CURRICULUM VITAE

Prof. RITA GIOVANNETTI

Current position

Associate Professor Researcher, Scientific sector CHIM12, at School of Science and Technology, Chemistry Division, University of Camerino. E-mail: rita.giovannetti@unicam.it.

Education

1989: Chemistry Degree at University of Camerino.

Employment History

1991-1993: Technical Collaborator level VII, University of Camerino
1993-1998: Technical Functionary level VIII, University of Camerino
1999-2001: Technical coordinator first special role, University of Camerino
2002-May 2021: Full-time Researcher at School of Science and Technology, University of Camerino
June 2021: Associate Professor-Sector Environmental Chemistry CHIM12.

Scientific profile and research activity

The research activity of Rita Giovannetti, in the field of Environmental / Analytical Chemistry, is related to: environmental remediation; functional nanomaterials for environmental applications: dye sensitized solar cells, adsorption and photocatalysis to remove pollutants; nanochemistry for sensors or activators, characterization and application of porphyrins and natural dyes; water chemistry and water depuration; chemistry of water in CH4-CO_2 replacement of gas hydrates; chemistry in bioremediation and bioproducts, speciation of particular pollutants and analytes in different environmental matrices.
The research activity of Rita Giovannetti is certified by papers of international journals, chapter of books and by the participation in several national and international conferences.

Keywords: Natural pigments; Nanotechnology, Photoactive Materials, chemistry of water, natural compounds, energy, aggregation process, kinetics, Environmental Chemistry, Analytical chemistry.

Supervisor

Past: 45+ Degree and Master degree students, 4 PhD students, and 4 Scholarship for research
Currently: supervisor of 2 Master degree students, 1 PhD student, 2 Scholarships for research, 1 Research fellow.

Participation in the Academic Board within the Research Doctorate in Chemical and Pharmaceutical Sciences and Biotechnology.

Didactic activity

Environmental chemistry and Laboratory
Environmental remediation
Energy production and storage

Recent Projects

FAR 2015-2017: NAMES Nanocomposite Materials for Energy and environment applicationS,
University of Camerino. -Development of nano-semiconductor based on graphene material for water depuration by photocatalysis and solar cells, with the synthesis of reduced Graphene Oxide by green methodologies.

Coordinator of the UNICAM unit in Prin 2017- Methane recovery and carbon dioxide disposal in natural gas hydrate reservoirs. Fin. Share: € 99296.00.

