

Expression of Interest

Postdoctoral Researchers through the POST-DOC/0524 Call

PHAETHON Research and Innovation Centre of Excellence ([PHAETHON CoE](#)) at the [University of Cyprus](#) (UCY) invites Expressions of Interest from postdoctoral researchers with an excellent research and publication track record, who would like to apply for a postdoctoral fellowship through the Research & Innovation Foundation's (RIF, the national funding agency) Call [POST-DOC/0524](#), with PHAETHON CoE as their Host Organisation.

PHAETHON CoE for Intelligent, Efficient and Sustainable Energy System is the evolution of the highly successful FOSS Research Centre for Sustainable Energy, through funding received from the "Teaming for Excellence" action of Horizon Europe. FOSS was established in 2014 and is a research powerhouse in the field of sustainable energy solutions, particularly solar photovoltaics (PVs) and grid integration. PHAETHON is hosted at UCY, the top national university in Cyprus, which aspires to become a leading institution in the Euro-Med region.

Any project funded under the POST-DOC/0524 Call will have a duration of 24 months and the deadline to submit a proposal to RIF is 5th of July, 2024. The main eligibility conditions for interested researchers are described at the end of this document and are fully described in the Call documents found in RIF's [IRIS Portal](#).

Expressions of interest are invited with the following supervisors / research themes:

1 Prof. George E. Georghiou

[George E. Georghiou](#) is a Professor in Renewable Sources of Energy and Grid Integration at the Department of Electrical and Computer Engineering of the University of Cyprus (UCY) and Head of the Photovoltaic Technology Lab, UCY and the Electromagnetics and Novel Applications Lab, UCY. He is a co-founder of the FOSS Research Centre for Sustainable Energy, UCY and a founding member of the recently established PHAETHON CoE. Having graduated from the University of Cambridge with a BA, MEng, MA and a PhD, Prof. Georghiou continued his work at the University of Cambridge in the capacity of a Research Fellow in the Electricity Utilization Group. He then served as a Lecturer and the undergraduate course coordinator in Electrical Engineering at the University of Southampton. His team has secured research funding in excess of 25 million Euros from bodies such as the European Union and the National Funding Agency, as well as industry (Honeywell, Q Cells, etc.). Prof. Georghiou is currently a member of the CENELEC and IEC committees on PV, while also serving as an expert evaluator for Horizon Europe energy proposals. He has published over 500 papers in international journals and conference proceedings and among his scholarly achievements are five outstanding paper awards for the most significant technical scientific contributions and an innovation prize. Prof. Georghiou is also an avid entrepreneur.

Main research fields: photovoltaics, energy systems, renewable energy sources (RES), grid integration of RES, smart electricity networks

A list of our research facilities is available through the following [link](#).

2 Dr. Maria Hadjipanayi

[Maria Hadjipanayi](#) is a research scientist at the PV Technology Laboratory of the University of Cyprus (UCY) and the FOSS Research Centre for Sustainable Energy of UCY. Since 2019, she is leading the strategic infrastructure unit 'DegradationLab' of UCY which focuses on testing new and emerging solar cell technologies. Her research interests lie at the interface between fundamental material science and device characterization for novel applications and her latest work focuses on the characterization of perovskite-based PV and measurement protocol development for emerging PV. She has received her BSc in Physics (2001) from the University of Cyprus and her DPhil (PhD) in Condensed Matter Physics (2006) from the University of Oxford. Her employment record includes a Post-Doctoral Research Associate position at the Quantum Information Processing Interdisciplinary Research Collaboration (QIP IRC), Department of Physics, University of Oxford (2006-2009) and an Associate Research Scientist post at the Energy, Environment and Water Research Centre of the Cyprus Institute (2009-2012). Maria has over 10 years' experience in national and European research projects (full project life-cycle involvement: from initiation to implementation, monitoring and reporting) and is currently the Coordinator of the European twinning project TESTARE (testare.eu).

Main research fields: indoor and outdoor characterization of new/emerging PV technologies (e.g. perovskite-based PV, tandems), development of testing protocols for new solar cell technologies.

3 Dr. George Makrides

[George Makrides](#) [[ORCID - 0000-0002-0327-0386](#) | [Google Scholar](#)] is a research scientist at the Department of Electrical and Computer Engineering and PHAETHON CoE, of the University of Cyprus. His research interests are in the energy field subdomains of renewable energy sources, grid integration of variable renewable sources, smart grids, battery energy storage systems, electric mobility, energy digitalization and data-driven analytics.

