



Wednesday, 08th November 2017
12.00h CIC energigUNE
Seminar room

Host:
Dr. Ana Belén Hernández

Seminar: “AMADEUS project: ultra high temperature energy storage”

Speaker:
Dr. Alejandro Datas

From:
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In this seminar I will present the European Project AMADEUS (www.amadeus-project.eu) that explores the "Next generation Materials and Solid State Devices for Ultra High Temperature Energy Storage and Conversion". AMADEUS started in January 2017 and is the first European Project that investigates the use of high silicon alloys, with melting points beyond 1000°C, as phase change materials (PCM) for thermal energy storage (TES) applications. High silicon alloys have latent heats of over 1000 kWh/m³, which is an order of magnitude greater than that of currently used molten salts. The very high melting temperature brings some technological challenges. For instance, dynamic heat engines are no longer the best power generators, and other solutions must be investigated. In this regard, AMADEUS is developing a new kind of hybrid thermionic and thermophotovoltaic converter that enables power generation in the temperature range of 1000-2000°C. The main research activities that are being carried out within the project are refractory materials, solid-liquid interactions at high temperatures, thermal insulation, and solid state semiconductor devices for high temperature energy conversion. In this talk, I will present the project objectives, the more relevant background, and the very first project results.