

Training Opportunity for Portuguese Trainees

Reference	Title	Duty Station
PT-2015-TEC-QTE	Space environmental testing and qualification of materials – Analysis of Aerogel Materials	ESTEC
<p>Overview of the Unit missions: The Components Technology and Space Materials 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. This activity is proposed for the Materials Space Evaluation and Radiation Effects of ESA.</p>		
<p>Overview of the field of activity proposed: The proposed activity involves the environmental testing and analysis of materials proposed for ESA's future space missions. Specifically we would like to assess the space use of Aerogel materials. Aerogel materials have been used already for space mission but in the rigid form. As materials processing has advanced to such a state that flexible Aerogels can be manufactured the applications that those materials can enter are wide and very promising in the space technology field.</p> <p>The candidate will use state of the art laboratory facilities to simulate the space environment, including thermal ageing, thermal cycling, UV/particle radiation, atomic oxygen and outgassing. The properties of the exposed materials will be analysed using a variety of techniques, such as thermal analysis, thermal conductivity, flexural properties, microscopy (optical and SEM), surface analysis (XPS, Raman spectroscopy, FTIR, contact angle) and mechanical analysis. Data from this activity will be used to support the continued improvement and optimization of the Aerogel materials and processes and the test techniques used to characterize them.</p>		
<p>Required Education: Applicants should either have as a minimum a completed Masters degree in a technical or scientific discipline such as Applied Physics, Materials Science, Polymer Engineering, Materials Chemistry. Experience with some laboratory and materials analysis techniques is essential, an interest in laboratory activities is required.</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>		