



**FOUNDATION FOR RESEARCH AND TECHNOLOGY - HELLAS (FO.R.T.H.)
INSTITUTE OF ELECTRONIC STRUCTURE & LASER**

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Applications are invited for a three year Marie Curie Early Stage Research Fellowship on

“Biomedical application of two-photon polymerization”

This is available in the framework of the Marie Curie ITN Project ‘TOPBIO’. The fellow will be based at IESL-FORTH, Heraklion, Greece, but will also spend time with one or more of the other Network Partners who are based in France, Poland, Germany, Denmark, UK, Italy, Estonia and Lithuania.

The fellow will be encouraged to register for a Ph.D. Eligible candidates should have a degree in Materials Science, Chemistry, Physics or a relate discipline and should have less than four years of research experience. In addition, they should not have lived in Greece for more than 12 months in the last 5 years.

Project Description

Complex three-dimensional nanostructures have attracted great attention for the development of many components and devices for biomedical applications. Biodegradable photostructurable materials for the fabrication of nanostructures are particularly advantageous for use in drug-delivery and tissue engineering, since they allow the elimination of the scaffold and the release of the active component or the formation of free standing cell sheets, respectively. The fellow will be trained on the synthesis of biodegradable materials and the characterization of their properties. The materials will be based on multifunctional macromolecular biodegradable liquid precursor molecules (i.e. polycaprolactone, poly(lactic acid), and their copolymers). Their suitability for structuring using two-photon polymerization will be explored and the structural and mechanical properties of the fabricated structures will be characterized by SEM/TEM, ellipsometry and mechanical testing. The biological compatibility of the fabricated structures will be investigated by seeding them with appropriate cells and the release profile of various immobilized active molecules (nucleic acids, peptides and proteins), following the biodegradation of the 3D structures.

For more information please contact:

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