He had received the BEng degree in Electrical and Electronic Engineering at Queen Mary University of London (First Class Honours) in 2003, and the MPhil degree in Engineering at Cambridge University in 2004. He further received his PhD from the

University of Cyprus in 2012 (Thesis Title: Performance assessment of different grid-connected PV technologies utilising real outdoor measurements). During his studies he has received scholarships and academic excellence awards for outstanding performance from the University of London, the Cambridge Commonwealth Trust and the University of Cyprus.

Since 2005, he has been serving as a Research Fellow at the Department of Electrical and Computer Engineering and PHAETHON CoE, of the University of Cyprus. He has published >250 papers in international journals and conference proceedings, and his research has been awarded several outstanding paper awards (IEEE PVSC, EU-PVSEC and NREL best paper awards) and innovation prizes (European Technology Innovation Platform for PV, Cyprus Employers and Industrialists Federation, and Cyprus Scientific and Technical Chamber). He has coordinated and participated successfully in >35 National, European and industrially funded research projects (research funds recipient of >3 million Euros). He has compiled >20 reports (technical reports, policy briefs and whitepapers), and has invented a patent for the early detection of faults in PV systems (Patent number: [11456698](#)).

Lastly, he is a member of CENELEC, IEC, Sandia PVPMC and SunSpec, and has actively participated in various energy-field international agencies and platforms (IEA PVPS, ETIP-PV, CIGRE, PVQAT, EU Smart Grid WG4).

Main research fields: solar photovoltaics (performance, operations and degradation), grid integration of renewable energy sources, smart grids, battery energy storage systems, electric mobility, energy digitalization and artificial intelligence.

4 Prof. Panos Papanastasiou

[Panos Papanastasiou](#) is Professor in the Department of Civil and Environmental Engineering of the University of Cyprus (UCY) and founding member of Phaethon Research CoE on Intelligent, Efficient and Sustainable Energy Solutions. His research expertise and scientific contributions are in Applied and Computational mechanics for applications related to Energy and the Environment, including PV cracking, hydrogen and CO₂ geological storage. He has 12 years of experience in Industrial Research Environment (SLB:1990-2002) and 21 in Academic Research (UCY: 2002-present), managing several industrial and applied research projects on subsurface problems. He served as the Founding Head of Civil and Environmental Engineering (2002-08), Dean of Engineering School (2008-14), Director of Natural Gas Engineering Program (2013- present) of the University of Cyprus. He has coordinated or participated as a partner in several research projects with total funding to UCY of over € 2.0 million. He has advised over 15 experienced researchers (7 postdoctoral and 8 doctoral level) and several MSc students. He has published 83 articles in scientific journals, 113 conference proceedings, 10 book chapters, he edited 7 books, invented 3

patents, and wrote more than 50 industrial reports. His publications received 4556 citations, h-index-35 (source: Google scholar, 15/5/2024). He is in the Stanford University list that identified the top 2% of scientists worldwide in the combined areas Geosciences, Energy and Engineering. He is Editor of Geomechanics for Energy and the Environment (Elsevier), Associate Editor for the Rock Mechanics and Rock Engineering (Springer).

Main research fields: degradation of photovoltaics, hydrogen transport and storage, hydrogen subsurface storage

5 Assoc. Prof. Andreas Kyprianou

[Andreas Kyprianou](#) is Associate Professor at the Mechanical Engineering and Manufacturing department of the University of Cyprus. He studied Mechanical and Process engineering at the University Sheffield from where he graduated in 1996. He obtained his PhD in 1999 from the same University and MSc in Mathematics and the Foundations of Computer Science from Oxford University. In 2000-2001 and 2001-2003 he was research associate at the Department of Public and Business Administration of University of Cyprus and at the Engineering Department of University of Liverpool respectively. He acquired expertise in probabilistic neural networks, experimental and theoretical vibrations and advance signal processing. In 2003 he joined the department of Mechanical and Manufacturing Engineering of University of Cyprus as a lecturer. He has developed both independent and in collaboration research activities in advanced signal processing of vibrating structures and damage detection; cable and PV systems condition assessment using probabilistic neural networks; advanced signal processing for urban applications; data processing for vibration based condition monitoring and electricity market forecasting.

