

CALL REFERENCE NUMBER : IE-09-2-3-F02-13104-2

Type of traineeship: 1 and 2

Project Title	Investigation of the effect of high-energy ball milling on hydrogen sorption properties of materials
Project Description	<p><u>Background</u></p> <p>The traineeship offered falls under the research project "<u>Hydrogen Safe Storage and Transport (HySaST)</u>" which supports the penetration of hydrogen as alternative fuel in the energy and transportation sectors.</p> <p>In particular, the work proposed is experimental and will make a contribution to the solid-state hydrogen storage task. This task assesses the performance and overall potential of a number of solid materials and compounds as hydrogen storage media. The usual testing activity under this task involves sample preparation, hydrogenation and gas sorption measurements and microstructural analysis studies.</p> <p><u>The traineeship</u></p> <p>A trainee is sought to assist in a parametric study of the influence of high-energy ball milling conditions on the surface area and microstructural characteristics (phase stability, lattice strain, crystallite size and lattice parameter) of hydrogen storage materials and the correlation of their evolution with hydrogen storage capacity. The work will kick off with an open literature search on the state-of-the-art on the effect of ball milling on hydrogen storage properties. The trainee, under the close supervision of experienced researchers and technicians, will be involved in the preparation of the samples, their microstructural characterisation and in the testing campaign for acquiring hydrogen composition-isothermal measurements and determining the hydrogen storage capacity of the materials investigated.</p>
Qualifications/ Expertise needed	The candidate should be in preparation of a thesis for a university degree or Master's degree or PhD (as stipulated in the <u>Rules governing the Traineeship Scheme</u>) in the fields of science or engineering. The candidate should also have a strong interest in doing experimental bench work. Finally, a good working knowledge of English is required.
Duration (min. 3 months- max. 12 months)	6 to 9 months, depending on the level of involvement
Location	Petten, The Netherlands
Scientific Responsible	P. Moretto / C. Filiou



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	Further information on project can be found at: <i>Institute for Energy, Action: HySaST (former SYSAF) 13104</i> Web link: <u>http://ie.jrc.ec.europa.eu/activities/SYSAF.php</u>
	Instructions on how to apply can be found at: <i>Institute for Energy</i> <u>http://ie.jrc.ec.europa.eu/jobs/trainees.php</u>