



Curriculum Vitae Brevis (21.12.2022)



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Education

Graduated in Chemistry (Magna cum Laude) at University of Rome "La Sapienza" (1988).

Current Position

Associate Professor of Chemistry (CHIM/07) at the Dept. of Basic and Applied Sciences for Engineering (SBAI), University of Rome "La Sapienza".

Research Activities

Chemical and electrochemical syntheses, characterization and electrochemical studies of new organic compounds and nanocomposite materials with applications in several fields: OLED, photovoltaics, plastic scintillators, fiber optics, sensors, drug delivery, protection of cultural heritage.

The scientific activity is documented by about 80 publications (articles in international peer-reviewed and conference proceedings), 4 national patents and 30 international patents. Most international patents (25 out of 30) have been sold outright, and are now property of Merck Patent GmbH.

Teaching

From 1991-92 to date, charged with teaching of General Chemistry Courses for the Degree Courses in Electronic Engineering, Telecommunications, Information Technology, Management, and for the Master Degree in Nanotechnology Engineering, chairing the examination committees at the University of Rome "La Sapienza".

Memberships and affiliations

Italian Chemical Society (2001), Institute for the Study of Nanostructured Materials (ISMN-CNR) (2004); Italian Interuniversity Consortium on Materials Science and Technology (INSTM) (2007), Research Centre for Nanotechnology Applied to Engineering (CNIS) (2007).

Referee

Tetrahedron; Journal of Electroanalytical Chemistry; Chemistry, A European Journal; Electrochimica Acta; Dyes and Pigments; Journal of Materials Chemistry; Mendeleev Communications.

Participation in Research Programs

Participant in University, Faculty and PRIN National Research Programs since 1993.

Activities of organization, management and coordination of research groups

Degree thesis - "Chemistry, Pharmaceutical Chemistry and Pharmacy"

Master Degree thesis - "Nanotechnology Engineering"

PhD thesis - "Materials Engineering, Raw Materials, Metallurgy and Environmental Protection".

Recent Publications

A Review of Applications of Nanocellulose to Preserve and Protect Cultural Heritage Wood, Paintings, and Historical Papers. Fornari, A.; Rossi, M.; Rocco, D.; Mattiello, L. *Appl. Sci.* 2022, 12, 12846. <https://doi.org/10.3390/app122412846>.

Terahertz continuous wave spectroscopy: a portable advanced method for atmospheric gas sensing. A. D'Arco, D. Rocco, F. Piamonte Magboo, C. Moffa, G. Della Ventura, A. Marcelli, L. Palumbo, L. Mattiello, S. Lupi, and M. Petrarca *Opt. Express* 2022, 30, 19005-19016. <https://doi.org/10.1364/OE.456022>.

In Situ Anodically Oxidized BMIm-BF₄: A Safe and Recyclable BF₃ Source. M. Bortolami, L. Mattiello, V. Scarano, F. Vetica, and M. Feroci *The Journal of Organic Chemistry* 2021, 86 (22), 16151-16157. <https://doi.org/10.1021/acs.joc.1c00932>.

Fluorescence Spectroscopy of Enantiomeric Amide Compounds Enforced by Chiral Light. Belardini, A.; Petronijevic, E.; Ghahri, R.; Rocco, D.; Pandolfi, F.; Sibilia, C.; Mattiello, L. *Appl. Sci.* 2021, 11, 11375. <https://doi.org/10.3390/app112311375>.

High resolution study of the n=7-9 p,p'-n-alkylazobenzenes phase transitions by photopyroelectric and adiabatic scanning calorimetries. S. Paoloni, U. Zammit, N. Orazi, F. Mercuri, L. Mattiello, D. Rocco, C. Glorieux, J. Thoen *Thermochimica Acta* (2021). <https://doi.org/10.1016/j.tca.2021.179077>.

Electrochemistry, a Useful Tool in the Synthesis of Oligothiophenes. Pandolfi, F.; Bortolami, M.; Feroci, M.; Mattiello, L.; Scarano, L.; Rocco, D. *Current Organic Chemistry*, 25, 2028-2036 (2021). <https://doi.org/10.2174/1385272825666210715104931>.

Solvatochromic Behaviour of New Donor-Acceptor Oligothiophenes. D'Anna, F.; Pandolfi, F.; Rocco, D.; Marullo, S.; Feroci, M.; Mattiello, L. *New J. Chem.*, 45, 11636-11643 (2021). <https://doi.org/10.1039/D1NJ01715B>.

Organic Electrochemistry: Synthesis and Functionalization of β -Lactams in the Twenty-First Century. Bortolami, M.; Chiarotto, I.; Mattiello, L.; Petrucci, R.; Rocco, D.; Vetica, F.; Feroci, M. *Heterocyclic Communications*, 27, 32-44 (2021). <https://doi.org/10.1515/hc-2020-0121>.

Xanthine scaffold: available synthesis routes to deliver diversity by derivatization. Petrucci, R.; Feroci, M.; Mattiello, L.; Chiarotto, I. *Mini-Reviews in Organic Chemistry* ISSN:1570-193X, 18, 27-42 (2021). <https://doi.org/10.2174/1570193x17999200507103141>.

Naphthalimide Imidazolium-Based Supramolecular Hydrogels as Bioimaging and Theranostic Soft Materials. Rizzo, C.; Cancemi, P.; Mattiello, L.; Marullo, S.; D'Anna, F. Naphthalimide Imidazolium-Based Supramolecular Hydrogels as Bioimaging and Theranostic Soft Materials. *ACS Appl. Mater. Interfaces* 12, 48442-48457 (2020). <https://doi.org/10.1021/acsami.0c17149>.

