

GIULIA FIORAVANTI



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Nationality

Italian

Languages

Italian (native speaker),
English (fluent),
French, Spanish (basic)

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<https://scholar.google.it/citations?user=WmB10DMAAAJ&hl=it&oi=ao>

PROFESSIONAL EXPERIENCE

Permanent position as **Researcher**, at the University of L'Aquila, in the Department of Physical and Chemical Science (from December 2008).

Training Course on Nanotechnologies for Industrial Packaging under the Project DISTEF (Project of Italian M.U.R.) (2008).

Postdoctoral Fellow in Organic functionalization of carbon nanotubes for the realization of nanostructured materials (Univ. of Bologna, Dept. Chemistry, supervisor: Prof. F. Paolucci); (2007).

Research project on Synthesis of ligands containing alpha- and beta-amino acids and development of new catalytic methods for the Reformatsky reaction (Project LIGBANK, Univ. Of Bologna, Dept. Chemistry, supervisor: Prof. P. G. Cozzi) (2006).

Training in organic synthesis in the laboratory of Prof. D. A. Leigh, School of Chemistry, Edinburgh, Scotland (UK) (2005).

Postdoctoral Fellow in Molecular and supramolecular electrochemistry and materials chemistry (Univ. of Bologna, Dept. Chemistry, supervisor: Prof. F. Paolucci) (2003-2006).

EDUCATION

PhD in Engineering of Materials, at the Faculty of Engineering, Dept. ICMMPM, University of Rome, Supervisor: Prof. L. Rampazzo) (2003).

Teaching qualification in "Chemistry and Chemical Technologies" for High School (2001).

Qualification for the profession of Chemist (Level in national classification 100/100) (1999).

Master's degree in Chemistry (Summa cum laude) at the Faculty of Chemistry, University of Rome "La Sapienza", (Supervisor: Prof. R. M. Bettolo) (1998)

TEACHING EXPERIENCE

University of L'Aquila, Course of "Fundamentals of Chemistry" for Techniques of Civil Protection and Territory Security (2020 - present).

University of L'Aquila, Course of "Chemistry of Surfaces and Interfaces" for Chemists and Chemical Engineering (2013 - present).

University of L'Aquila, Course of "Inorganic Chemistry" for Engineering (2008 - 2012).

RESEARCH INTERESTS

Preparation of graphene oxide (GO) based materials for applications in:

- Gas sensing
- Magnetic Resonance Imaging (MRI)
- Pesticide adsorption
- Tissue engineering (properties of adhesion, growth and cell differentiation)
- Inks for 3D printers

Characterization of materials by: Scanning Electron Microscopy (SEM), Energy-dispersive Spectroscopy (EDX), X-ray photoelectron spectroscopy (XPS), UV-Vis spectroscopy, Infrared Spectroscopy (FT-IR), Raman spectroscopy and Diffraction at X-ray (XRD).

FUNDING GRANTS

- "SMART TOW WINDING" – "Nuove soluzioni ad elevata automazione per l'impregnazione e avvolgimento di Tow"
From 2020 to 2023-12; MIUR - Ministero dell'Istruzione, dell'Università e della Ricerca (Roma); GRANT_NUMBER: ARS01_00871
- "GO PAINT" - Progetto POR FERS Abruzzo 2014-2020 "Studio di soluzioni innovative di prodotto e di processo basate sull'utilizzo industriale dei materiali avanzati"
From 2017-02 to 2020-08°; Regione Abruzzo (L'Aquila); GRANT_NUMBER: CUP C17H18000100007; URL: <https://www.goinnovation.it/>
- Contributo Carispaq - Carispaq (L'Aquila)
From 2014-01 to 2014-12; GRANT_NUMBER: 2013
- "CHIMICA IN MOTO" (CHEMISTRY WITHOUT VESSELS) PRIN MIUR - Ministry of Education, Universities and Research (Rome)
From 2009-01-01 to 2011-01-01; GRANT_NUMBER: 2009N9N8RX; URL: <https://app.dimensions.ai/details/grant/grant.6859873>

