

Training Opportunity for Portuguese Trainees

Reference	Title	Duty Station
PT-2014-TEC-QTE	Space environmental testing and analysis of materials	ESTEC
<p><u>Overview of the Unit missions:</u></p> <p>The Materials and Components Technology Division provides technical support to ESA missions and the European Space Industry in the fields of materials, processes and electronic components. Support is given directly to projects in the form of technical advice, PA support and investigating failures and non-conformances. Indirect support is provided by characterising and validating the use of materials and verifying processes in the space environment as well as directing research and development programmes for technologies that will be of use in future missions</p>		
<p><u>Overview of the field of activity proposed:</u></p> <p>Materials are the key building blocks to make space missions successful. To achieve that materials need to be developed, selected and tested to resist the harsh environment of space, different from standard terrestrial applications.</p> <p>The proposed activity involves environmental testing and analysis of novel materials proposed for ESA's future space missions. Typical materials could include thermal control foils and paints, adhesives and coatings. The candidate will use a state of the art laboratory facilities to simulate the space environment, including thermal cycling, UV/particle radiation, atomic oxygen and advanced outgassing characterisation. The properties of the exposed materials will be analysed using a variety of techniques, such as thermal analysis (TGA, DSC, DMA, TMA, DDS, LFA etc.), microscopy (optical and SEM), surface analysis (XPS, Raman spectroscopy, FTIR, contact angle) and mechanical analysis. Data from the project will be used to support the continued improvement and optimization of the materials and processes and the test techniques used to characterize them.</p>		
<p><u>Required Education:</u></p> <p>Applicants should either have as a minimum a completed Masters degree in a technical or scientific discipline such as Physics, Materials Science, Polymer Engineering, Materials Chemistry. Experience with some laboratory and materials analysis techniques is essential.</p> <p>Candidates must be fluent either in English or French, the official languages of the Agency. Candidates should have good interpersonal and communication skills and should be able to work in a multi-cultural environment, both independently and as part of a team.</p>		