

**Marie Skłodowska Curie Action –Postdoctoral Fellowship 2024
(MSCA-PF-2024)**

Contact Person/Scientist in charge	Name	Luis F.
	Surname	González-Portillo
	Email	Lf.gonzalez@upm.es
Department /Institute /Centre	Name	Thermal Energy for Sustainability (TE4S) ETSI Industriales
	Address	c/ José Gutiérrez Abascal, 2
	Province	Madrid
Research Area		Information Science and Engineering (ENG)
Brief description of the Centre/Research Group		<p>The Thermal Energy for Sustainability (TE4S) research group specializes in applied thermal engineering from component and system level design to numerical analysis and experimental stages. Key areas of focus include concentrating solar technologies, hydrogen production, thermal energy storage, turbomachinery, advanced power cycles, and energy system modelling.</p> <p>TE4S is firmly committed to technological innovation, as demonstrated by the acquisition of over 50 patents, a significant number of which have international recognition, the publication of more than 300 research articles in leading journals, and almost 50 Ph.D. thesis in less than 20 years. These achievements are the result of participation in numerous projects funded by the Spanish and regional governments, the European Commission and the U.S. Department of Energy. TE4S has developed strong alliances with renowned academic institutions and laboratories such as MIT, IASS-Potsdam, or Sandia National Laboratories. In addition, frequent collaborations with industry and private companies in the energy, power, and propulsion sector boost TE4S innovation leadership.</p> <p>For further information, please visit: TE4S staff members: https://short.upm.es/qwmqx TE4S scientific production: https://short.upm.es/8a3zb</p>

Expression of Interest – UPM Supervisor

Project description	<p>This project aims to analyze innovative particle receivers for the next generation of Concentrating Solar Power (CSP) systems. By achieving very high operating temperatures (above 800°C), this approach is expected to enhance the efficiency of converting thermal energy to electricity and to decrease the cost of CSP. The challenge of implementing these advanced systems is currently being investigated by several organizations globally such as Universidad Politécnica de Madrid and Sandia National Laboratories in the United States. Given the constant collaboration between these two centers, this project has the potential to be conducted jointly at both institutions.</p> <p>This project will create mathematical models to study existing particle receivers' thermal and fluid behavior, using advanced simulation tools like ANSYS-CFX for detailed analysis and simpler models for initial comparisons with other technologies. The models will be validated with experimental data from Sandia National Laboratories to improve understanding and address issues like particle loss. The project will iterate between modeling and experimentation to optimize receiver designs and will include techno-economic analyses to assess the economic viability of the improvements, focusing on cost reduction in electricity generation for CSP plants.</p>
Applications: documents to be submitted and deadlines	<p>CV, motivation letter, 2 recommendation letters, Eligibility Self-declaration.</p> <p>Deadline: 30/04/2024</p>