



## Doctoral Vacancy Announcement form

### Research Topic Title:

Grid-scale Energy Storage: Imperatives for Accelerating the Green Transition (RESTORATIVE) – Dynamic Modeling and Optimization of High-Temperature Thermal Energy Storage for Concentrating Solar Power Systems.

### No. of Openings: 1

### Description:

Applications are invited for one (1) Doctoral Candidate (Research Fellow) position at the Department of Mechanical Engineering and Materials Science and Engineering – Archimedes Solar Energy Laboratory (ASEL), Cyprus University of Technology (CUT), within the framework of the Horizon Europe Marie Skłodowska-Curie Doctoral Network project “RESTORATIVE – Grid-scale Energy Storage: Imperatives for Accelerating the Green Transition”.

The PhD project focuses on the development, optimization, and dynamic modeling of high-temperature thermal energy storage systems suitable for concentrating solar power (CSP) applications. The successful candidate will work on the design and validation of novel concrete-based sensible heat storage materials operating at temperatures beyond 700°C.

The research activities include:

- Development and optimization of concrete-based thermal energy storage materials.
- Experimental characterization and validation of thermophysical properties.
- Dynamic system modeling using TRNSYS and Engineering Equation Solver (EES).
- Design and testing of thermal energy storage (TES) units.
- Charging/discharging experimental studies.
- Techno-economic assessment and benchmarking against competing technologies.
- Long-term dynamic simulation and system performance evaluation.

The doctoral candidate will participate in international secondments:

- Approximately 6 months at the University of Lleida, Spain.
- Approximately 3 months at B2Z, Spain.

The candidate will also participate in project-wide training activities, workshops, and international summer/winter schools organized within the RESTORATIVE Doctoral Network.

**Candidates applying through the corresponding Doctoral Vacancy Announcement procedure of the Cyprus University of Technology are also required to submit an application for the position “Research Fellow (Doctoral Candidate) – Postgraduate Associate / Assistant Researcher A – R1” under the RESTORATIVE Doctoral Network call [here](#)).**



### Required Qualifications:

- A two-year Master's degree (120 ECTS) or equivalent in Mechanical Engineering, Thermal Sciences, Energy Systems, or a related field.
- Very good knowledge of English (written and spoken).
- Strong interest in thermal energy storage systems and renewable energy technologies.

The following will be considered an advantage:

- Experience in thermo-mechanical energy storage systems.
- Experience with dynamic modeling software, especially TRNSYS.
- Programming and simulation skills.
- International mobility or professional/research experience abroad.

**Eligibility condition: According to the Marie Skłodowska-Curie mobility rule, applicants must not have resided or carried out their main activity (work/studies) in Cyprus for more than 12 months during the 36 months immediately before the recruitment date (September 2026).**

### Funding:

The position is funded by the European Union's Horizon Europe Research and Innovation Programme under the Marie Skłodowska-Curie Grant Agreement No. 101227219.

Further information for the position is available in the [official announcement](#).

Duration: 36 months

Monthly gross salary: €2458.33. From this amount employer and employee contributions to the Cyprus government funds will be deducted (Note: the monthly gross salary after the deduction of employer contributions amounts to €2130,26 until 31.12.28 and €2121,07 from 1.1.29 for 143,33 hours/month full time employment, based on the legislation currently in effect. From this amount, employee contributions will be deducted, according to current legislation). It is noted that there is provision for 13<sup>th</sup> salary (the cost of the 13<sup>th</sup> salary has been proportionally incorporated in the monthly remuneration as analyzed above).

### Additional allowances:

- Mobility allowance: €600/month
- Family allowance (if applicable according to Horizon Europe rules)

### Research Advisor:

**Name/Surname:** Prof. Soteris Kalogirou

**Position:** Professor

**Email:** soteris.kalogirou@cut.ac.cy