SCIENTIFIC PARTICIPATION IN NATIONAL/INTERNATIONAL RESEARCH PROJECTS

- PRIN 2009: "Chemistry without vessels" - head of unit for the University of L'Aquila
- 2008 – participant to the Training Course on Nanotechnologies for Industrial Packaging - DISTEF Dispositivi Integrati per registrare la Storia Termica del Farmaco
- 2006 - participant to FP6-NMP Ligbank
- 2004-2005 participant to FP5 - EMMMA - Exploiting mechanical motion of molecular architectures
- 1998-2006 - participant to national research projects PRIN

PUBLICATIONS

Foschi, M., Capasso, P., Maggi, M.A., Ruggieri, F., Fioravanti, G.
Experimental design and response surface methodology applied to graphene oxide reduction for adsorption of triazine herbicides
(2021) ACS Omega, 6 (26), pp. 16943-16954
DOI: 10.1021/acsomega.1c01877

De Thomasis, G., Perrozzi, F., Fioravanti, G., Galante, A., Alecci, M., Ottaviano, L., Profeta, G.
Spin-lattice relaxation time in water/graphene-oxide dispersion
(2021) (submitted)

Pusceddu, E., Santilli, S.F., Fioravanti, G., Montanaro, A., Miglietta, F., Foscolo, P.U.
Chemical-physical analysis and exfoliation of biochar-carbon matter: From agriculture soil improver to starting material for advanced nanotechnologies
(2019) Materials Research Express, 6 (11), art. no. 115612.
DOI: 10.1088/2053-1591/ab4ba8

Iacoboni, I., Perrozzi, F., Macera, L., Taglieri, G., Ottaviano, L., Fioravanti, G.
In situ syntheses of hydroxyapatite-grafted graphene oxide composites
(2019) Journal of Biomedical Materials Research - Part A, 107 (9), pp. 2026-2039.
DOI: 10.1002/jbm.a.36716

Catanesi, M., Panella, G., Benedetti, E., Fioravanti, G., Perrozzi, F., Ottaviano, L., Di Leandro, L., Ardini, M., Giansanti, F., D'Angelo, M., Castelli, V., Angelucci, F., Ippoliti, R., Cimini, A.
YAP/TAZ mechano-transduction as the underlying mechanism of neuronal differentiation induced by reduced graphene oxide
(2018) Nanomedicine, 13 (24), pp. 3091-3106.
DOI: 10.2217/nmm-2018-0269

Solis Moré, Y., Panella, G., Fioravanti, G., Perrozzi, F., Passacantando, M., Giansanti, F., Ardini, M., Ottaviano, L., Cimini, A., Peniche, C., Ippoliti, R.
Biocompatibility of composites based on chitosan, apatite, and graphene oxide for tissue applications
(2018) Journal of Biomedical Materials Research - Part A, 106 (6), pp. 1585-1594.
DOI: 10.1002/jbm.a.36361

Strzelczyk, R., Giusca, C.E., Perrozzi, F., Fioravanti, G., Ottaviano, L., Kazakova, O.
Role of substrate on interaction of water molecules with graphene oxide and reduced graphene oxide
(2017) Carbon, 122, pp. 168-175.
DOI: 10.1016/j.carbon.2017.06.035

Fiorani, A., Rapino, S., Fioravanti, G., Valenti, G., Marcaccio, M., Paolucci, F.
Local desorption of thiols by scanning electrochemical microscopy: patterning and tuning the reactivity of self-assembled monolayers
(2016) Journal of Solid State Electrochemistry, 20 (4), pp. 1037-1042.
DOI: 10.1007/s10008-015-3020-7

Donarelli, M., Ottaviano, L., Giancaterini, L., Fioravanti, G., Perrozzi, F., Cantalini, C.
Exfoliated black phosphorus gas sensing properties at room temperature
(2016) 2D Materials, 3 (2), art. no. 025002.
DOI: 10.1088/2053-1583/3/2/025002

Fioravanti, G., Lugli, F., Gentili, D., Mucciante, V., Leonardi, F., Pasquali, L., Liscio, A., Murgia, M., Zerbetto, F., Cavallini, M.

Electrochemical fabrication of surface chemical gradients in thiol self-assembled monolayers with tailored work-functions

(2014) *Langmuir*, 30 (39), pp. 11591-11598.

DOI: 10.1021/la5013928

Perrozzi, F., Croce, S., Treossi, E., Palermo, V., Santucci, S., Fioravanti, G., Ottaviano, L.

