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Education and Culture DG  
Lifelong Learning Programme

EACEA  
Education, Audiovisual & Culture  
Executive Agency



FORTH

Foundation for Research & Technology - Hellas



HELLENIC REPUBLIC  
UNIVERSITY OF CRETE

# Biophotonics and molecular Imaging (BiMI)

## Summer School

Heraklion - Crete, Greece  
July 28 - August 1, 2014

**Organized by:**

UNIVERSITY OF CRETE

FOUNDATION OF RESEARCH AND TECHNOLOGY HELLAS

### Coordinators:

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## Partners



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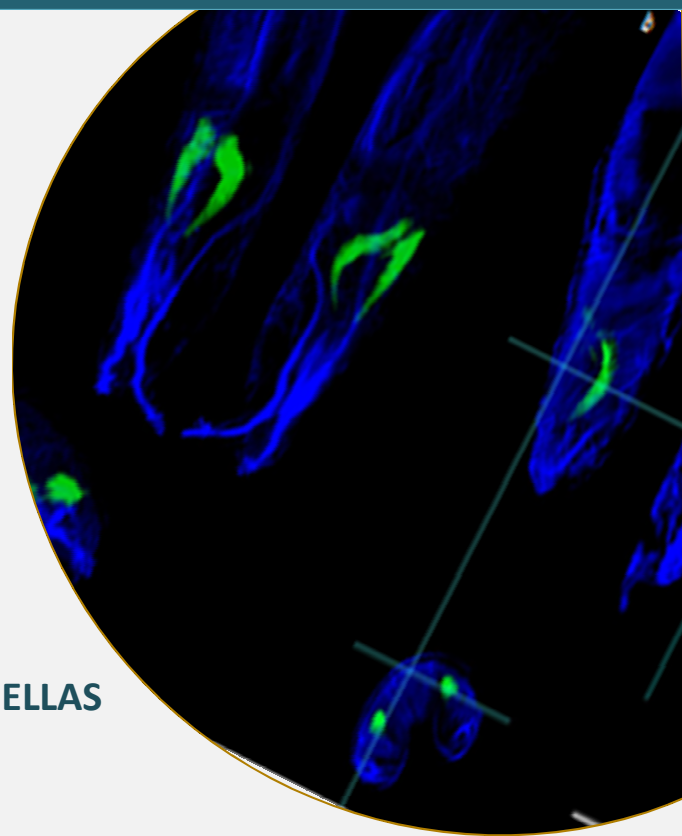
Universiteit  
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European Molecular Imaging

emids  
Doctoral School

instn

Institut National des Sciences et  
Techniques Nucléaires



<http://www.uoc.gr/intrel/uk/index.htm>

## Subjects covered:

Principles of Imaging Optics  
Theory of light propagation  
Introduction to Spectroscopy  
Principles of Microscopy:  
fluorescence and confocal  
Super-resolution microscopy  
Modern contrast agents,  
fluorophores and applications  
Photoacoustic imaging  
Optical Tomography  
Image Reconstruction methods  
Applications of optical imaging in biomedicine



## EMIDS Workshop "Biophotonics and Molecular Imaging (BiMI)" schedule

Monday July 28	Tuesday July 29	Wednesday July 30	Thursday July 31	Friday August 1
9:00 - 9:15 <b>Welcome</b> Sifis Papamatheakis - Giannis Zacharakis	9:15 - 11:00 <b>Principles of Microscopy and Fluorescence and Confocal Microscopy</b> Nektarios Tavernarakis	9:15 - 11:00 <b>Fluorescence Tomography</b> Giannis Zacharakis	9:15 - 11:00 <b>Optical Projection Tomography and Super resolution microscopy</b> Udo Birk	9:15 - 13:00 <b>Papers Discussion</b> Final Report on assigned papers
9:15 - 11:00 <b>Introduction to Imaging optics</b> Dimitris Papazoglou				
11:15 - 13:00 <b>Principles of Spectroscopy</b> Stelios Tzortzakis	11:15 - 13:00 <b>Advances in nonlinear imaging</b> Pablo Loza-Alvarez	11:15 - 13:00 <b>Image reconstruction methods</b> Athanasios Zacharopoulos	11:15 - 13:00 <b>Optoacoustic imaging and Multimodal tomographic imaging</b> Vasilis Ntziachristos	
14:15 -15:00 <b>Principles of Optics</b> Jorge Ripoll	14:15 - 16:00 <b>Fluorescence proteins</b> Konstantin Lukyanov	14:15 -15:00 <b>Adaptive optics</b> Diego Di Battista	14:15 -15:00 <b>Molecular Imaging in disease detection</b> TBD	14:15 - 17:00 <b>Final Student Assessment</b>
15:15 - 16:00 <b>Principles of Optics</b> Jorge Ripoll		15:15 - 16:00 <b>Imaging in cancer research</b> Rosy Favicchio	15:15 - 18:00 <b>Lab visits</b> Fluorescence microscopy Confocal microscopy Non-linear microscopy 3D microscopy Fluorescence tomography	
16:15 - 18:00 <b>In vivo gene expression</b> Sifis Papamatheakis	16:15 - 18:00 <b>Imaging with nanobodies</b> Tony Lahoutte	16:15 - 18:00 <b>Endomicroscopy</b> Anikitos Garofalakis		

## Learning objectives

The aim of this intensive program is to provide a multidisciplinary, theoretical and practical training in optical imaging methods and demonstrate the importance of such approaches to the study of biological phenomena and the applications in basic biological research and the translation to healthcare.

## Public:

Master and PhD students on molecular imaging, biology, biomedical science, chemistry, physics and related sciences.

Credits: 3 ECTS

**REGISTRATIONS NOW OPEN!**