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

Nanostructured Materials

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committee (MTC) is very pleased to announce the twelfth annual call for papers for its very successful special sessions on nanostructured materials. The MTC is soliciting papers with new results and recent research advances in the areas of: hierarchical methods development, process-structure-property relationships, performance analysis, experimental techniques and characterization, multifunctional properties and approaches, and synthesis and processing of nanostructured hierarchical materials including additive manufacturing.

Material forms may include but are not limited to: nanowires, nanotubes, nanoparticle and nanofiber reinforced composites and assemblies, coatings, thin films, nanocrystalline metals, nanostructured ceramics, functionally graded materials, and multi-scale hierarchical materials concepts. Of special interest is the development of validated computational and analytical methods that address techniques for bridging length and time scales with the intent of providing efficient, high performance, engineering materials to the aerospace community.

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

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

Make sure to select the "Nanostructured Materials" topic option under "Materials" when prompted during submission
Abstracts must be submitted online at:
https://www.aiaa-scitech.org/

For more information, contact one of the following organizers:

Professor Samit Roy	University of Alabama	sroy@eng.ua.edu
Professor Brian L. Wardle	MIT	wardle@mit.edu

Call for Papers

The AIAA Materials, Structures, and Multidisciplinary Design Optimization (MDO) Technical Committees are sponsoring a Joint Special Session on

NASA Vision 2040

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

The AIAA (American Institute of Aeronautics and Astronautics) Materials, Structures and MDO Technical Committees are soliciting papers with recent research, technological advancements, and systems-level perspectives that address the various gaps and actions identified in the 2040 Vision study within the AIAA SciTech conference. NASA's Vision 2040: A roadmap for Integrated, Multiscale Materials and System Modeling and Simulation, described in NASA CR 2018-219771, defines the potential 25-year future state required for integrated multiscale modeling of materials and systems (e.g., load-bearing structures) to accelerate the pace and reduce the expense of innovation in future aerospace and aeronautical systems. This roadmap is a *community consensus* document and is a result of over 450 professionals' input. Specifically, papers discussing activities within 5 of the 9 key element areas will be considered: 1) Models and Methodologies, 2) Multiscale Measurement, & Characterization Tools and Methods, 3) Optimization & Optimization Methodologies, 6) Data, Informatics, and Visualization, and 8) Education & Training. The goal is to provide a forum for discussion of academia, industrial, and government activities that are ongoing with respect to building the 2040 cyber-physical-social ecosystem that enable successful implementation of ICME best practices and culture.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

Make sure to select the "NASA Vision 2040" topic option under "Materials" or "Structures" or "MDO" when prompted during submission.

For more information, contact one of the following organizers:

Steven M. Arnold	NASA Glenn Research Center	Steven.M.Arnold@nasa.gov
Brett Bednarcyk	NASA Glenn Research Center	brett.a.bednarcyk@nasa.gov
H. Alicia Kim	University of CA – San Diego	alicia@ucsd.edu
Marianna Maiaru	University of MA - Lowell	marianna_maiaru@uml.edu

Call for Papers

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

Process Modeling of Composites

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

The AIAA (American Institute of Aeronautics and Astronautics) Materials Technical Committees solicit 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 advances including:

- Manufacturing process simulations of polymer matrix composites (including thermosets and thermoplastics), metal matrix composites, and ceramic matrix composites
- Physics-based models to simulate processing-induced defects including porosity, wrinkling, and residual stress distribution
- New integrated multi-physics and multiscale modeling tools for composite manufacturing simulations
- Development of new artificial intelligence and machine learning tools and uncertainty quantification of composites manufacturing
- Challenges in composites process modeling

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2023**
Author notification of paper acceptance on or about **August 31, 2023**
Final manuscript due **December 5, 2023**

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

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	University of MA - Lowell	marianna_maiaru@uml.edu
Wenbin Yu	Purdue University	wenbinyu@purdue.edu
Dianyun Zhang	Purdue University	dianyun@purdue.edu

Call for Papers

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

Smart Materials for Adaptive Applications

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

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

- Area of interest 1: Smart materials and structures, such as, energy conversion and storage materials and devices, piezoelectric materials and devices, shape memory materials and structures, piezoresistive materials and structures, elastic tunable materials and structures, self-healing materials and structures, etc.;
- Area of interest 2: Smart materials and structures for adaptive controls;
- Aera of interest 3: Advanced manufacturing technologies for smart and adaptive structures;
- Area of interest 3: Comments and perspective of new materials for advanced adaptive controls.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

Make sure to select the "Smart Materials for Adaptive Applications" topic option under "Adaptive Structure" or "Materials" when prompted during submission.

For more information, contact one of the following organizers:

Gary D. Seidel	Virginia Tech	gary.seidel@vt.edu
Tian-Bing Xu	Old Dominion University	txxu@odu.edu

Call for Papers

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

Testing and Characterization

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

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

- Corrosion prevention and control technology development
- NDI (nondestructive inspection) development
- Microstructural material property characterization
- Implementation of image-based algorithms in material testing
- Small crack growth testing
- Fatigue tests of composite materials
- Characterization of the digital twin
- Testing and characterization methods specifically for multifunctional materials

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are evaluated by qualified individuals from industry, academia, or government..

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

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

For more information, contact one of the following organizers:

Ji Eun Park	Lockheed Martin	ji.e.park@lmco.com
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Tian-Bing Xu	Old Dominion University	txxu@odu.edu

Call for Papers

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

Uncertainty Quantification and Model Validation for ICME

AIAA SciTech 2023
January 23-27, 2023
National Harbor, MD

The AIAA (American Institute of Aeronautics and Astronautics) Materials and Non-Deterministic Approaches (NDA) Technical Committees are soliciting papers with recent research, technological advancements, and applications of uncertainty quantification and/or experimental validation to computational material modeling. The goal of ICME is to integrate this type of modeling into the decision-making processes required when engineering a part, system, or device. Ensuring the models are of sufficient accuracy to be relied upon in supporting those decisions is critical to unlocking the promise of ICME in practice. Quantifying the uncertainty in model inputs and predictions, in experimental measurements, and in the comparisons of the two (i.e., model validation) are all of interest.

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

Extended abstracts of no less than 1,000 words are due **June 1, 2022**
Author notification of paper acceptance on or about **August 31, 2022**
Final manuscript due **December 5, 2022**

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

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

For more information, contact one of the following organizers:

Barron Bichon (NDA TC)	Southwest Research Institute	barron.bichon@swri.org
Michael Sangid (Materials TC)	Purdue University	msangid@purdue.edu