Gerardo Palazzo is Associate Professor in Physical-Chemistry at the University of Bari. Since 1991 his teaching topics have been in the field of biological soft matter. He is appointed of courses of "physical chemistry" and "colloids and interfaces" for both the Degree Course in Chemistry and Material Sciences of the university of Bari. Currently he is the President of the degree courses (BS+MS) i--n Chemistry (since 29-11-2010) and Deputy- Director of the Department of Chemistry (since 18-10-2013) of the University of Bari.

He has been coordinator of several research projects of the Bari University and of the Consorzio per lo Sviluppo dei Sistemi a Grande Interfase (CSGI-Florence). He was the group leader of the Bari Research Unit in the National Reasearch Projects PRIN2003, PRIN2005, PRIN2008, PRIN2010. He has published more than 130 papers in international peer reviewed journals and books (for a list his ISI papers see http://www.researcherid.com/rid/G-9030-2011 and also http://scholar.google.com/citations?user=yI1qSjYAAAAJ) .

His main research activities deal with the characterization of membrane and complex fluids by means of physicochemical techniques, the biophysics of proteins and the development of novel biosensors.

Date of Birth March 10th, 1964

Nationality Italian

Education 1988 *Laurea* Degree (BS+MS) in *Chemistry* from the University of Bari

2004 Ph.D. in *Applied Biochemistry and Chemistry* from the University of Molise

Research areas -Phospholipids and surfactant self-assembly. -Structure and dynamics of membrane proteins. -Membrane mimetic systems. -Molecular diffusion. –biological membranes. -shear induced structures. –rheology of microemulsions. –biosensors

Professional Experience

1989-1990	invited scientist at Institut für Polymere - Swiss Federal Institute of Technology (ETH) of Zürich
1991-2005	Assistant professor of Physical Chemistry at the University of Bari
1996-2001	Short-term guest at the Department Physical-Chemistry 1- Lund University-Sweden
2003-2005	Group leader of the Bari research unit of a PRIN03 project financed by the Italian Research Ministry
2002-2005	member of the board of the Faculty of Science, University of Bari
2005-present	Associate professor of Physical Chemistry at the University of Bari
2005-2007	Group leader of the Bari research unit of a PRIN05 project financed by the Italian Research Ministry
2008-present	member of the Chemistry of Advanced Materials Ph.D. Council, University of Bari.
2010-2012	Group leader of the Bari research unit of a PRIN08 project financed by the Italian Research Ministry
2010-2015	President of the degree courses (BS+MS) in Chemistry, University of Bari
2012-present	Member of the Physical Chemistry Division Council of the Italian Chemical Society
2012-present	Group leader of the Bari research unit of a PRIN2010 project financed by the Italian Research Ministry
2013-present	Unit Coordinator (Bari) of the center for colloid and surface science CSGI http://www.csgi.unifi.it/index.php?option=com_jresearch&view=team&id=9&task=show#menu
2013-present	deputy Director of the Department of Chemistry, University of Bari
29-01-2014	Qualification as Full-Professor of Physical Chemistry (Abilitazione Scientifica Nazionale per PO in SC 03/A2, SSD CHIM/02)

Major Scientific contributions

- first demonstration that metallic nanoparticles synthesized through laser ablation are stabilized by an excess of electrons. (*J. Colloid Interface Sci*. **2016** DOI: 10.1016/j.jcis.2016.09.017)

- first demonstration that detection at high ionic strength in electrolyte-gated OFET sensors is due to the capacitance of Donnan's layer. (*Adv. Mater*. **2015**, 27, 911-916. DOI: 10.1002/adma.201403541)

-for the first time it was demonstrated that the response of sensitive water gated OFET sensors relies on subtle changes of capacitance (*Nat. Commun*. **2015**, 6, 6010 doi: 10.1038/ncomms7010)

- For the first time biological structures have been integrated into an organic thin film transistor preserving both biological functionality and exceptional electronic performances. The streptavidin-containing device allows label-free biotin electronic detection at 10 part-per-trillion concentration level (*Proc. Natl. Acad. Sci. USA* **2012,** 109, 6429–6434. Corresponding author; Biosensors Bioelectronics 2012. DOI: 10.1016/j.bios.2012.07.068 Corresponding author)

- for the first time, an experimental correlation between rheological properties and the presence of branches in solution of wormlike micelles has been demonstrated. *Soft Matter* **2012**, 8, 10941-10949 Corresponding author.

- Optical biosensors based on proteins immobilized in polyelectrolyte multilayers (*J. Phys.Chem. B* **2007,** *111,* 3304-3314 Corresponding author; *Biosensors Bioelectronics* **2010,** *25*, 2033-2037; *Sensors Actuators B* **2012**, 163, 69-75)

- - room temperature ionic liquids tune the spontaneous curvature of AOT films (*J. Phys. Chem. B* **2009**, *113*, 9216-9225. *Phys. Chem. Chem. Phys*. **2011**, *13*, 9238-9245)

- The role of protein dynamics in the electron transfer was studied at room temperature in photosynthetic proteins by incorporating the protein in sugar glasses (*Biophys. J.*, **2002**, 82, 558-568 Corresponding author; *Biophys. J.* **2003**, *85*, 2760-2775; *BBA-Bioenergetics* **2004**, 1658, 50-57; *J. Am. Chem. Soc.* **2008**, *130*, 10240-10246; *J. Am. Chem. Soc.* **2008**, 130, 9353-9363. Corresponding author)

- combination of PGSE-NMR and SAXS allow the complete characterization of the micelles in multicomponents systems (*Langmuir* **2005***, 21:* 6717-6725 Corresponding author. *J. Phys.Chem. B* **2007***, 111,* 7184-7193 Corresponding author).

