



Πανεπιστήμιο Κύπρου
University of Cyprus

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
PHD RESEARCH ASSISTANT

Title	: Special Scientist (PhD Research Assistant)
No. of Position(s)	: One (1)
Category	: Full-time employment - 2 nd May 2019 – 30 th April 2022
Location	: University of Cyprus, Nicosia

JOB TITLE

H2020 FET-OPEN Ph.D. Position in RF/Microwaves and Antennas for Externally Controllable Molecular Communications at the University of Cyprus

JOB SUMMARY

The Department of Electrical and Computer Engineering at the University of Cyprus (UCY), announces one vacancy for a full-time Ph.D. position (under the Special Scientist category), funded under the European Horizon 2020 project “*GLADIATOR - Next-generation theranostics of brain pathologies with autonomously externally controllable nanonetworks: a trans-disciplinary approach with bio-nanodevice interfaces*”. The GLADIATOR project is a Horizon 2020 FETOPEN project that involves six leading academic institutions (University of Cyprus, University of Oulu, Fraunhofer Institute for Biomedical Engineering, Waterford Institute of Technology, Norwegian University of Science and Technology, and Osaka University) and EPOS-Iasis, a vibrant nano-biotechnology SME. The ideal candidate will have experience in RF/microwaves and antennas, preferably for biomedical applications.

JOB DESCRIPTION

The aim of the GLADIATOR project is to create a theranostic (therapeutic + diagnostic) system for the diagnosis and treatment of brain cancer, consisting of a head-wearable patch for power transfer and communication with a multimodal (RF, photonic and ultrasound) micro-implant. GLADIATOR will produce a working prototype of a complete, autonomous, clinically-ready, nanonetwork-based molecular communications system based on externally controllable molecular communications (ECMC). That is, through breakthroughs in both cell biology and RF/photonic devices, the system will use directive electromagnetic radiation from an advanced antenna array to re-program engineered neural stem cells in order to treat cancerous tumours. The system will consist of a hybrid bio-electronic interface with coupled external and implantable devices, which will establish communication channels with host-derived fluorescent reporter cells via micro-optoelectronic sensors. The cellular, sub-cellular and electronic components will be integrated into a wireless ECMC system residing on the patient’s head. The system will autonomously monitor the spatiotemporal tumour evolution and recurrence, and will generate on demand appropriate re-programming interventions by stimulating the engineered stem cells with RF radiation at specific frequencies.

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 has managed to achieve international recognition through an impressive course of development. Today, it is ranked 64th best young university (under 50 years) and #351-400 worldwide by the Times New Higher Education Rankings. These and many other distinctions are the result of our dedication to excellence and continuous development. The recruited Special Scientist will be enrolled in the Ph.D. programme of the Dept. of Electrical and Computer Engineering (ECE) and will have access to the experimental facilities of both the ECE Dept. and the EMPHASIS Research Centre (<http://www.emphasis.ucy.ac.cy/>).

DUTIES AND RESPONSIBILITIES:

- Develop models to investigate optimal RF stimulation and short range RF/optical communication.
- Design and simulation of directive antenna array systems for biomedical applications, and their integration into a flexible head-wearable patch.

- Design and simulation of electromagnetic metamaterial structures.
- Fabrication and testing of prototypes
- Close interaction and collaboration with other researchers in the GLADIATOR consortium, including reporting to the project coordinator as appropriate.
- Collaborating and supporting the local team at UCY towards the implementation of research objectives.

REQUIRED QUALIFICATIONS AND SKILLS:

- Bachelors degree in Electronics, Electrical Engineering, Physics or a related discipline.
- Excellent command of the English language (written and verbal).
- Relevant research experience in RF/microwaves and antennas.
- Excellent organisation, time management, collaboration and communication skills.

EMPLOYMENT TERMS:

The period of employment will be 3 years, starting from 2nd May 2019. The employment cost for this full time position (140 hours per month) is €3250 per month (cost of employer). Employee and employer contributions will be deducted from this amount. The position does not include a 13th Salary bonus or medical insurance coverage.

SUBMISSION OF APPLICATIONS:

Interested candidates should submit the following items, in PDF or Word format, via e-mail to Prof. Stavros Iezekiel (email: iezekiel@ucy.ac.cy) by the 15th of April 2019:

1. Cover letter that specifies their employment availability date.
2. A detailed curriculum vitae (contact address and telephone number should be included).
3. Copy of bachelors degree certificate and of transcripts.
4. The names and contact details of two persons, of whom at least one is an academic, from whom references may be requested.

For more details and clarifications, you may contact Prof. Stavros Iezekiel, +357 22892190, iezekiel@ucy.ac.cy.