



**HE Space** is a successful international space company. For 40 years, we have been supporting our customers with qualified experts in the field of engineering, science and administration. HE Space has joined forces with CS Group to lead the engineering and digital space market in Europe and to provide highly skilled consulting.

## **Non-Metallic Materials and Processes Engineer**

### **Key Tasks and Responsibilities**

As part of the TEC Directorate (Directorate of Technology, Engineering and Quality), you will have the following responsibilities:

- General processing of polymeric materials and their joining technologies;
- Processing/production, testing, and performance evaluation of structural and non-structural adhesive bonding;
- Processing/production, testing, and performance evaluation of carbon-fibre reinforced composites;
- Support Materials and Processes reviews, Materials and Processes Control Boards (MPCB's) and participate as Engineering and/or PA Board Member in ESA Programme reviews milestones (including PRRs, SRRs, PDRs, CDRs, QARs, FRRs, etc.);
- Analyse the behaviour and perform failure investigation of non-metallic materials and their associated manufacturing processes using a variety of laboratory equipment, among others NDI, physic-chemical laboratory simulation, testing and analysis, thermal analysis, chemical analysis, physical and microscopic analysis, surface analysis, spectroscopic analysis, etc.;
- Support the operation and regular updating of the associated management information tools and system databases, including dedicated materials and processes databases;
- Support the preparation, issuing and management of the technology roadmaps for developments.

### **Skills & Experience**

You will have the following qualifications and relevant experience:

- Master's degree in materials sciences or mechanical engineering;
- Several years of experience in materials and processes engineering;
- Good knowledge about general test and qualification methodologies and especially experience in mechanical testing and NDI;
- Experience in defining and executing test plans for materials qualification and process validation;
- Expert knowledge related to ceramic and metallic materials and processes is considered an asset;
- Capability to take decisions for selection of materials and processes for space applications;
- The technical competence shall especially cover deep experience in processing/production, testing, and performance evaluation of carbon-fibre reinforced composites and associated bonding and joining technologies. The following is considered an asset:

## Passionate about people and passionate about space

- familiarity with high-temperature materials, including CMCs, ceramics, and hybrid composites, for use in space applications; their manufacturing methods, characterization methods and performance evaluation.
- understanding of the mechanical, thermal, and environmental requirements of composite materials in launcher systems and space vehicles.
- specific experience with composite materials used for tanks or pressure vessels, such as fuel tanks, cryogenic tanks, or pressurized systems.
- Further, the applicant shall have good understanding of application of simulation tools for mechanical and thermal performance of composite materials towards virtual testing and digital twinning. The following is considered an asset
  - experience in simulation of thermo-mechanical and fatigue behaviour of composites, simulation of composites manufacturing processes. This can be shown in the form of physics-based virtual testing (e.g. Hexagon Marc/Digi-Mat, MOOSE, DAMASK, NASA-PUMA etc.) or data-driven/ digital twin abstractions.
  - experience in data analytics and application of machine learning software (e.g. PyTorch, Tensorflow, Rapids) for composite analysis
- Fluency in English is mandatory ability to write technical documents in English;

This job is located in Noordwijk.

If you think you have what it takes for this job, please send your CV together with a letter of motivation (both in English and in Word or PDF) to Viktoria Panicharova, by clicking on the button "Apply for this job" asap quoting job **NL-HP-25002**.

An exciting and dynamic international working environment awaits you!