Publications

1. Rossi, A., Zannotti, M., Cuccioloni, M., ...Angeletti, M., **Giovannetti, R**., Silver nanoparticle-based sensor for the selective detection of nickel ions, *Nanomaterials*, **2021**, 11(7), 1733
2. Kari, N., Zannotti, M., **Giovannetti, R**., ...Abliz, S., Yimit, A., Sensing behavior of metal-free porphyrin and zinc phthalocyanine thin film towards xylene-styrene and HCl vapors in planar optical waveguide *Nanomaterials*, **2021**, 11(7), 1634
3. John, M.S., Nagoth, J.A., Zannotti, M., **Giovannetti, R.** Miceli, C., Pucciarelli, S., Biogenic synthesis of copper nanoparticles using bacterial strains isolated from an antarctic consortium associated to a psychrophilic marine ciliate: Characterization and potential application as antimicrobial agents, **Marine Drugs, 2021**, 19(5), 263.
4. Gambelli, A.M., Tinivella, U., **Giovannetti, R.**, Castellani, B., Giustiniani, M., Rossi, A., Marco Zannotti, M., Rossi, F., *Energies,* **2021**, 14, 1803.
5. Kazim, S., Gunnella, R., Zannotti, M., **Giovannetti, R**,..Klimczuk, T., Ottaviano, L., Determination of the refractive index and wavelength-dependent optical properties of few-layer CrCl3 within the Fresnel formalism *Journal of Microscopy*, **2021**.
6. Kari, N., Zannotti, M., Mamtmin, G., **Giovannetti, R**., Minofar, B., Řeha, D., Maimaiti, P., Kutilike, B., Yimit, A. Substituent effect on porphyrin film-gas interaction by optical waveguide: Spectrum analysis and molecular dynamic simulation, **2020**, *Materials*, 5613, 1-20.
7. Rommozzi, E., Giannakis, S., **Giovannetti, R**., Vione, D., Pulgarin, C., Detrimental vs. beneficial influence of ions during solar (SODIS) and photo-Fenton disinfection of E. coli in water: (Bi)carbonate, chloride, nitrate and nitrite effects, **2020**, *Applied Catalysis B: Environmental*, 270,118877.
8. Zannotti, M., Vicomandi, V., Rossi, A., Minicucci, M., Ferraro, S., Petetta, L., **Giovannetti, R**.,Tuning of hydrogen peroxide etching during the synthesis of silver nanoparticles. An application of triangular nanoplates as plasmon sensors for Hg2+ in aqueous solution, **2020**, *Journal of Molecular Liquids*, 309,113238.
9. Pacetti, D., Boarelli, M., **Giovannetti, R**., Ferraro, S., Conti, P., Alfei, B., Caprioli, G., Ricciutelli, M., Sagratini, G., Fedeli, D., Gabbianelli, R., Fiorini, D. , Chemical and sensory profiling of monovarietal extra virgin olive oils from the italian marche region, **2020** *Antioxidants*, 9(4),330.
10. Gigliobianco, M.R., Campisi, B., Peregrina, D.V., Censi, R., Khamitova, G., Angeloni, S., Caprioli, G., Zannotti, M., Ferraro, S., **Giovannetti, R**., Angeloni, C., Lupidi, G., Pruccoli, L., Tarozzi, A., Voinovich, D. Martino, P.D. , Optimization of the extraction from spent coffee grounds using the desirability approach, **2020,** *Antioxidants* 9(5),370.
11. Zannotti, M., Rossi, A., **Giovannetti, R**. SERS activity of silver nanosphere, triangular nanoplates, hexagonal nanoplates and quasi-spherical nanoparticles: Effect of shape and morphology, **2020** *Coatings* 10(3),288.
12. Zannotti, M., Benazzi, E., Stevens, L.A., (...), Gibson, E.A., **Giovannetti, R**., Reduced Graphene Oxide-NiO Photocathodes for p-Type Dye-Sensitized Solar Cells **2019**, *ACS Applied Energy Materials* 2(10), pp. 7345-7353.
13. Rommozzi, E., Zannotti, M., **Giovannetti, R**., (...), Gunnella, R., Di Cicco, A. Reduced graphene oxide/TiO2 nanocomposite: From synthesis to characterization for efficient visible light photocatalytic applications, **2018** *Catalysts* 8(12),598.
14. D'Amato, C.A., **Giovannetti, R**., Zannotti, M., (...), Gunnella, R., Di Cicco, A., Band gap implications on Nano-TiO2 surface modification with ascorbic acid for visible light-active polypropylene coated photocatalyst, **2018** *Nanomaterials*, 8(8),599.
15. Chiara Anna D'Amato, **Rita Giovannetti**, Marco Zannotti, Elena Rommozzi, Stefano Ferraro, Chiara Seghetti, Marco Minicucci, Roberto Gunnella, Andrea Di Cicco, (**2018**) Enhancement of Visible-Light Photoactivity By Polypropylene Coated Plasmonic Au/TiO2 for Dye Degradation In Water Solution, *Applied Surface Science* 441, 575–587.

