Curriculum

Prof Daniele Fioretto
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Education and Employment:
1963 August 10, born in Perugia (Italy).
1988 Degree in Physics (Laurea, cum laude) at the University of Perugia.
1994 Ph.D. in Condensed Matter Physics at the University of L'Aquila.
1994 Researcher at the Engineering Faculty of the University of Perugia.
2004 Associate Professor.
2010 Full Professor of Physics of Matter at the University of Perugia.

Research Activity:
Since 1998, leader of the Research Group on Soft Matter and Glasses at the Department of Physics (now Department of Physics and Geology) of the University of Perugia (http://ghost.fisica.unipg.it).
He has been working on different scientific topics, including the micro- and nano-spectroscopic-imaging of biological systems, the collective and single particle dynamics of pure water and of hydration water in systems of biological interest, the collective dynamics of amorphous solids, the structural arrest in glass transition, gelation and polymerization processes.
In the framework of this research activity, he set up the laboratories of Brillouin Spectroscopy, simultaneous micro-Brillouin and micro-Raman spectroscopy, Photon-Correlation Spectroscopy and Dielectric Spectroscopy at the Department of Physics of the University of Perugia. He led the development of the Extended frequency range Depolarized Light Scattering (EDLS) technique and participated to the development of a high-resolution ultraviolet Brillouin scattering setup at the Elettra Sincrotrone Trieste. He has further deepened the spectroscopic investigation of condensed matter by experiments performed in Large Scale Facilities (ESRF, ILL, Elettra; over 30 accepted proposals for more than 20 weeks of time machine) and through collaboration with a number of national and international research groups.

Funded Research Projects (since 2000):
- 2000 PRIN *Vibrations and relaxations in condensed disordered systems. Experimental, theoretical and numerical study*, Local Coordinator.
- 2001 INFM PAIS *Aging, off equilibrium dynamics and generalized fluctuation-dissipation theorem in structural glasses*. Core Partner.
- 2002 PRIN *Off-equilibrium properties of structural glasses, gels and polymers. An integrated setup for simultaneous dielectric and optical spectroscopy*. Local Coordinator.
- 2002 INFM *PRA-GenFDT Generalization of the Fluctuation-Dissipation Theorem in out-of-equilibrium Systems*, Core Partner.
- 2003 INFM CRS-SOFT *Complex Dynamics in Structured Systems*, Senior Investigator.
- 2005 PRIN *Arrested States in Soft Matter at low packing fraction: gelation in stepwise macromolecular systems*. Local Coordinator.
- 2009 THYSSENKRUPP-AST, Convention for Applied Research, P.I.
- 2012 Fondazione-CRP *Frontiers in Water Biophysics*.
- 2014 Fondazione-CRP *Nanomateriali e materiali di riciclo per la produzione di cementi ecosostenibili*, Co-Investigator.
- 2015 EPSRC First Grant EP/M028739/1, 2015-2017, *A New Platform for Biomechanical Imaging Based on Brillouin Scattering*, Co-investigator.
- 2017 Cancer Research UK – Application C61025/A24341 *Detecting the pathology specific chemo-mechanics of epithelial tissue in dysplastic Barrett's oesophagus using light scattering*, Co-investigator.
- 2017 COST Action *Brillouin Light Scattering Microspectroscopy for Biological and Biomedical Research and Application*, (BioBrillouin) CA16124, Secondary Proposer and Core Group component.

Contributions to the Community:
2004–2009 Co-founder, and member of the Governing Council of the Centre for Research and Development CNR-INFM SOFT.
2005–2010 Member of the Management Board of the University of Perugia.
2010–present Member of the Governing Council of CEMIN (Centre of Excellence on Innovative Nanostructured Materials for Physical, Chemical and Biomedical Applications).

