

Scientific Curriculum of Prof. Luigi Paduano

Luigi Paduano is full Professor and lecturer of “Physical Chemistry 1” and “Physical Chemistry of Colloids and Surfaces” courses at University of Naples “Federico II”.

Bibliographic (web of science) data:

H-index = 29, 162 publications on peer-reviewed journals, 8 contributions to scientific books, 3 patents.

Member of “Journal of Solution Chemistry” Editorial Board.

Positions:

1986: visiting researcher at Lawrence Livermore National Laboratory (California).

1988: visiting researcher at Lawrence Livermore National Laboratory (California).

1990: PhD in Chemical Sciences.

1992: visiting professor at the Department of Chemistry of Texas Christian University (Texas).

1996: CNR-NATO national Scholarship (call 217.28/03) for performing research at the Texas Christian University (Texas).

1998 and 2000: “Research Associate” at the Department of Chemistry of Texas Christian University (Texas), for performing research funded by NASA.

1992-2001: Researcher at the Department of Chemistry of University of Naples “Federico II”.

2001-2010: Associate professor at the Department of Chemistry of University of Naples “Federico II”.

2003: Visiting scientist at the Rutherford Appleton Laboratory (UK).

2010-Full professor at the Department of Chemistry of University of Naples “Federico II”.

2010- Coordinator of the Ph.D. course of Chemical Sciences at the University of Naples “Federico II”

2012- Deputy Chairman of the Jülich Centre for Neutron Scattering and FRM II Soft Matter Review Committee

2015 visiting professor at the Department of Chemistry of Texas Christian University (Texas)

2016 Vice-Direttore del Dipartimento di Scienze Chimiche, Università degli Studi di Napoli “Federico II”

2016 Componente della Commissione per l'attribuzione dell'Abilitazione Scientifica Nazionale alle funzioni di professore di prima e di seconda fascia nel settore concorsuale 03/A2, Metodologie per le Scienze Chimiche, SSD CHIM02.

2001-present. Periodic and continuative research activity as Principal Investigator, within the European Commission TMR/Large Scale Facilities framework, at several

European facilities: Laboratoire Leon Brillouin (LLB), CEA-CNRS Saclay, Paris (France), Jülich Center for Neutron science (JCNS), Hahn-Meitner Institut - BENSC, Berlin, (Germany), Institute Laue Langevin (ILL), Grenoble (France), ISIS pulsed neutron and muon source (Rutherford Appleton Laboratory, Oxford).

