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ULTIMISSIME Latest News

Multimodal and nanoscale optical microscopy

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The Course "Multimodal and Nanoscale Optical Microscopy" of the International School of Physics "Enrico Fermi" of the Italian Physical Society will be held in the beautiful venue of Villa Monastero, Varenna, Italy, from 11 to 16 July 2021.

With a dream team that will bring you to the world of multimodal and nanoscale optical microscopy, from the concepts of resolution and super-resolution to multimodal optical nanoscopy, the Course will touch both basic and advanced concepts, including correlative and label free microscopy.

Sara Abrahamsson, Francisco Balzarotti, Sophie Brasselet, Julien Colombelli, Elisa Ferrando-May, Laura Finzi, Luca Lanzanò, Davide Mazza, Peter Saggau, Giuliano Scarcelli, Giuseppe Vicidomini and Rachel Pei Chin Won, directed by Paolo Bianchini, Colin Sheppard and Alberto Diaspro, will play for you the best optical "Symphony of the Year".

New instruments, challenging theoretical approaches, amazing applications from the molecular level to humans will be the movements of our performance. The development of optical microscopy towards nanoscopy and multimodal microscopy will be the common thread towards a tuneable and fluid storyboard down to the nanoscale, to decipher functioning mechanisms in living systems. Fluorescence, linear and nonlinear microscopy, label-free with Mueller matrix and Brillouin microscopy, F-methods such as FRAP, FLIM, FRET and FCS, super-resolution, phototoxicity and photodamage, optical and magnetic trapping, image formation, and bioimage analysis, are some of the topics we will discuss in this School.

Our bet is that you can be back home or to your lab with at least one new idea. This is a rapidly changing field with an increasing number of questions to be answered.

Paolo Bianchini – Researcher and technologist in the Nanoscopy Group at the Italian Institute of Technology (IIT), Genoa, Italy. He is managing the Nikon Imaging Center at IIT. His research aims at the development of novel paradigms in multiphoton excitation and super-resolution microscopy to address present challenges in biophysics.

Alberto Diaspro – full professor of Applied Physics at the Department of Physics of the University of Genoa, research director at the Italian Institute of Technology (IIT) and academician of the Ligurian Academy of Sciences and Humanities. He is SPIE fellow, IEEE and OSA senior member. He received the Emily M. Gray Award in 2014 and the Award for Scientific Communication by the Italian Physical Society in 2019.

Colin Sheppard – External Collaborator and Visiting Scientist with the Italian Institute of Technology, Genoa, Italy, and Honorary Professorial Fellow at the University of Wollongong, Australia. He was previously Professor in the Department of Bioengineering at the National University of Singapore, Professor of Physics at the University of Sydney, and University Lecturer at the University of Oxford.