



# INTERNATIONAL SYMPOSIUM



## AEROSPACE MATERIALS AND MANUFACTURING:



### Emerging Materials, Advances in Processing and Repair Technologies

**ACME-Tek, LLC and QuesTek** are jointly organizing the *international symposium on Aerospace Materials and Manufacturing: Advances in Processing and Repair of Aerospace Materials*. The International Conference on Structural Integrity (ICSI) is a biennial conference series resident in Funchal/Madeira, Portugal. The symposium will be held in conjunction with the European Structural Integrity Society (ESIS) and Portuguese Structural Integrity Society (SPFIE) from 29 August – 1 September 2023.

**QuesTek-USA and QuesTek-Europe** have and continue to make significant contributions to the success of the Integrated Computational Materials Engineering (ICME), focused on the design of advanced high strength alloys, by performing cutting-edge research & development, in support of the accelerated deployment of higher-performance aerospace, defense and energy related materials.

#### INTRODUCTION

- Reliable materials performance are critical to the safety and integrity of structural components.
- Advanced higher-performance materials are being designed and deployed in flight safety critical components and space exploration, based on integrated computational materials engineering technologies.
- The International Symposium on Aerospace Materials and Manufacturing is aimed at presenting up-to-date progress in advanced materials design & deployment and offering a forum for exchange of ideas and experience, along with an open dialogue between materials scientists, design engineers and manufacturing experts.

#### CALL FOR PAPERS

The symposium will focus on, but not limited to, five major topics:

1. **Materials Design & Development:** Ti alloys, Al and Al-Li alloys, Superalloys, polymer-based composites, MMCs and Intermetallic
2. **Forming and Joining:**
  - ✚ **Forming and Shaping:** Isothermal forging, extrusion, metal injection moulding, warm spinning and flow forming of engine components, sheet and tube hydroforming of aircraft and helicopter parts.
  - ✚ **Welding and Joining:** Fusion welding techniques such as TIG, Plasma, Laser, and Electron beam. Solid state joining technologies such as FSW, LFW, Diffusion bonding, and TLP bonding, welding of thermoplastic composites.
3. **Process Modeling and Optimization:** Application of numerical and analytical based techniques to optimize process parameters, predict microstructure evolution, and to estimate and control residual stresses.
4. **Coatings:** Erosion resistant and/or thermal barrier coatings techniques such as plasma spray, HVOF, EB-PVD, as well as emerging technologies such as cold spray.
5. **Component Repair and Net-Shape Re-manufacturing Technologies:** Remanufacturing of damaged components using laser and EB based and cold-spray technologies; repair of single crystal Superalloys; rebuilding and cladding technologies for the repair of eroded components.

Authors are invited to **submit abstract electronically** at the address shown below. When submitting an abstract, make sure to indicate the **Aerospace Symposium 2023**.

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