Selected Peer-reviewed Publications

- Acampora, F.; Marzaioli, A. M.; Capuozzo, A.; Appavou, M.-S.; Campanella, A.; D'Errico, G.; Irace, C.; Montesarchio, D.; Musumeci, D.; Szekely, N. K.; Paduano L. Lipooligosaccharides as Amphiphiles to Build Liposomes for Effective Drug Delivery: The Case of Anticancer Ruthenium Complex-Based Aggregates. *ChemistrySelect* (2016), 1(10), 2129-2139.
- Luchini, Alessandra; Heenan, Richard K.; Paduano, Luigi; Vitiello, Giuseppe Functionalized SPIONs: the surfactant nature modulates the self-assembly and cluster formation *Physical Chemistry Chemical Physics* (2016), 18(27), 18441-18449.
- Gravagnuolo, A. M.; Longobardi, S.; Luchini, A.; Appavou, M.-S.; De Stefano, L.; Notomista, E.; Paduano, L.; Giardina, P. Class I Hydrophobin Vmh2 Adopts Atypical Mechanisms to Self-Assemble into Functional Amyloid Fibrils. *Biomacromolecules* 2016, 17, 954-964.
- Luchini, A.; Irace, C.; Santamaria, R.; Montesarchio, D.; Heenan, R. K.; Szekely, N.; Flori, A.; Menichetti, L.; Paduano, L., Phosphocholine-decorated superparamagnetic iron oxide nanoparticles: defining the structure and probing in vivo applications. *Nanoscale* 2016, 8, 10078-10086.
- Vitiello, G.; Luchini, A.; D'Errico, G.; Santamaria, R.; Capuozzo, A.; Irace, C.; Montesarchio, D.; Paduano, L., Cationic liposomes as efficient nanocarriers for the drug delivery of an anticancer cholesterol-based ruthenium complex. *J Mater Chem B* 2015, 3 (15), 3011-3023.
- Vitiello, G.; Falanga, A.; Alcides Petruk, A.; Merlino, A.; Fragneto, G.; Paduano, L.; Galdiero, S.; D'Errico, G., Fusion of raft-like lipid bilayers operated by a membranotropic domain of the HSV-type I glycoprotein gH occurs through a cholesterol-dependent mechanism. *Soft Matter* 2015, 11 (15), 3003-3016.
- Oliva, R.; Del Vecchio, P.; Stellato, M. I.; D'Ursi, A. M.; D'Errico, G.; Paduano, L.; Petraccone, L., A thermodynamic signature of lipid segregation in biomembranes induced by a short peptide derived from glycoprotein gp36 of feline immunodeficiency virus. *Bba-Biomembranes* 2015, 1848 (2), 510-517.
- Luchini, A.; Vitiello, G.; Rossi, F.; De Ballesteros, O. R.; Radulescu, A.; D'Errico, G.; Montesarchio, D.; Fernandez, C. d. J.; Paduano, L., Developing functionalized Fe₃O₄-Au nanoparticles: a physico-chemical insight. *Phys Chem Chem Phys* 2015, 17 (8), 6087-6097.
- Silipo, A.; Vitiello, G.; Gully, D.; Sturiale, L.; Chaintreuil, C.; Fardoux, J.; Gargani, D.; Lee, H.-I.; Kulkarni, G.; Busset, N.; Marchetti, R.; Palmigiano, A.; Moll, H.; Engel, R.; Lanzetta, R.; Paduano, L.; Parrilli, M.; Chang, W.-S.; Holst, O.; Newman, D. K.; Garozzo, D.; D'Errico, G.; Giraud, E.; Molinaro, A., Covalently linked hopanoid-lipid A improves outer-membrane resistance of a *Bradyrhizobium* symbiont of legumes. *Nat Commun* 2014, 5.
- Della Vecchia, N. F.; Cerruti, P.; Gentile, G.; Errico, M. E.; Ambrogio, V.; D'Errico, G.; Longobardi, S.; Napolitano, A.; Paduano, L.; Carfagna, C.; d'Ischia, M., Artificial

Biomelanin: Highly Light-Absorbing Nano-Sized Eumelanin by Biomimetic Synthesis in Chicken Egg White. *Biomacromolecules* 2014, 15 (10), 3811-3816.

