

Short Professional Biography of PIETRO FERRARO

Dr. Pietro Ferraro received the doctor of Physics degree, summa cum laude, from the University of Napoli "Federico II", Italy, in 1987. Soon after he joined Aeritalia-Alenia Aeronautics (the major Aerospace company in Italy) as researcher to develop applied research in Optical Non-Destructive Testing of carbon fiber materials. He has been Principal Investigator (PI) (1991-1993) on behalf of Composite Materials Research Center of Alenia for two R&D Projects in the frame of a Cooperative Research And Development Agreement (CRADA) between Finmeccanica (Roma) and United Technologies Research Center, Electronics & Photonics Group (Directed by Dr. A.J. De Maria), East Hartford, CT (USA).

The two research projects were on "Non destructive testing of large composite aircraft structures by Holography methods" (PI for UTRC Dr. Karl A. Stetson) and "Fiber Optic Bragg Grating Sensors" (PI for UTRC Dr. J. R. Dunphy). During this cooperation he contributed to pioneering work on Fiber Bragg Grating for strain sensing, development of related instrumentations and optical fiber embedding process in composite materials for which 3 patents were awarded jointly to Finmeccanica and UTRC.

In 1993 he joined Consiglio Nazionale delle Ricerche (CNR) Optics Group at Institute of Cybernetics, Pozzuoli (Napoli), Italy as Associate Researcher to develop interferometric and holographic methods for testing and characterization of optical components and materials. In 2001 he joined as Researcher the CNR-Institute of Microelectronics and Microsystems, Napoli.

In 2003 he joined National Institute for Applied Optics (INOA) as Senior Research Scientist.

Since 2005 he is Head of the Research Line and Group on behalf of CNR in Optical diagnostics, Interferometric and Microscopy.

Actually he is *Director of the Research Unit/Labs INOA in Napoli* (7 optical labs and 20 persons of staff).

He has worked on a number of areas in optics research ranging from laser interferometry, holography for optical characterization of materials, components and devices, including MEMS, MOEMS, waveguides, etc.), optical fiber sensors, holographic lithography, micro- and nano- structuring of ferroelectric optical crystals (LiNbO₃) for application in photonics.

He is now pursuing his interests in micro- nano- structuring advanced ferroelectric photonic crystals and materials, poling, photorefractivity, quantitative phase-contrast microscopy by digital holography for in-vivo cells investigation, 3D imaging and display either with visible and IR laser light. In addition he is leading his group in optical microdevices and instrumentations development based on LiNbO₃ such as phase-array, point-diffraction-interferometer, microfluidic structures.

He has been in 2004 Visiting Research Scholar at University of Connecticut, Storrs CT USA.

He is (2006 -2007) Professor of Image Processing (EID-SICSI) at University of Napoli "Federico II".

He has given seminar at (College for Optical Science, University of Arizona, Tucson, AZ, USA; Zygo, CT, USA; Worcester Polytechnic Institute, MA, USA; Institute of Optics University of Rochester, NY, USA; California Institute of Technology, Pasadena, CA, USA; Université de Neuchâtel, Switzerland; Université de France-Comté, Besançon, France.

Dr. Ferraro has published over 130 papers in optics/photonics in peer reviewed journals. He has published over 150 conference proceedings, including over 20 invited international conference papers and presentations.

He has completed 3 book chapters and is currently being Editor of a book *Micro-/Nanoengineering and characterization of Ferroelectric Crystals for Photonic Applications, Springer (Germany)* .

He has been Editor of 10 Special Issues published in *Optics and Lasers in Engineering* (Elsevier) and of Journal of Optics A. (Institute of Physics).

He has 12 patents, some of which have been licensed by industry.

He is Topical Editor of *Optics Letters*, member of the Editorial Board of the *Optics and Lasers in Engineering Journal (Elsevier)* and Member of Int. Editorial Board of *Measurement & Science Technology Journal (Institute of Physics)* and Editor of *Research Letters in Optics (Hindawi)*. He is active as reviewer for major journals in optics/photonics.

His research has been cited and/or selected to appear in *OE Magazine*, *SPIE Newsroom*, *Virtual Journal of Nanoscale Science & Technology (AIP)*, *Virtual Journal of Biological Physics Research (AIP)*, *Virtual Journal for Biomedical Optics (OSA)*, *Laser Focus World Magazine*, *EOS Newsletters*, *The Researcher (UTRC)*, *HOLOGRAPHY NEWSLETTER* by SPIE International Technical Group Newsletter.

He has either chaired 3 international conferences two of which for the European Optical Society (EOS). Moreover he served on the program committees and chair sessions of more than a 20 international and on optics/photonics, imaging, and information systems sponsored by SPIE.

Elected to the grade of *Fellow of SPIE (2008)*

Elected to the grade of *Senior Member of IEEE (2007)*

Since 2002 is in the board of Italian Chapter of IEEE-LEOS. From 2007 is member elected of the presidential board of Italian Society of Optics and Photonics (SIOF-EOS).

He is member of OSA.