- the formation supercomplexes among proteic complexes (viz. reaction center and light-harvesting complex I) in photosynthetic membranes increases the efficiency of light induced electron transfer (*Biochemistry* **2004**, *43*, 14199-14210)

- quantitative evaluation of the effect of cosurfactant on the microstructure of reverse micelles (*J. Phys. Chem.* **1996**, *100*, 3190-3198; *J. Phys. Chem. B* **2003** *107,* 1924-1931; *Phys. Chem. Chem. Phys*. **2004**, *6*, 1423-1429; *Colloid Surface A* **2004**, 237, 49-59); Corresponding author of all the papers.

- first experimental report on liquid-liquid phase separation of a surfactant-solubilized membrane protein (*Phys. Rev. Letters,* 2003*, 90,* article n. 208101.).

- structure, dynamics and phase behaviour of phospholipid/water/oil systems (*J. Phys. Chem. B* **1998**, *102*, 2883-2889 Corresponding author; Langmuir, **1999**, 15, 1679 1684 Corresponding author; *Langmuir* **2000**, 16, 2124-2132 TC 42; ; *Langmuir* **2004**, 20, 619-631 Corresponding author; *Langmuir* **2005**, 21, 140-148 Corresponding author).

- first experimental measurements of surfactant curvilinear diffusion in giant wormlike micelles (*Phys. Rev. Letters* **1998**, *81*, 2823-2826.)

- the dynamics of shear-induced ordering and of the subsequent relaxation was studied on wormlike reverse micelles: First time resolved SANS study on the relaxation (*J. Phys. Chem. B* **2002***,* 106, 2426-2428). First time-resolved deuterium NMR study (*J. Phys. Chem. B* 2003, *107*, 10325-10328). ordering oscillation under shear experimentally observed for the first time (*Phys. Chem. Chem. Phys.,* **2010***,12*, 8856-8862). detailed rheological analysis *Soft Matter* **2010**, *6*, 1769 – 1777).

- intraproteins electron transfer kinetics can be described as a cumulant expansion giving easily meaningful kinetic parameters (*Biophys. J.*, **2000**, 79, 1171-1179 Corresponding author)**..**

Professional Activities

Consultant of the Company ITALFARMACO for drug-delivery issues

Consultant of the Company Unilever (R&D Port Sunlight) for personal care formulations

Expert independent reviewer for the Italian Research Ministry (PRIN and FIRB projects).

Regularly serves as a referee for a number of international journals, including JACS, Langmuir, Soft Matter, PCCP, JPC.

Teaching

His teaching activity was addressed to the students of the BS in Chemistry, Materials Science and (in the past) Biotechnology and to the Chemistry MS students.

Courses

1996/97 "Chemical kinetics" five-years (BS+MS) degree in Chemistry
1997/98 "Chemical kinetics and molecular dynamics" five-years (BS+MS) degree in Chemistry
1998-2005 "Physical chemistry of colloids and interfaces" five-years (BS+MS) degree in Chemistry
2000-02 "Laboratory of Physical chemistry III" five-years (BS+MS) degree in Chemistry
2002-05 "Physical chemistry III" five-years (BS+MS) degree in Chemistry
2003-2010 "Laboratory of Biophysical Chemistry" BS in Chemistry
2004-06 "Physical chemistry of Biotechnological Processes " BS in Biotechnology
2006-08 "Colloids in Technology" BS in Material Science
2008-present "Colloids & Interfaces" BS in Material Science
2009-present "Physical Chemistry of Materials and Surfaces" MS in Chemistry
2010-present "Physical Chemistry 1" BS in Chemistry

Memberships: Società Chimica Italiana, European Colloids & Interfaces Society

Funding ID

H2020-MSCA-ITN-2016 project 722871"BIOfilm management and CLEANing by leveraging fundamental understanding of biological, chemical and physical combined approaches" –Bioclean- (role WP leader).

Italian MIUR ministry PRIN 2010-2011 Project 2010BJ23MN "Nanostructured Soft Matter : from Fundamental Research to Novel Applications" (role Principal Investigator of the University of Bari research unit)

FP7 – PEOPLE – 2012 – ITN. "OFET biosensors for point-of-care applications" – Sense-of-care – (role Investigator)

FP7 - ICT-2009-3.3-Flexible, Organic and Large Area Electronics: "Electrolyte-GatedOrganic Field-Effect Biosensor – BioEGOFET –(role: Investigator)

Italian MIUR ministry PRIN 08 Project 2008ZWHZJT "Structure-Dynamics-Function of Biomolecules in Systems Far from Thermodynamic Ideality" (role Group Leader of the University of Bari research unit)

2007-2009 Consorzio Interuniversitario per lo Sviluppo dei Sistemi a Grande Interfase (CSGI) Consultancy Research Contract on personal care formulations (role Principal Investigator)

Italian MIUR ministry PRIN 05 Project 2005027011 "Dynamical, Structural and Functional Properties of Proteins Embedded in Non-Liquid Systems Containing Residual Water: Coupling with the External Matrix" (role Principal Investigator of the University of Bari research unit)

Italian MIUR ministry PRIN 03 Project 2003022158 "Novel Biosensors Based on Immobilised Neuroreceptors" (role Principal Investigator of the University of Bari research unit)

2002-2004 Consorzio Interuniversitario per lo Sviluppo dei Sistemi a Grande Interfase (CSGI) Consultancy Research Contract on drug delivery formulations (role Principal Investigator)

2000-2003 University of Bari, yearly research grants (role Coordinator).