



Erasmus+ Traineeship

EMPLOYER INFORMATION	
Name of Organization	University of Murcia
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ENTERPRISE JOB DESCRIPTION	
Name of enterprise	University of Murcia
Duration	From 3 to 9 months
Working Hours	Around 30 h/week
Project Description	<p>Long-term test of nanofluids as thermal carrier in commercial flat plate solar thermal collectors (FPSC) of different types.</p> <p>Nanofluids as thermal carriers are seen as a promising way of improving the efficiency of solar thermal collectors, but there are still not publications reporting long-term behaviour of nanofluids operating in these devices. This project aims at this.</p> <p>The project has three phases:</p> <ol style="list-style-type: none">1. Prepare and characterize (measure of physic-chemical properties) of enough volume of nanofluid in different concentrations starting from suitable nanoparticles.2. Selecting the optimal nanofluid concentration in a reduced dimensions FPSC.3. Testing of nanofluids in commercial flat plate solar thermal



	<p>collectors. If possible the test would be conducted in two different solar collectors: a normal only thermal typical collector and a hybrid photovoltaic-thermal (PVT) collector.</p>
Tasks of the Erasmus intern	<p>Preparation and characterization of nanofluids to be done from different nanoparticles.</p> <p>Test conduction of commercial solar thermal devices operating with the prepared nanofluids as heat carrier.</p>
Requirements	<p>The applicant must have a fair background in nanofluid properties and/or energy engineering topics. Especially solar thermal knowledge would be welcome.</p> <p>A good level of English or French language and basic knowledge of chemical laboratory and Thermal Physics instruments are also required.</p>
What do we offer	<p>We offer immediate incorporation to an active project in the domain of an emerging technology within highly reputed research groups (“Thermal Engineering” and “Green Chemical Engineering and Nanotechnology”)</p> <p>The student will benefit from modern research facilities, under the close supervision and guidance from senior personnel and in a friendly environment.</p> <p>She/he will acquire expertise in nanofluids and solar thermal and photovoltaic-thermal energy</p>
Website	<p>Thermal Engineering Group’s website: https://curie.um.es/curie/catalogo-ficha.du?seof_codigo=1&marcar_ficha=S&termino=E0B9&cods=E0B9*04.</p> <p>Green Chemical Engineering and Nanotechnology Group’s website: https://curie.um.es/curie/catalogo-ficha.du?seof_codigo=1&perf_codigo=4&cods=E034*11.</p> <p>Mariano Alarcón’s ResearchGate: https://www.researchgate.net/profile/Mariano-Alarcon-Garcia.</p>