2014–present Coordinator of the PhD Course on Biotechnology of the University of Perugia.
2016–present Vice-Director of the Department of Physics and Geology of the University of Perugia
2018–present Member of the National Committee ASN (Abilitazione Scientifica Nazionale) for the competition sector 02/B1 – Experimental Physics of Matter.
He served in different international scientific panels. Among these, the Beamline Review Panel of the Electrosynchrotron ESRF and, from 2008, the Proposal Review Panel of Elettra, Trieste.
He participated in scientific and organizing committees of many conferences and schools. Recently: Chair of 2nd BioBrillouin Meeting, Perugia 12-14 September 2018; Chair of the "Winter School on Biotechnology", Perugia, January 2015-2016-2017-2018; Scientific Committee of "Confronti sulla bioetica" Università di Perugia, 3-4 dicembre 2015, Director of the school "Frontiers in Water Biophysics 2015", Erice, September 2015; member of the organizing committee of the "International Soft Matter Conference", Rome, September 2013.
He serves as referee for several international scientific journals, including Nature, Physical Review Letters, Physical Review B, Physical Review X, Journal of Chemical Physics, Journal of Physical Chemistry, Journal of Optics, Polymer, European Polymer Journal, etc.

Teaching activity:
Engineering, Physics, and Biotechnology undergraduate and graduate programs: General Physics, Physics of Matter, Laboratory of Physics, Elements of Molecular Biophysics, and Spectroscopy courses.

Outreach and Dissemination:
- *Biotechnologie e Società* Perugia, Sala Podiani e Sala dei Notari, January 2015-2016-2017-2018-2019.
- *La Creazione della Materia* Seminar, Centro S. Martino, Perugia, November 16, 2012.
- *E infine uscimmo a riveder le stelle: Dante Alighieri e la scienza moderna*, series of conferences for high school students, Perugia 2008-2010.
- *Introduction to University*, seminar for Freshmen, University of Perugia, October 18, 2008.
- *Università: educare alla ragione o inseguire una riforma?* seminar at the Faculty of Political Science, Perugia March 8, 2007.

Membership
He is member of the European Physical Society (EPS), of the Società Italiana di Fisica (SIF).

Invited presentations (since 2014):
- *Brillouin-Raman micro-spectroscopy for bioimaging of cells and tissues*, 1-4 July 2019, Microscience Microscopy Congress (MMC2019), Mancester.
- *Micro-Brillouin and Micro-Raman correlative studies for viscoelasic and structural characterization of cells and tissues*, 14-17 April 2019, Focus on Microscopy (FOM 2019), London.
- *Viscoelastic properties of tissues probed by Brillouin Light Scattering*, 4-8 February 2019, XIII International School of Pure and Applied Biophysics, SIBPA, Venice, Italy.
- *Brillouin Microscopy: Emerging Tool for Probing Mechanical Properties of Living Cells*, 17- 19 January 2018, EMBL Heidelberg, Germany
- *Brillouin-Raman micro-specroscopy*, 1st Bio-Brillouin Meeting, 13-15 September 2017, Vienna - Austria.
- *Simultaneous Brillouin-Raman micro-spectroscopy*, International Discussion Meeting on Relaxation in Complex Systems IDMRCS 2017, Wisła (Poland).
- *A new setup for Brillouin and Raman spectroscopy* Physics Department of the University of Pisa, 11 December 2015.
- *Multi-Scale Dynamics in Water-Carbohydrates Solutions Revealed by Extended Depolarized Light Scattering* Roma Tre Workshop on Water under Extreme Conditions, 10-12 June 2015.
- *More is different: the effect of biomolecules on the dynamics of hydration water University of Exeter*, Department of Physics and Astronomy, Colloquia, 07 November 2014.
- *Mechanical mapping of bio and pharma samples by surface scanning mico-Brillouin* Department of Physics, University of Poznan, 23 gennaio 2014.

Publications:
Over 180 referred articles in leading peer-reviewed international journals, H-index 36 ISI
http://scholar.google.it/citations?user=Usv6mH4AAAAJ&hl=it&oi=ao