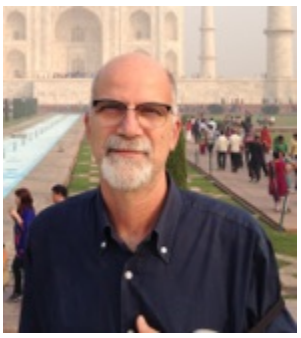
TECHNISCHE UNIVERSITÄT DRESDEN

cfaed CENTER FOR ADVANCING ELECTRONICS DRESDEN

cfaed Seminar Series

DATE: 13 July 2015
TIME: 16:00-17:00
LOC: TU Dresden, Hempel-Building,
Seminar Room HEM 219 Mommsenstr. 4, 01069 Dresden



GUEST SPEAKERS:
Prof. Maurizio Prato (Università degli Studi di Trieste, Italy)

TITLE: ***"Synergies between chemistry and nanotechnology: applications to neurosciences and energy"***

Abstract:
Nanometer-scale structures represent a novel and intriguing field, where scientists and engineers manipulate materials at the atomic and molecular level to produce innovative materials for making composites and for electronic, sensing, and biomedical applications. Carbon nanomaterials, such as carbon nanotubes, carbon dots and graphene, constitute a relatively young class of materials exhibiting exceptional mechanical and electronic properties, and are also promising candidates for gas storage and drug delivery.
Processing of these novel building blocks is severely limited by a number of inherent problems: purification from a variety of impurities, difficult manipulation and low solubility in standard solvents are only some of these problems. For these reasons, several strategies have been devised to make carbon nanostructures "easier" materials. In particular, chemistry plays a fundamental role, since it leads to functionalized carbon nanostructures, which are much more easily processible and offer the possibility of introducing the desired functions, useful for practical applications.
During this talk, we will show the role that Chemistry can play in nanotechnological applications. In particular, we will discuss how with carbon nanotubes are ideal materials for integration with neuronal tissues. Nanotubes are compatible with neurons, but especially they play a very interesting role in interneuron communication, opening possibilities towards applications in spinal cord repair therapy.
In addition, in combination with catalysts of different nature, carbon nanotube modified surfaces can serve for many scopes. Experiments aiming at the splitting of water to give oxygen, and therefore, molecular hydrogen, ideal for clean energy generation, will be described.

Biography
Has published more than 500 papers on international peer reviewed Journals, with a total of around 40,000 citations and an h-index of 98 (google scholar) or 91 (web of science). Has been invited to more than 200 conferences and workshops in the last 10-15 years as a plenary or keynote speaker, and has given more than 50 conferences in universities or research centers all around the world.

PROFESSIONAL CAREER

1978-82	*Laurea degree, University of Padova, Department of Organic Chemistry*
1983-92	*Assistant professor, University of Padova*
1986-87	*Postdoctoral fellow: Yale University, New Haven, USA, Chemistry Department*
1991-92	*Visiting scientist, University of California, Santa Barbara, USA, Institute for*

Polymers and Organic Solids

1992-2000	*Associate professor, University of Trieste*
2000-	*Full professor, University of Trieste*
2001	*Visiting professor, Ecole Normale Superieure, Paris, France*
2008	*Recipient of the ERC Advanced Research Grant, European Research Council*
2010-	*Member, Accademia Nazionale dei Lincei*
2010	*Visiting Professor, Université de Namur, Belgium*
2013-	*Honorary Professorship, Xi'an Jiaotong University, Xi'an, China*
2013-	*Member, European Academy of Sciences*
2014	*Visiting Professor, Université de Strasbourg, France*
2014	*Laurea Honoris Causa in Science and Technology of Materials, University of Roma Tor Vergata*

EDITORIAL ACTIVITY

Member of the International Advisory Board of the following Journals published by the Royal Society of Chemistry (UK):
Chemical Communications, 1997-
Journal of Materials Chemistry, 1994-2002
Chairman of the Editorial Board, Journal of Materials Chemistry, 2003-2006
Member of the International Advisory Board of the European Journal of Organic Chemistry, 2010-
Member of the Editorial Board of "NANO", World Scientific Publisher, Singapore, 2006-2012
Member of the Editorial Board of "Fullerenes, Nanotubes, and Carbon Nanostructures" Taylor & Francis, Inc., Philadelphia, USA, 2005-
Associate Editor, Frontiers in Neuroengineering, Frontiers Research Foundation, Lausanne, Switzerland, 2008-
Member of the International Advisory Board of Chemical Physics Letters, 2009-
Member of the International Advisory Board of ACS Nano, 2014-

AWARDS

Federchimica Prize, Association of the Italian Chemical Industries (1995)
National Prize for Research, Italian Chemical Society (2002)
Ciamician-Gonzalez Prize, Spanish Royal Society of Chemistry (2008)
Nominee for the Descartes Prize for Excellence in Scientific Collaboration (2006), European Commission
Recipient of the ERC Advanced Grant (2008), European Research Council
Mangini Gold Medal, Italian Chemical Society (2009)
Ree-Natta Lectureship, Korean Chemical Society (2010)
Member of Accademia Nazionale dei Lincei (National Academy of Sciences of Italy)
EuCheMS Lecture Award (2013)
Blaise Pascal Medal, European Academy of Sciences (2013)
Natta Gold Medal, Italian Chemical Society (2014)
European Carbon Association Award (2015)