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I am a FP7 REGPOT post-doctoral researcher with education in photonics and lasers, with a first degree in physics and knowledge of non-linear imaging at microscopic level for biological applications, with particular experience in:

(a) Non-linear imaging (Second and Third Harmonic Generation, Coherent Anti-Stokes Raman Scattering and Two Photon Excitation Fluorescence) at microscopic level for biological applications, (b) Raman Spectroscopy on lipids & proteins (c) Atomic Force Microscopy; lipid bilayers, interactions with proteins, changes of protein structure (annular & globular shape, fibril formation) and on fixed MCF-7 breast cancer cells, (d) Tip-Enhanced Optical Microscopy optimization, (e) Amyloid disease: Interactions of peptides & lipid bilayer, (f) Optical Biopsy with Visible and Infrared Laser Light - Optical characterization of tissue.

I received my first degree in Physics in 2005 and two years later my Master degree in Optoelectronics – Microelectronics both obtained from the *Physics department of the University of Crete*. In 2012 I completed my PhD degree working for the *Institute for Materials & Processes of the University of Edinburgh* as an EPSRC fellow. I had been studying the conformations of the β -amyloid peptide ($A_{\beta(1-42)}$) and its interactions with model lipid membranes using advanced microscopy techniques (Coherent Anti-Stokes Raman Scattering, Atomic Force Microscopy and Raman spectroscopy).

At the moment I am working with a non-linear microscope using the modalities of SHG, TPEF and THG to study aging on *C. elegans*.

Publications

M.Mari, V.Koutsos, A. Downes, A.Elfick, “**Beta amyloid aggregation: an atomic force microscopy study**”, *submitted*.(2014)

A. Downes, R. Mouras, M. Mari, A. Elfick , “*Optimising tip-enhanced optical microscopy*” *Journal of Raman Spectroscopy* **40**(10):1355-1360.(2009)

G. Filippidis, E. J. Gualda, M. Mari, K. Troulinaki, C. Fotakis, N.Tavernarakis “*In vivo imaging of cell morphology and cellular processes in Caenorhabditis elegans, using non-linear phenomena*” *Micron* **40**(8): 876-880. (2009)

E. J. Gualda, G. Filippidis, M. Mari, G. Voglis, M. Vlachos, C. Fotakis and N. Tavernarakis “*In vivo imaging of neurodegeneration in Caenorhabditis elegans by Third Harmonic Generation microscopy*” *Journal of Microscopy* **232**(2):270-275. (2008)

E. J. Gualda, G. Filippidis, G. Voglis, M. Mari, C. Fotakis, N. Tavernarakis “*In vivo imaging of cellular structures in Caenorhabditis elegans by combined TPEF, SHG and THG microscopy*” *Journal of Microscopy* **229**(1):141-150. (2008)