16. Zannotti, Marco, **Giovannetti, Rita**, Minofar, Babak, Řeha, David, Plačková, Lydie, D'Amato, Chiara A, Rommozzi, Elena, Dudko, Hanna V, Kari, Nuerguli, Minicucci, Marco (**2018)**. Aggregation and metal-complexation behaviour of THPP porphyrin in ethanol/water solutions as function of pH. *Spectrochimica Acta. Part A, Molecular and Biomolecular Spectroscopy*, vol. 193, p. 235-248-248, ISSN: 1386-1425.
17. Fusari Alessandro, Carroll Michael R., Ferraro Stefano, **Giovannetti Rita**, Giudetti Geoffrey, Invernizzi Maria Chiara, Mussi Mario, Pennisi Maddalena (**2017**). Circulation path of thermal waters within the Laga foredeep basin inferred from chemical and isotopic (δ18O, δD, 3H, 87Sr/86Sr) data. *Applied Geochemistry*, vol. 78, p. 23-34, ISSN: 0883-2927.
18. **Giovannetti, Rita**, Rommozzi, Elena, Zannotti, Marco, D'amato, Chiara Anna (**2017**). Recent Advances in Graphene Based TiO2 Nanocomposites (GTiO2Ns) for Photocatalytic Degradation of Synthetic Dyes. *Catalysts*, vol. 7, p. 305-339, ISSN: 2073-4344.
19. **Giovannetti R.**, Rommozzi E., Zannotti M., D'Amato C. A., Ferraro S., Cespi M., Bonacucina G., Minicucci M., Di Cicco A. (2016). Exfoliation of graphite into graphene in aqueous solution: an application as graphene/TiO2nanocomposite to improve visible light photocatalytic activity. *Rsc Advances*, vol. 6, p. 93048-93055, ISSN: 2046-2069.
20. Stefano Ferraro, Cinzia Nasuti, Marco Piangerelli, Marco Guidi, **Rita Giovannetti**, Augusto Ferri, Rosita Gabbianelli (**2016**). Hair Microelement Profile as a Prognostic Tool in Parkinson's Disease. *Toxics,* vol. 4, p. 27-36.
21. **Giovannetti Rita**, Rommozzi Elena, D'Amato Chiara Anna, Zannotti Marco (**2016**). Kinetic Model for Simultaneous Adsorption/Photodegradation Process of Alizarin Red S in Water Solution by Nano-TiO2 under Visible Light.. *Catalysts*, p. 1-9.
22. Nasuti Cinzia, Ferraro Stefano, **Giovannetti Rita**, Piangerelli Marco, Gabbianelli Rosita (**2016**). Metal and Microelement Biomarkers of Neurodegeneration in Early Life Permethrin-Treated Rats. *Toxics*, vol. 4, ISSN: 2305-6304.
23. Marchetti Fabio, Palmucci Jessica, Pettinari Claudio, Pettinari Riccardo, Marangoni Mirko, Ferraro Stefano, **Giovannetti Rita**, Scuri Stefania, Grappasonni Iolanda, Cocchioni Mario, Hodar Francisco José Maldonado, Gunnella Roberto (**2016**). Preparation of Polyethylene Composites Containing Silver(I) Acylpyrazolonato Additives and SAR Investigation of their Antibacterial Activity. *Acs Applied Materials & Interfaces*, vol. 8, p. 29676-29687.
24. Zannotti Marco, **Giovannetti Rita**, D'Amato Chiara Anna, Rommozzi Elena (**2016**). Spectroscopic studies of porphyrin functionalized multiwalled carbon nanotubes and their interaction with TiO2 nanoparticles surface. *Spectrochimica Acta. Part A, Molecular And Biomolecular Spectroscopy*, vol. 153, p. 656-666.
25. Zannotti Marco, **Giovannetti Rita** (**2015**). Kinetic evidence for the effect of salts on the oxygen solubility using laboratory prototype aeration system. *Journal of Molecular Liquids*, vol. 211, p. 656-666, ISSN: 0167-7322.
26. Zannotti Marco, Wood Christopher J, Summers Gareth H, Stevens Lee A, Hall Matthew R, Snape Colin E, **Giovannetti Rita**, Gibson Elizabeth A (**2015**). Ni Mg Mixed Metal Oxides for p-Type Dye-Sensitized Solar Cells. *ACS Applied Materials & Interfaces*, vol. 7, p. 24556-24565.
27. **Rita Giovannetti**, Chiara Anna D' Amato, Marco Zannotti, Elena Rommozzi, Roberto Gunnella, Marco Minicucci, Andrea Di Cicco (**2015**). Visible light photoactivity of Polypropylene coated Nano-TiO2 for dyes degradation in water. *Scientific Reports*, vol. 5, p. 1-12.
28. **R.Giovannetti**, M. Zannotti, L. Alibabaei, S.Ferraro (**2014**). Equilibrium and Kinetic Aspects in the Sensitization of Monolayer Transparent TiO2 Thin Films with Porphyrin Dyes for DSSC Applications, *International Journal Of Photoenergy*, p .1-9.
29. **R. Giovannetti**, L. Alibabaei, M. Zannotti, S. Ferraro, L. Petetta (**2013**) HPLC-DAD-ESI/MS Identification of Light Harvesting and Light Screening Pigments in the Lake Sediments at Edmonson Point, *The Scientific World Journal* l, p.1-9.