Novel Fast Identification and Determination of Free Polyphenols in Untreated Craft Beers by HPLC-PDA-ESI-MS/MS in SIR Mode, R. Petrucci, P. Di Matteo, G. De Francesco, L. Mattiello, G. Perretti, P. Russo, *J. Agric. Food Chem.* 68, 7984-7994 (2020). <https://doi.org/10.1021/acs.jafc.0c02802>.

TOPS project: Development of new fast timing plastic scintillators. R. Mirabelli, A. Belardini, L. Mattiello, M. Marafini, D. Rocco, A. Sarti, A. Sciubba, C. Sibilia, G. Traini, V. Patera. *Il Nuovo Cimento C* 43, 1-6 (2020).

A comparative study of organic photodetectors based on P3HT and PTB7 polymers for visible light communication. L. Salamandra, L. La Notte, C. Fazolo, M. Di Natali, S. Penna, L. Mattiello, L. Cinà, R. Del Duca, A. Reale, *Organic Electronics* 81, 105666 (2020).

An Insight into the Reactivity of the Electrogenerated Radical Cation of Caffeine. M. Feroci, M. Bortolami, I. Chiarotto, P. Di Matteo, L. Mattiello, F. Pandolfi, D. Rocco, R. Petrucci, *Electrochem* 1, 44-55 (2020).

Graphene Oxide: A Smart (Starting) Material for Natural Methylxanthines Adsorption and Detection. R. Petrucci, I. Chiarotto, L. Mattiello, D. Passeri, M. Rossi, G. Zollo and M. Feroci, *Molecules* 24, 4247 (2019)

The Electrogenerated Cyanomethyl Anion: An Old Base Still Smart. I. Chiarotto, L. Mattiello and M. Feroci, *Accounts of Chemical Research* 52, 3297-3308 (2019).

Two Different Selective Ways in the Deprotonation of β -Bromopropionanilides: β -Lactams or Acrylanilides Formation. F. Pandolfi, I. Chiarotto, L. Mattiello, R. Petrucci and M. Feroci, *ChemistrySelect* 4, 12871-12874 (2019).

Electrochemical Oxidation of Theophylline in Organic Solvents: HPLC-PDA-ESI-MS/MS Analysis of the Oxidation Products. Chiarotto, L. Mattiello, F. Pandolfi, D. Rocco, M. Feroci and R. Petrucci, *ChemElectroChem* 6, 4511-4521 (2019)

Cathodic Reduction of Caffeine: Synthesis of an Amino-Functionalized Imidazole from a Biobased Reagent. F. Pandolfi, I. Chiarotto, L. Mattiello, D. Rocco and M. Feroci, *Synlett* 30, 1215-1218 (2019)

Electrochemical studies of new donor-acceptor oligothiophenes. M. Feroci, T. Civitarese, F. Pandolfi, R. Petrucci, D. Rocco, D. Zane, G. Zollo and L. Mattiello, *ChemElectroChem* **6**, 4016–4021 (2019)

Electrochemical synthesis and amidation of benzoin: benzamides from benzaldehydes. D. Rocco, I. Chiarotto, L. Mattiello, F. Pandolfi, D. Zane and M. Feroci, *Pure Appl. Chem.* **91**, 1709–1715, (2019)

Perovskite Photo-Detectors (PVSK-PDs) for Visible Light Communication. L. Salamandra, N. Yaghoobi Nia, M. Di Natali, C. Fazolo, S. Maiello, L. La Notte, G. Susanna, A. Pizzoleo, F. Matteocci, L. Cinà, L. Mattiello, F. Brunetti, A. Di Carlo and A. Reale, *Organic Electronics* **69**, 220–226 (2019)

Synthesis and characterization of new D- π -A and A- π -D- π -A type oligothiophene derivatives. F. Pandolfi, D. Rocco and L. Mattiello, *Org. Biomol. Chem.* **17**, 3018–3025 (2019)

Cathodic behaviour of dicationic imidazolium bromides: the role of the spacer. M. Feroci, D. Rocco, I. Chiarotto, F. D'Anna, L. Mattiello, F. Pandolfi and C. Rizzo, *ChemElectroChem* **6**, 4275 (2019)

Patents

Scintillatore Organico. L. Mattiello, V. Patera, A. Belardini, D. Rocco, M. Marafini, Patent Application 102022000002996 2022. Property of Sapienza University of Rome and Centro Studi e Ricerche E. Fermi.

Bifluorenylidene derivatives, their preparation and uses thereof. Mattiello, L.; Rampazzo, L. WO2010038251 2010, EP2342172A1 2011. Property of Sapienza University of Rome.

Carbonyl derivatives having a C3 symmetry, their preparation and uses thereof. Mattiello, L.; Rampazzo, L. WO2010038252 2010, EP2334630A2 2011. Property of Sapienza University of Rome.

Derivati del bifluorenylidene, loro preparazione e loro uso. Mattiello, L.; Rampazzo, L. RM2008A522A1 2010. Property of Sapienza University of Rome.

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Spirobifluorene oligomerization derivative, its preparation and application. Mattiello L.; Fioravanti G.; Rampazzo L. CN101076508B 2011. Property of Merck Patent GmbH.

Oligomeric derivatives of spirobifluorene, their preparation and use. Mattiello L.; Fioravanti G.; Rampazzo L. WO2006005627 2006; JP2008506658 2008; US2009234164 2009. Property of Merck Patent GmbH.

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Organic electroluminescent device. Mattiello L.; Fioravanti G.; Rampazzo L.; Stoessel P.; Breuning E. WO2006005626 2006; KR20070038110 2007; US2008093980 2008; CN101300214 2008; US7683229 2010. Property of Merck Patent GmbH.

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