

Material and Process Engineering

Material and Process Engineering

Performance – Our expertise is proven on NASA programs like the ISS Electrical Power System, ISS Fluids and Combustion Facility (FCF), ISS Space Communications and Navigation (SCaN) Testbed, and satellite systems such as for the Magnetospheric Multiscale (MMS) Mission.

Capabilities:

- Material characterization
- Component and systems lubrication analysis and implementation
- Metallurgy
- Composites
- Contamination control modeling
- Environmental effects (including venting, purging, AO and MMOD modeling, analysis and mitigation, flammability, elevated oxygen systems, stress corrosion failure, corrosion control)
- Adhesives and coatings
- Optics-bond development
- Weld and braze development (including the development of NASA quality welding programs,
- NDE inspection plans, weld design)
- Electrostatic discharge (ESD) technology
- RF-related materials development, design, testing and implementation



Within the ZIN quality organization ZIN has expertise in materials and materials & process engineering on space-rated hardware for NASA. Core competencies include material characterization, lubrication engineering, contamination control, environmental effects, adhesives and coatings expertise, optics bond development, weld and braze development, electrostatic discharge (ESD) technology, and composite and communication system related materials and design.

Areas of expertise include specialized process review (welding, NDT, etc.), fastener control (NASA-STD-6008), Materials and Process Technical Information System (MAPTIS), Government-Industry Data Exchange Program (GIDEP), system flammability assessment (JSC 29353), hardware off gas toxicity (NASA-STD-6001), oxygen system assessment, and Materials Identification and Usage List (MIUL)/Materials Usage Agreement (MUA) review and submittal.

- ❑ ZIN participated in the development of the ISS materials requirements (SSP-30233), 1990-1993.
- ❑ Providing proven materials and processes to the maximum extent possible.
- ❑ Creating and validating new materials and processes when needed.
- ❑ Monitoring processes to ensure continued performance.
- ❑ Provide cost-effective material and process selections to meet schedule and technical requirements.
- ❑ Providing adherence to NASA-STD-6010 through material review and review/creation of MIULs and MUA.
- ❑ In addition, ZIN is part of the new 3D printing materials powder to part certification and verification process development with NASA, DOD, and DOE.



ZIN Technologies



Voyager Space External Use
johansonm@zin-tech.com | www.zin-tech.com