Reduction dependent wetting properties of graphene oxide

(2014) *Carbon*, 77, pp. 473-480.

DOI: 10.1016/j.carbon.2014.05.052

Lugli, F., Fioravanti, G., Pattini, D., Pasquali, L., Montecchi, M., Gentili, D., Murgia, M., Hemmatian, Z., Cavallini, M., Zerbetto, F.

And yet it moves! Microfluidics without channels and troughs

(2013) *Advanced Functional Materials*, 23 (44), pp. 5543-5549.

DOI: 10.1002/adfm.201300913

Baggerman, J., Haraszkiwicz, N., Wiering, P.G., Fioravanti, G., Marcaccio, M., Paolucci, F., Kay, E.R., Leigh, D.A., Brouwer, A.M.

Induction of motion in a synthetic molecular machine: Effect of tuning the driving force

(2013) *Chemistry - A European Journal*, 19 (18), pp. 5566-5577.

DOI: 10.1002/chem.201204016

Fioravanti, G.

Benzylic amide Rotaxanes: A versatile architecture

(2012) *Current Organic Synthesis*, 9 (2), pp. 199-214.

DOI: 10.2174/157017912799828996

Fioravanti, G., Haraszkiwicz, N., Kay, E.R., Mendoza, S.M., Bruno, C., Marcaccio, M., Wiering, P.G., Paolucci, F., Rudolf, P., Brouwer, A.M., Leigh, D.A.

Three state redox-active molecular shuttle that switches in solution and on a surface

(2008) *Journal of the American Chemical Society*, 130 (8), pp. 2593-2601.

DOI: 10.1021/ja077223a

Mateo-Alonso, A., Fioravanti, G., Marcaccio, M., Paolucci, F., Rahman, G.M.A., Ehli, C., Guldi, D.M., Prato, M.

An electrochemically driven molecular shuttle controlled and monitored by C60

(2007) *Chemical Communications*, (19), pp. 1945-1947.

DOI: 10.1039/b618504e

Mateo-Alonso, A., Ehli, C., Rahman, G.M.A., Guldi, D.M., Fioravanti, G., Marcaccio, M., Paolucci, F., Prato, M.

Tuning electron transfer through translational motion in molecular shuttles

(2007) *Angewandte Chemie - International Edition*, 46 (19), pp. 3521-3525.

DOI: 10.1002/anie.200605039

Marcaccio, M., Paolucci, F., Fontanesi, C., Fioravanti, G., Zanarini, S.

Electrochemistry and spectroelectrochemistry of polypyridine ligands: A theoretical approach

(2007) *Inorganica Chimica Acta*, 360 (3), pp. 1154-1162.

DOI: 10.1016/j.ica.2006.08.045

Mateo-Alonso, A., Aminur Rahman, G.M., Ehli, C., Guldi, D.M., Fioravanti, G., Marcaccio, M., Paolucci, F., Prato, M.

Photophysical and electrochemical properties of a fullerene-stoppered rotaxane

(2006) *Photochemical and Photobiological Sciences*, 5 (12), pp. 1173-1176.

DOI: 10.1039/b610934a

Mateo-Alonso, A., Fioravanti, G., Marcaccio, M., Paolucci, F., Jagesar, D.C., Brouwer, A.M., Prato, M.

Reverse shuttling in a fullerene-stoppered rotaxane

(2006) *Organic Letters*, 8 (22), pp. 5173-5176.

DOI: 10.1021/ol062277v

Cecchet, F., Fioravanti, G., Marcaccio, M., Margotti, M., Mattiello, L., Paolucci, F., Rapino, S., Rudolf, P.

Electrode surface modification by a spirobifluorene derivative. An XPS and electrochemical investigation

(2005) *Journal of Physical Chemistry B*, 109 (39), pp. 18427-18432.

DOI: 10.1021/jp051786w

Van Kirk, C.C., Fioravanti, G., Mattiello, L., Rampazzo, L.B., Macías-Ruvalcaba, N.A., Evans, D.H. Comparative studies of the reduction of 2-naphthaldehyde, 9,9'-spirobi-(9H-fluorene)-2-carboxaldehyde and 2-fluorene-carboxaldehyde in nonaqueous solvents

(2005) *Journal of Electroanalytical Chemistry*, 582 (1-2), pp. 151-155.