His current research interests are: theoretical and experimental characterization of mechanical vibrating structures and their health condition assessment in varying environmental and forcing conditions and the applications of wavelets and multiresolution analysis techniques in urban and power related applications. He has published in: Journal of Sound and Vibration, Journal of Automobile Engineering: Proceedings of IMechE, Mechanical Systems and Signal Processing, Measurement Science and Technology, IMechE Journal of Nanoengineering and Nanosystems, IEEE of Photovoltaics, Boundary Layer Meteorology, Urban Climate, Sustainable Cities and Society, Applied Energy and he is a regular reviewer for Mechanical Systems and Signal Processing, Structural Health Monitoring: An International Journal, Measurement Science and Technology, Journal of Sound and Vibration, Part c: Journal of Mechanical Engineering Science and Energy Strategy Reviews. As coordinator he has attracted funding 375440 Euros . He has supervised successfully 3 Phd students and co-supervised 2 Phd students and he is currently co-supervising one Phd Student.

Main research fields: Engineering and energy applications of advanced signal processing techniques; electricity market forecasting

6 Prof. Constantinos Christofides

Constantinos Christofides is Professor of Applied Physics and currently Chairman of the Cyprus Cancer Research Institute. He served the University of Cyprus as Rector and Vice-Rector of Academic Affairs with an active role in establishing the UCY in the research community worldwide and opening up the university broadly into society. Currently, he has a strong involvement in geopolitical aspects of energy by participating in think tanks and advising government committees. Prof. Christofides has also a research interest on the power balance and geopolitical conflicts affected by the economic changes in the Middle East and the Gulf, due to the penetration of new energy technologies.

Host Institution

The transformation of FOSS to a world-class research institution, PHAETHON CoE, is already underway, through partnership with leading European institutions in energy transition and sustainability, namely the Technical University of Denmark (DTU), that will help the CoE expand its thematic agenda into energy storage, e-mobility, smart grids and intelligent energy, and the University of Groningen (UG), that will integrate energy socio-economic, governance, environmental sustainability and green hydrogen themes. In addition, the top Cypriot start-up accelerator, Cyprus Seeds Limited (CS) will support the creation of a fully functional Innovation Hub at the CoE.

The Centre's vision is to make a significant contribution to a green energy future by creating an inspiring environment for state-of-the-art research on timely, multi-faceted research themes in the field of energy, that encompass technological, socio-economic, multi-level governance and environmental sustainability aspects. It also aspires to become a leading Innovation Hub, enhancing socio-economic development at national and regional levels.

The R&I activities of PHAETHON CoE are divided into five main areas:

1. Renewable energy sources and grid integration
2. Storage and e-mobility
3. Green hydrogen
4. Smart grids and intelligent energy
5. Energy socio-economic, multi-level governance and environmental sustainability

What we offer

- Join a vibrant and flourishing research community and gain support to accelerate your research career.
- Opportunities for proposals to include secondments at one of our advanced partners in the Teaming project (DTU or UG).
- Dedicated proposal writing guidance and proposal reviews by our experienced project support officers.

How to apply

If you are interested in applying for the MSCA Postdoctoral Fellowships with PHAETHON CoE as your host institution, please e-mail the following documents to Dr. Ioannis Theodorou (theodorou.g.ioannis@ucy.ac.cy) and Dr. Stamatis Dimopoulos (dimopoulos.stamatis@ucy.ac.cy) by 30 June 2024.

- **Curriculum Vitae (CV):** Please include a comprehensive list of publications, projects, and other relevant academic experience.
- **Short Motivation Letter:** Please outline your proposed project idea, demonstrating alignment with our research themes, and explaining how your expertise will contribute to the project.

Eligibility Conditions

According to the POST-DOC/0524 Call:

- The postdoctoral fellow must be named in the proposal and will be the Coordinator of the proposal, and committed in working in the proposal for its whole duration.
- The postdoctoral fellow must hold a doctoral degree for a maximum of seven (7) years from the date of award of the title until the announcement of the Call for Proposals, with exceptions described in the Call document (e.g. maternity or paternity leave).
- Projects can include Basic Research and/or Industrial Research and/or Experimental Development activities.