

# PRESS RELEASE

FOR PUBLICATION

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**EUROPEAN SCHOLARSHIP MARIE-CURIE TO DR. CHARALAMBOS ANASTASSIOU  
POST DOCTORAL FELLOW AT UNIVERSITY OF CYPRUS**

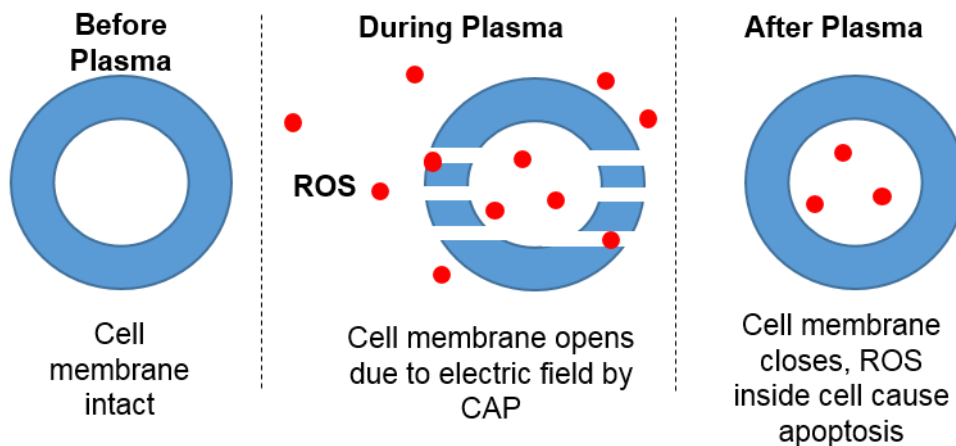
**For research on finding a new cancer therapy**

**Marie Curie Fellow from ENAL, Electromagnetics and Novel Applications Lab of University of Cyprus  
aims for new cancer treatment**

A two-year EU Marie Skłodowska-Curie scholarship was granted to Dr. Charalambos Anastassiou, post-doctoral fellow at the Electromagnetics and Novel Applications Lab –ENAL of the Department of Electrical and Computer Engineering at the University of Cyprus, through the Horizon 2020 program.

The scholarship was awarded for developing a new medical cancer therapy and the total funding amount is €163,648.





**Less pain and faster recovery time for cancer treatment.** Specifically, the grant involves the investigation of a new medical treatment, based on plasma processes at atmospheric pressure and room temperature. This new type of energy has many potential medical applications ranging from chronic wound healing, drug

delivery, immune system activation to fight a range of diseases, to cancer treatment.

An important property of this type of energy in the treatment of cancer is that it can selectively treat diseased tissue while leaving the healthy tissue intact. This *selectivity*, which is the focus of this project, will have significant implications in the surgical treatment of cancer. It will result in less pain and faster recovery times for the patient and also in the ability to cure forms of inoperable cancer which has spread too much or that it is so intermingled that any operation will damage too much critical tissue. To investigate and ultimately optimize this selectivity, a series of experiments is planned to explore how the electric field and the reactive oxygen species (ROS) produced by CAP interact with cancerous and healthy cells. *The goal will be to determine the optimal conditions under which cancer cells die while healthy cells are not harmed.* The process by which CAP can cause cell apoptosis (controlled death) is by opening up the membrane and allowing ROS to enter. For the optimal conditions this process occurs for cancerous cells but not healthy ones.

This multidisciplinary international research under the supervision of Associate Professor George E. Georghiou from the Electrical and Computer Engineering Department of the University of Cyprus brings together Physicists, Engineers and Biologists from Cyprus and Romania. Specifically, the work will be conducted in very close collaboration with Physics Researcher Dr. Ionut Topala from Alexandru Ioan Cuza University (Romania), Mechanical Engineering Assistant Professor Triantafyllos Stylianopoulos (UCY), and Biology Professor Kyriacos Kyriacou from the Cyprus Institute of Neurology & Genetics.

### Electromagnetics and Novel Applications Lab

The Electromagnetics and Novel Applications Lab (ENAL) was established by the Department of Electrical Engineering at UCY and is managed by Associate Professor George E. Georghiou. The Lab has been awarded the international accreditation for Quality in testing and calibration (ISO/IEC 17025) and it investigates a wide range of effects in the area of electromagnetic fields. It also explores novel applications such as trapping of DNA via the application of electric fields.

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**End of Announcement**