- Mangiapia, G.; Vitiello, G.; Irace, C.; Santamaria, R.; Colonna, A.; Angelico, R.; Radulescu, A.; D'Errico, G.; Montesarchio, D.; Paduano, L., Anticancer Cationic Ruthenium Nanovectors: From Rational Molecular Design to Cellular Uptake and Bioactivity. *Biomacromolecules* 2013, 14 (8), 2549-2560.
- Simeone, L.; Mangiapia, G.; Vitiello, G.; Irace, C.; Colonna, A.; Ortona, O.; Montesarchio, D.; Paduano, L., Cholesterol-Based Nucleolipid-Ruthenium Complex Stabilized by Lipid Aggregates for Antineoplastic Therapy. *Bioconjugate Chem* 2012, 23 (4), 758-770.
- Merlino, A.; Vitiello, G.; Grimaldi, M.; Sica, F.; Busi, E.; Basosi, R.; D'Ursi, A. M.; Fragneto, G.; Paduano, L.; D'Errico, G., Destabilization of Lipid Membranes by a Peptide Derived from Glycoprotein gp36 of Feline Immunodeficiency Virus: A Combined Molecular Dynamics/Experimental Study. *J Phys Chem B* 2012, 116 (1), 401-412;
- Mangiapia, G.; D'Errico, G.; Simeone, L.; Irace, C.; Radulescu, A.; Di Pascale, A.; Colonna, A.; Montesarchio, D.; Paduano, L., Ruthenium-based complex nanocarriers for cancer therapy. *Biomaterials* 2012, 33 (14), 3770-3782;
- Arzillo, M.; Mangiapia, G.; Pezzella, A.; Heenan, R. K.; Radulescu, A.; Paduano, L.; d'Ischia, M., Eumelanin Buildup on the Nanoscale: Aggregate Growth/Assembly and Visible Absorption Development in Biomimetic 5,6-Dihydroxyindole Polymerization. *Biomacromolecules* 2012, 13 (8), 2379-2390;
- Mangiapia, G.; Vaccaro, M.; D'Errico, G.; Frielinghaus, H.; Radulescu, A.; Pipich, V.; Carnerup, A. M.; Paduano, L., Cubosomes for ruthenium complex delivery: formulation and characterization. *Soft Matter* 2011, 7 (22), 10577-10580;
- Vaccaro, M.; Mangiapia, G.; Radulescu, A.; Schillen, K.; D'Errico, G.; Morelli, G.; Paduano, L., Colloidal particles composed of amphiphilic molecules binding gadolinium complexes and peptides as tumor-specific contrast agents in MRI: physico-chemical characterization. *Soft Matter* 2009, 5 (13), 2504-2512;
- Vaccaro, M.; Del Litto, R.; Mangiapia, G.; Carnerup, A. M.; D'Errico, G.; Ruffo, F.; Paduano, L., Lipid based nanovectors containing ruthenium complexes: a potential route in cancer therapy. *Chem Commun* 2009, (11), 1404-1406;
- Vaccaro, M.; Accardo, A.; D'Errico, G.; Schillen, K.; Radulescu, A.; Tesauro, D.; Morelli, G.; Paduano, L., Peptides and gd complexes containing colloidal assemblies as tumor-specific contrast agents in MRI: Physicochemical characterization. *Biophys J* 2007, 93 (5), 1736-1746;
- Vergara, A.; Capuano, F.; Paduano, L.; Sartorio, R., Lysozyme mutual diffusion in solutions crowded by poly(ethylene glycol). *Macromolecules* 2006, 39 (13), 4500-4506.
- Vaccaro, M.; Accardo, A.; Tesauro, D.; Mangiapia, G.; Lof, D.; Schillen, K.; Soderman, O.; Morelli, G.; Paduano, L., Supramolecular aggregates of amphiphilic gadolinium complexes as blood pool MRI/MRA contrast agents: Physicochemical characterization. *Langmuir* 2006, 22 (15), 6635-6643;

- Ricciardi, R.; Mangiapia, G.; Lo Celso, F.; Paduano, L.; Triolo, R.; Auriemma, F.; De Rosa, C.; Laupretre, F., Structural organization of poly(vinyl alcohol) hydrogels obtained by freezing and thawing techniques: A SANS study. *Chemistry of Materials* 2005, 17 (5), 1183-1189.
- Accardo, A.; Tesauro, D.; Roscigno, P.; Gianolio, E.; Paduano, L.; D'Errico, G.; Pedone, C.; Morelli, G., Physicochemical properties of mixed micellar aggregates containing CCK peptides and Gd complexes designed as tumor specific contrast agents in MRI. *J Am Chem Soc* 2004, 126 (10), 3097-3107.
- Albright, J. G.; Annunziata, O.; Miller, D. G.; Paduano, L.; Pearlstein, A. J., Precision measurements of binary and multicomponent diffusion coefficients in protein solutions relevant to crystal growth: Lysozyme chloride in water and aqueous NaCl at pH 4.5 and 25 degrees C-perpendicular to. *J Am Chem Soc* 1999, 121 (14), 3256-3266.