

# Job Title: Materials and Processes Engineer

Req ID 8743 - Posted 18/06/2019



## EUROPEAN SPACE AGENCY

Vacancy in the Directorate of Technology, Engineering and Quality.

ESA is an equal opportunity employer, committed to achieving diversity within the workforce and creating an inclusive working environment. Applications from women are encouraged.

### Post

Materials and Processes Engineer

This position is classified A2-A4 on the Coordinated Organisations' salary scale.

This position forms part of ESA's Advance Recruitment Scheme which is established to provide appropriate staffing resources when requirements materialise.

Appointments are therefore made for an initial duration of two years upon which the selected candidate may be appointed to a permanent post in the Agency.

### Location

ESTEC, Noordwijk, The Netherlands

### Description

Materials and Processes Engineer in the Materials and Processes Section, Structures, Mechanisms and Materials Division, Mechanical Department, Directorate of Technology, Engineering and Quality.

The Materials and Processes Section provides functional support to ESA projects and carries out technological research (R&D) in the area of materials and associated manufacturing processes.

### Duties

Reporting to the Head of Section and within the technical fields described above, the main tasks and responsibilities of the post holder will include:

- providing expert technical support and consultancy to ESA projects, programmes and general studies in the field of materials and processes throughout all project phases, with a particular focus on, but not limited to, the modelling of composite and metallic materials, related bonding and joining processes, additive manufacturing, with focus on the material/process relationships, the predictive performance modelling, the process/product verification, residual stress and deformation, defect analysis, etc.;
- participating in feasibility studies, project reviews and evaluation of procurement proposals;
- supporting the selection of materials, mechanical parts and processes for ESA programmes in the framework of the Materials and Processes Review Boards;
- identifying critical development problems and assisting in their resolution;
- contributing to the definition of technology development requirements and work plans for the Agency's technology programmes;
- defining, initiating and managing R&D activities covering both long- and short-term needs;
- fostering new application areas for multidisciplinary activities, placing emphasis on innovative concepts, cutting-edge technologies and system architectures;
- supporting tests, qualifications and failure investigations by coordinating relevant laboratory test activities and, in particular, modelling of materials performance related to applied processes and stimuli (including electronic assemblies) and drafting of relevant reports;
- liaising and collaborating with other engineering disciplines such as structures, mechanisms and thermal applications for providing relevant inputs for performance modelling;
- developing test and modelling methodologies for the evaluation of materials and for verifying processes against application requirements;

- participating to the definition, drafting, implementation and updating of the ECSS standards relevant to the Section's domain of competence;
- supporting the implementation of the ESA Advanced Manufacturing Cross-Cutting Initiative, as well as proposing new batches of associated activities through the review and assessment of the (advanced) manufacturing technologies focussing on digitalisation and virtual manufacturing currently being used in the European research and technology landscape, and ensuring synergy with other industrial high-end technology domains (for example, aeronautics, nuclear, automotive or medical);
- monitoring applicable scientific and technological trends and maintaining a state-of-the-art expertise;
- contributing to the dissemination of the results of the activities performed and the transfer of knowledge across the Agency.

Duties may also include supporting other activities within the post holder's field of competence.

## Technical competencies

General background and specific experience in the technical domains covered by the position  
Experience with the development, validation and implementation of relevant tools and methods  
Understanding of related technologies, R&D trends and the industrial landscape  
Project support experience in a relevant domain  
Experience in the management and monitoring of industrial activities, including participation in reviews  
Experience with Space Engineering Standards and their preparation and implementation

## Behavioural competencies

Communication  
Teamwork  
Customer Focus  
Innovation & Creativity  
Problem Solving  
Planning & Organisation

## Education

A Master's degree or equivalent qualification in materials engineering or science computational modeling, or other related field, is required.

## Additional requirements

Experience in the following domains is required:

- general engineering and science of materials and related manufacturing processes;
- materials-level modelling such as process, structure and performance relationship, time-temperature behaviour, virtual materials development and virtual testing.

A good knowledge of composite and metallic material performance and processing is required. Some years of professional experience in a relevant industrial environment will be considered an asset.

## Other Information

For behavioural competencies expected from ESA staff in general, please refer to the ESA Competency Framework.

The working languages of the Agency are English and French. A good knowledge of one of these is required.

Knowledge of another Member State language would be an asset.

The Agency may require applicants to undergo selection tests.

## The closing date for applications is 16 July 2019.

If you require support with your application due to a disability, please email [contact.human.resources@esa.int](mailto:contact.human.resources@esa.int).

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Please note that applications are only considered from nationals of one of the following States: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, the United Kingdom, Canada and Slovenia.

According to the ESA Convention the recruitment of staff must take into account an adequate distribution of posts among nationals of the ESA Member States. When short-listing for an interview, priority will first be given to internal candidates and secondly to external candidates from under-represented Member States.

(<http://esamultimedia.esa.int/docs/careers/NationalityTargets.pdf>)

In accordance with the European Space Agency's security procedures and as part of the selection process, successful candidates will be required to undergo basic screening before appointment.

Recruitment will normally be at the first grade in the band (A2); however, if the candidate selected has little or no experience, the position may be filled at A1 level.