

Tatiana Novikova,*a Bernard Drévillon,a Laurent Schwartz,a Pierre Validire,b André Nazac,c,d Razvigor Ossikovski,a Enric Garcia-Caurel,a Blandine Laude-Boulesteix,a Makrina Anastasiadou,a Maria Losurdo,e Kurt Hinderl,f Bicher Haj Ibrahim,a Maria-Rosaria Antonelli,a Angelo Pierangelo,a Stanislas Deby,g Stéphane Roussel,a Sandeep Manhas,a,g Jérémy Vizet,a,g Dominique Pagnoux,g Stéphane Bancelin,h Marie-Claire Schanne-Klein,h Jean Rehbinder,a Huda Haddad,a François Moreau,a Jean-Charles Vanel,a Pere Roca i Cabarrocas,a Valery Tuchin,i and Steven Jacquesj

aLPICM, CNRS, École polytechnique, Université Paris-Saclay, Palaiseau, France
bInstitut Mutualiste Montsouris, Département d’Anatomopathologie, Paris, France
cService de Gynécologie Obstétrique, CHU de Bicêtre AP-HP, Le Kremlin-Bicêtre, France
dCHU Brugmann, Service Gynécologie et Obstétrique, Brussel, Belgium
eInstitute of Inorganic Methodologies and Plasmas-IMIP-CNR, Bari, Italy
fCenter for Surface and Nanoanalytics, Johannes Kepler University Linz, Austria
gUniversity of Limoges, CNRS, Xlim Institute, Limoges, France
hLOB, CNRS, Inserm, École polytechnique, Palaiseau, France
iSaratov National Research State University, Research-Educational Institute of Optics and Biophotonics, Saratov, Russia
jOregon Health & Science University, Portland, Oregon, United States

The head of the polarimetric group of the Laboratory of Physics of Interfaces and Thin Films (LPICM) at École polytechnique, France, Dr. Antonello De Martino, passed away on August 23, 2014, after 35 years of a brilliant research career (see Fig. 1). He was an alumni of the École polytechnique French engineering school, and a senior scientist 1st class at the National Centre of Scientific Research (CNRS). He was also a professor in the Physics Department of École polytechnique. Antonello, as he was known to his colleagues and friends, started his career at Quantum Optics Laboratory in 1980, working on the generation of far-infrared (IR) radiation, IR multiphoton absorption, and the interaction of gas clusters with surfaces. In 2000 he joined the group of polarimetric optical instrumentation of LPICM. Antonello, who had acquired great expertise in using polarized light for detection of resonance-enhanced multiphoton ionization, was able to see the potential of Mueller matrix polarimetry experiments for a number of practical uses. Pushing the limits, he led the development of new polarimetric instruments and applications.

In particular, Antonello contributed to the development of the spectroscopic Mueller matrix polarimeter, suggesting a new instrumental design based on the use of liquid crystals. Thereafter, he expanded this Mueller matrix polarimetric technique into the imaging field. Apart from important contributions to the instrument development, Antonello pioneered the applications of Mueller matrix polarimetry in several diverse areas. The ability of Mueller matrix polarimetry to provide all polarimetric properties of a sample, such as depolarization, retardance, and diattenuation, has opened new perspectives in the biomedical field, in particular for the early diagnosis of cancer. For his preclinical studies on the application of a multiwavelength Mueller matrix imaging polarimeter for the optical biopsy of cervical cancer, Antonello was awarded the Prize for Innovation of École Polytechnique in 2012. His seminal ideas were at the core of the research project devoted to the development of an endoscopic Mueller matrix polarimeter for in vivo biomedical applications.

Antonello was the author of many scientific papers, several book chapters, and patents. Also an inspired educator, he taught for many years in the Physics Department of École polytechnique. In particular, he was responsible for the activities of the Center of Experimental Physics for almost ten years. He succeeded to transfer his enthusiasm and passion for science to the students by confronting them with new experimental facts and placing them at the frontiers of knowledge of modern physics.

All those who had the privilege to know, work, and interact with Antonello feel the pain of losing a colleague and a great friend who will be remembered as an outstanding researcher.

*Address all correspondence to: Tatiana Novikova, E-mail: tatiana.novikova@polytechnique.edu

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and passionate teacher. He showed admirable courage in facing his illness, against which he fought for many years.

References


