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AD is Director of the Department of Nanophysics at the Istituto Italiano di Tecnologia (IIT), Deputy Director of IIT, Chair of the Nikon Imaging Center at IIT, Professor of Applied Physics at the Department of Physics of University of Genoa. He was President of OWLS, EBSA and Appointed Vice President of ICO. His research experience is related to the design, realisation and utilisation of optical and biophysical instrumentation in molecular oncology, neuroscience and smart materials. AD published > 350 papers, 9500 citations, H=47 (source Google Scholar). He is Editor in Chief of Microscopy Research and Technique, IEEE senior member, OSA senior member and SPIE fellow. He received the Emily M. Gray Award of the Biophysical Society in 2014. AD is President of the Scientific Council of “Festival of Science” (www.festivalscienza.it).

ABSTRACT

A multi messenger microscope using a liquid and tunable approach to paint chromatin in cells

A multi messenger microscope designed within liquid tunable microscopy approach - LIQUITOPY® - is presented. The possibility of integrating different light-matter interactions for imaging is the starting point for the design and realisation of a LIQUITOPY® architecture (Won R (2018) Nature Phot; Diaspro A et al. (2018) BJ). It aims integrating simultaneous acquisition mechanisms coupled with supervised machine learning to foster a brand-new way of imaging. It is liquid because it operates with a blend of mechanisms of contrast and tunable in terms of spatial and temporal resolution. It aims to contribute to elucidate an open universal question in biology about the way chromatin organisation in the nucleus rules the compaction and function of the human genome in the interphase of cells and mitotic chromosomes.