DOI: 10.1016/j.jelechem.2004.10.027

Mattiello, L., Fioravanti, G.

Direct formylation of 9,9'-spirobifluorene: 2-carboxaldehyde-9,9'-spirobifluorene and 2,2'-dicarboxaldehyde-9,9'-spirobifluorene

(2001) *Synthetic Communications*, 31 (17), pp. 2645-2648.

DOI: 10.1081/SCC-100105391

PATENT (Holder)

2006 - Stoessel P., Breuning E., Bagalà Rampazzo L., Fioravanti G., Mattiello L. Covion Organic Semiconductors G.m.b.H., Germany (2006). Oligomeric derivatives of spirobifluorene, their preparation and use. WO2006005627 (A1), MERCK Patent GMBH [DE]

2006 - Stoessel P., Breuning E., Bagalà Rampazzo L., Fioravanti G., Mattiello L. IT (2006). Organic electroluminescent device. WO2006005626 (A2), MERCK Patent GMBH [DE]

2005 – Paolucci F., Marcaccio M., Bruno C., Paolucci D., Fioravanti G., Zonarini S. “Composto Polimerico Semiconduttore A Base Fullerenica, Processo Per La Sua Preparazione E Suoi Usi.” MI2005A000197

2004 - Bagalà Rampazzo L., Mattiello L., Fioravanti G. (2004). Spirobifluorene oligomerization derivative, its preparation and application. WO2006005627 (A1), MERCK PATENT GMBH [DE]

2004 - Bagalà Rampazzo L., Fioravanti G., Mattiello L. (2004). Spirobifluorene derivatives, their preparation and uses thereof. WO 2004013080

MEETINGS (ORAL)

“Reduced graphene oxide for triazine herbicides adsorption: experimental design and response surface methodology.” (2021) NewTimes-New Trends in Materials Science and Engineering, In Abstract Book 3-10, virtual conference, 14-18/06/2021

“Preparation of Graphene Oxide-Hydroxyapatite nanocomposites using in situ synthesis method.” (2020) MatScience 2020 2nd International Conference on Materials Science & Engineering, virtual conference 05-07/11/2020

“Graphene Oxide: a potential scaffold for promoting cell differentiation.” (2016) NanoInnovation Conference and Exhibitions – Rome (Italy) 20-23/09/2016

“Reduction dependent Wetting properties of Graphene Oxide” (2012) Graphita - A Multidisciplinary and Intersectorial Workshop on Synthesis, Characterization and Technological Exploitation of Graphene CNR Bologna (Italy) 14-18/09/2015

“Wettability gradient on surface by Withdrawing Electrochemical Desorption.” (2012) In Abstract Book GEI-ERA 2012, p. 115, ISBN: 978-88-8080-134-4, Santa Marina Salina, Isole Eolie, Messina (Italy), 17-22/06/2012

“Artificial Molecular Machines: Stimuli Induced Motion from Solution to Surface.” (2009) In: Abstract Book: Joint Conferences on Advanced Materials, 6 th Workshop on Functional and Nanostructured Materials, 10 th Conference on Intermolecular and Magnetic Interactions in Matter. p. 173-175, GDANSK:Jarosław Rybicki, ISBN: 978-83-908112-7-7, Sulmona, (Italy), 27-30/09/2009

“Artificial molecular machines: stimuli induced motion from solution to surface.” (2009) In: VI CONVEGNO NAZIONALE MATERIALI MOLECOLARI AVANZATI PER FOTONICA ED ELETTRONICA. Arbatax, (Italy), 25-27/06/2009

“Rotassani benzilamidici: un sistema versatile per la realizzazione di shuttle molecolari” (2007) Giornate dell’Elettrochimica Italiana ed Elettrochimica per il Recupero dell’Ambiente - GEI-ERA 2007, Cagliari (Italy), 15-20/07/2007

“Rotassani benzilamidici: un sistema versatile per la realizzazione di shuttle molecolari” (2006) 6° Sigma Aldrich Young Chemists Symposium”, SAYCS, Riccione (Italy), 09-11/10/2006.

“Synthesis and characterization of multi-level electrochemically-driven molecular shuttles” (2006) XXII Congresso Nazionale della Società Chimica Italiana - SCI 2006, Firenze (Italy) 10-15/09/2006.

