

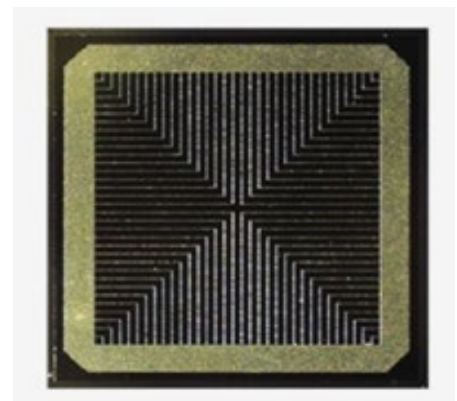


PhD Position

HIGH PERFORMANCE GERMANIUM THERMOPHOTOVOLTAIC CELLS

SCOPE

Thermophotovoltaic (TPV) systems –which convert electromagnetic radiation emitted by high-temperature sources into electricity using photovoltaic (PV) cells– have seen a resurgence in recent years. One of the most promising new applications of TPV technology is in electricity storage via **thermal batteries**, enabling surplus energy from intermittent renewable sources to be stored and used on demand. The PhD project proposed herein aims to **design, fabricate, and characterize GaAs/Ge heterojunction TPV cells**, with the goal of surpassing the world efficiency record recently achieved by our group. By integrating key technological innovations, this work also seeks to explore the full potential of Ge converters for powering the **first generation of TPV-based thermal batteries**.



REQUIREMENTS

- ❑ A Master's degree in physics, Electronic Engineering, Telecommunication Engineering, Materials Science, or similar degrees
- ❑ Knowledge on semiconductor physics and electronic device physics.
- ❑ Experience in epitaxial growth, and/or cleanroom operation, and/or semiconductor characterization.
- ❑ Programming skills are highly desirable.
- ❑ Good academic record
- ❑ Great motivation for scientific work and ability for teamwork
- ❑ Full proficiency in English and basic knowledge of Spanish (or commitment to get it!).
- ❑ Starting date no later than October 2025.

GENERAL CONDITIONS

- ❑ The selected candidate would start her/his PhD in our group, hired from a research project, with an expected duration of 4 years.
- ❑ Excellent experimental infrastructure and international atmosphere.
- ❑ Attendance to scientific conferences worldwide
- ❑ Research stays in partner labs in Europe, Japan or the USA

APPLICATIONS

Interested candidates should send a motivation letter, his/her CV and transcripts of all undergraduate and graduate coursework to Prof. Ignacio Rey-Stolle (ignacio.reystolle@upm.es)

More details can be found at: https://www.ies.upm.es/Join_Us

