

Training Opportunity for Luxembourgish Trainees

Reference	Title	Duty Station
LU-2023-TEC-MMG	In-Situ Resource Processes (ISRP)	ESTEC, Noordwijk, the Netherlands
<p><u>Overview of the mission:</u></p> <p>The Mechatronics and Optics Division is the Agency's centre of competence in areas relating to optics, optoelectronics and robotics, as well as instrumentation development for microgravity experiments and exploration, ECLS design, engineering and verification and in situ resource utilisation. It provides support to projects, preparatory programmes, and technology programmes.</p> <p>Within this framework, the Life Support and Physical Sciences Instrumentation Section is in charge of development of advanced life support systems, in situ resource utilisation and support to operational activities in human spaceflight, among others.</p> <p>You are encouraged to visit the ESA website: http://www.esa.int</p>		
<p><u>Overview of the field of activity proposed:</u></p> <p>You will, as a LuxYGT, be involved in activities related to in situ resource utilisation. A number of processes for oxygen production are being studied in this field. Of particular interest to us are electrolysis-based processes, in which oxygen is produced while reducing regolith. We are collaborating with the Directorate of Human Spaceflight in this area, as well as with the Materials and Processes Section within our own Directorate. Tasks undertaken during this traineeship will include:</p> <ul style="list-style-type: none"> • literature review of process-relevant data and techniques; • process modelling; • work to support testing and measuring process parameters; • work to support process optimisation and mechanical design; • support to other ISRU-related system engineering aspects, such as storage and purification. 		
<p><u>Required education and skills:</u></p> <ul style="list-style-type: none"> • You should have just completed or be in the final year of your master's degree in materials science, chemical engineering or aerospace engineering. • Good interpersonal and communication skills • Ability to work in a multi-cultural environment, both independently and as part of a team • Fluency in English and/or French, the working languages of the Agency 		