“Electrochemical Shuttles: last episode!”. (2006) Interconsortia Meeting - “Truly the Gist” (Meeting, EMMMA Exploiting mechanical motion of molecular architectures Meeting EU Research Training Network) Villasimius (CA) (Italy), 01-04/06/2006.

“Electrochemistry of carbon nanotubes in solution” (2006) Incontro di Spettroscopia Analitica “Il ruolo della Spettroscopia Analitica nello sviluppo delle Nanotecnologie”, Giovinazzo (Ba) (Italy) 9-12/04/2006.

“Molecular shuttling through reversible electron transfer:latest news!” (2006) EMMMA Exploiting mechanical motion of molecular architectures Meeting EU Research Training Network, Vico Equense (NA) (Italy), 02-05/02/2006.

“New electrochemically-driven molecular shuttle” (2005) 5° Sigma Aldrich Young Chemists Symposium, SAYCS, Riccione (Rimini), (Italy) 10-12/10/2005.

“A multi-level electrochemically-driven molecular shuttle” (2005) Giornate dell'Elettrochimica Italiana - GEI 2005 - Spoleto, (Italy) 11-15/09/2005.

“Electrochemical behaviour of cations of C60, corannulene and their derivatives” (2004) Giornate dell'Elettrochimica Italiana GEI 2004, Padova, (Italy) 5-9/09/2004.

“A multi-level electrochemically-driven molecular shuttle” (2004) European Science Foundation ESF Meeting, Tomar, Portugal 4-9/09/2004.

“A multi-level electrochemically-driven molecular shuttle” (2004) EMMMA Exploiting mechanical motion of molecular architectures Meeting EU Research Training Network, Oegstgeest (Amsterdam), Netherland 25-27/06/2004.

“Modified electrodes with spirobifluorene” (2004) Convegno NanoOrg Parco Scientifico Tecnologico VEGA Venezia - Marghera, (Italy) 1-4/04/2004.

“Recenti sviluppi sulla chimica di derivati dello Spirobifluorene” (2003) XXVIII Corso Estivo “A. Corbella”, Seminari di Chimica Organica, Gargnano (BS), (Italy) 16-20/06/2003.

“Electrochemical synthesis of stereoisomeric 1,2-bis-(2-spirobifluorenyl)-1,2-ethanediols.” (2003) 203th Meeting of the Electrochemical Society, Paris, France, 27 /04-02/05 / 2003.

“Stability and persistency of radical anions of spirobifluorene derivatives.” (2001) 199th Meeting of the Electrochemical Society, Washington D.C., USA, 25-30/03/2001.

MEETINGS (POSTER)

“A Study on Graphene Oxide Properties as Contrast Agent for NMR Imaging” (2016) In: Book of Abstracts Italian National Conference on Materials Science and Technology - Consorzio Nazionale Interuniversitario per le Scienze Fisiche della Materia (CNISM) - Materials.it 2016 Materials Science and Technology, Catania, (Italy) 12-16/12/2016

“Imaging NMR and Graphene Oxide.” (2016). In: Book of Abstracts of the Conference on Nano-Innovation 2D Materials, Materials Science and Technology.

“Graphene Oxide triggers neuronal differentiation by the Hippo pathway” (2017) 63° Convegno del Gruppo Embriologico Italiano - Proceedings of the Italian Embryological Group (GEI) ISSN 1121-760X volume 61/supplement 1 2017 Rome (Italy) 12-15/05/2017

“Artificial molecular machines: stimuli induced motion from solution to surface.” (2009) JOINT CONFERENCES ON ADVANCED MATERIALS, FNMA (Functional and Nanonstructured Materials) & IMIM (Intermolecular and Magnetic Interactions in Matter)'09, Sulmona (L'Aquila), (Italy) 27-30/09/ 2009

“Electrochemical behaviour of cations of C60, corannulene and their derivatives” Giornate dell’Elettrochimica Italiana GEI 2004, Padova, (Italy) 5-9/09/2004

“Fine modulation of the electronic properties in a new class of pyridyl and pyrimidyl ligands” 3rd Chianti Electrochemistry Meeting on Metal-containing Molecules, Siena, (Italy) 3-9/07/2004

“Modified electrodes with spirobifluorene” Convegno NanoOrg, Venezia, (Italy) 1-4/04/2004.