KIOS RESEARCH AND INNOVATION CENTER OF EXCELLENCE
UNIVERSITY OF CYPRUS

# ERC Synergy Grant Research Positions

**Title** : Special Scientist for Research Research Associate, Post-Doctoral Researcher
**No. of Positions** : Two (2) positions
**Location** : University of Cyprus, Nicosia, Cyprus.

**The KIOS Research and Innovation Center of Excellence** (www.kios.ucy.ac.cy) at the University of Cyprus (https://www.ucy.ac.cy) announces two research positions, for full-time employment. The successful candidates will have the opportunity to conduct research with **Prof. Marios Polycarpou** towards the goals of the flagship **ERC Synergy Grant** entitled **Water-Futures: Designing the Next Generation of Urban Drinking Water Systems** (https://waterfutures.eu).

The required skills and expertise for the announced positions include one or more of the following areas:

- Fault Diagnosis
- Systems and Control Theory
- Optimization
- Machine Learning
- Water Distribution System Analysis/Hydroinformatics

***University of Cyprus***

The University of Cyprus was officially founded in 1989 and started operating in Nicosia, the capital of Cyprus, in 1992. Within a short time, the University of Cyprus managed to achieve international recognition through an impressive course of development. Today, it is ranked 67th young university (under 50 years) and #251-300 worldwide in Engineering and Technology by the Times New Higher Education Rankings.

***KIOS Research and Innovation Center of Excellence (KIOS CoE)***

The KIOS Research and Innovation Center of Excellence is the largest research center at the University of Cyprus and has recently been upgraded to a European Research Center of Excellence through the KIOS CoE Teaming project. Currently, the Center employs more than 170 people, who are supported by externally funded research and innovation projects.

KIOS provides an inspiring environment for carrying out top level research in the area of Information and Communication Technologies, with emphasis on the Monitoring, Control and Security of Critical Infrastructures including power and energy systems, water networks, transportation networks, telecommunication networks and emergency management and response. The Center instigates interdisciplinary interaction and promotes collaboration between industry, academia and research organizations in high-tech areas of global importance. The KIOS CoE operates in a diverse environment as an equal opportunities' employer.

***ERC Synergy Grant Water-Futures*** (https://waterfutures.eu)

The world population living in urban areas is expected to increase to 70% of 9.7 billion by 2050. Historically, as cities grew, new water infrastructures followed as needed. However, these developments had less to do with real planning than with reacting to crisis situations and urgent needs, due to the inability of urban water planners to consider long-term, deeply uncertain and ambiguous factors affecting urban development and water demand. These, coupled with increasing uncertain climate conditions, indicate the need for a more holistic and intelligent decision-making framework for managing water infrastructures in the cities of the future.

This project aims to develop a new theoretical framework for the allocation and development decisions on drinking water infrastructure systems, so that they are socially equitable, economically efficient and environmentally resilient, as advocated by the UN Agenda 2030, Sustainable Development Goals. The framework will integrate real-time monitoring and control with long-term robustness and flexibility-based pathway methods, and incorporate economic, social, ethical and environmental considerations for sustainable transitioning of urban water systems under deep uncertainty with multiple possible futures.

The Water-Futures team will build on synergies from the four research groups, transcending methodologies from water science (Prof. Dragan Savic, KWR/Exeter), systems and control theory (Prof. Marios Polycarpou, KIOS CoE/UCY), economics and decision science (Prof. Phoebe Koundouri, AUEB), and machine learning (Prof. Barbara Hammer, BU), into an integrated decision and control framework.

Our research team at the University of Cyprus focuses on the theory and application of monitoring and control in urban water distribution systems, while considering their evolution in time, unpredictable events such as contamination, device faults and failures, as well as the evolution of risk in the system and the presence of humans-in-the-loop.

## ***Job details:***

### ***Short Description – Duties and Responsibilities:***

The successful candidate will be responsible to conduct fundamental and/or applied research in the area of Information and Communication Technologies, with emphasis on the Monitoring, Control and Security of Water Distribution Systems. Depending on their qualifications and expertise, the successful candidate may be responsible to prepare reports and project deliverables, contribute to the preparation of research proposals, and assist in the supervision of undergraduate students. Furthermore, the successful candidate is expected to publish his/her research results in top international conferences and journals.

### ***Profile of the ideal candidate:***

The ideal candidate must be able to work independently and/or in a team in fundamental and/or applied research. The ideal candidate must be able to produce, publish, and present research results in high quality conferences and journals, attend academic and/or other conferences and seminars for further personal and professional development, possibly assist in the preparation of research proposals, present periodically to KIOS personnel the progress of their research, and assist in the training, education, and dissemination activities of the KIOS CoE.

***Qualifications and Experience:***

- Bachelor's or/and Master's Degree in Electrical Engineering or Computer Engineering or Computer Science, or Mathematics, or a related field from an accredited institution
- Doctorate degree or equivalent in the subject areas directly related to Information and Communication Technologies or Engineering and Technology, or other related field from an accredited institution

***Employment Terms:***

The position is on a contract basis. Initially, a one-year contract will be offered, which is renewable based on performance. The gross monthly salary depends on the candidate's qualifications and expertise and will be between €1900 - €3200. From this amount, employee contributions to the Cyprus government funds will be deducted. The 13$^{th}$ salary bonus is incorporated in the monthly salary. Maternity leave will be granted based on Social Insurance Laws from 1980 until 2012.

***Application:***

Interested candidates should submit the following items online through the link: https://applications.ucy.ac.cy/recruitment.

- Cover letter that specifies their employment availability date
- Short description of their academic and research experiences (can be combined with the cover letter) (1-page maximum)
- A detailed curriculum vitae in English
- Copies of transcripts of BSc/MSc/PhD degree(s)
- The names and contact information of at least two academics, who can provide reference letters upon request.

The University of Cyprus shall collect and process the candidates' personal data according to the provisions of the General Regulation on Personal Data 2016/679 (EU).

The applications should be submitted as soon as possible, but not later than **Friday, 15$^{th}$ April 2022, at 5 pm.** The evaluation of the applications will begin immediately after receipt. For more information, please contact Prof. Marios Polycarpou (mpolycar@ucy.ac.cy), or the KIOS Center of Excellence, by phone at +357 22893460 or via e-mail at kioshiring@ucy.ac.cy .