30. **R. Giovannetti** (**2012**). The use of spectrophotometry UV-Vis for the study of porphyrins. In: Jamal Uddin*. Macro To Nano Spectroscopy*. p. 87-108, Rijeka:Jamal Uddin.
31. L. Alibabaei, M. Wang, **R. Giovannetti**, J. Teuscher, D. Di Censo, J-E Moser,PASCAL. Compte, F. Pucciarelli, S. M. Zakeerruddin, M. Graetzel (**2010**). Application of Cu(II) and Zn(II) Coproporphyrins as sensitizers for thin film dye sensitized solar cells. *Energy & Environmental Science*, vol. 3, p. 956-961.
32. **R. Giovannetti**, L. Alibabaei, F.Pucciarelli (**2010**). Spectral and Kinetic Investigation on Oxidation and Reduction of Water Soluble Porphyrin-Manganese(III) Complex, *Inorganica Chimica Acta*, vol. 363, p. 1561-1567.
33. **R. Giovannetti**, L. Alibabaei, L. Petetta (**2010**). Aggregation behavior of a tetracarboxylic porphyrin in aqueous solution. *Journal of Photochemistry and Photobiology. A, Chemistry*, vol. 211, p.108-114.
34. **Giovannetti R**., Alibabaei L., Samanipour S. (**2009**). Structure investigations of binary azeotrope of diethyl amine-acetone by FT-IR and H-1 NMR spectroscopy. *Spectrochimica Acta. Part A, Molecular and Biomolecular Spectroscopy*, vol. 72, p. 390-393.
35. **Giovannetti R**, Alibabaei L, Pucciarelli F (**2009**). Kinetic model for astaxanthin aggregation in water-methanol mixtures. *Spectrochim Acta A Mol Biomol Spectrosc.*, 73(1):157-62.
36. **Giovannetti R.**, Bartocci V., Pucciarelli F., Petetta L. (**2008**). Remarks on the reactions of a tetracarboxylic porphyrin with gold and silver ions: A spectrophotometric, TEM and SEM study. *Polyhedron*, vol. 27, p. 1047-1053.
37. Castellani F., Vitali G., **Giovannetti R.**, Bartocci V. (**2005**). On the ultrasonic irradiation of coproporphyrin-I. *Current Topics in Analytical Chemistry*, vol. 5, p. 43-49.
38. **Giovannetti R.**, Bartocci V., Pucciarelli F., Ricciutelli M. (**2004**). Reactions of anionic porphyrin with group 11 elements: a spectrophotometric and electrospray ionization mass spectrometry study. *Talanta*, vol. 63, p. 857-864.
39. **Giovannetti R.**, Bartocci V. (**1999**). Determination of stability constants of Cu(II), Co(II), Zn(II), Ni(II) and Mn(II) chelates with 3,8,13,18-tetramethyl-21H,23H-porphine-2,7,12,17-tetrapropionic acid by reversed-phase high performance liquid chromatography. *Journal of Liquid Chromatography & Related Technologies*, vol. 22, p. 2151-2157.
40. **Giovannetti R**, Bartocci V, Petetta L (**1999**). Study of solvent extraction of mercury(II) with dibenzo-18-crown-6 from hydrochloric acid solution into benzene. *Journal of Chemical Research. Synopses*, vol. 5, p. 299.
41. **Giovannetti R**, Bartocci V (**1998**). High-performance liquid chromatographic determination of Mn(II), Co(II), Zn(II), Ni(II), Cu(II) as coproporphyrin-I complexes. *Journal of Liquid Chromatography & Related Technologies*, vol. 21, p. 2607-2617.
42. **Giovannetti R**, Bartocci V (**1998**). Kinetic and equilibrium studies on mercury(II)-coproporphyrin-I. Metal ion exchange reaction with cobalt(II) and application to determination of trace mercury(II). *Talanta*, vol. 46, p. 977-984.
43. **Giovannetti Rita**, Bartocci Vito And Vitali Giovanni (**1998**). Kinetic evidence for the mechanism of the metal-substitution reaction of lead(II)-porphyrin with cobalt(II). JOURNAL OF CHEMICAL RESEARCH. SYNOPSES, vol. 1, p. 680.
44. **R. Giovannetti**, Bartocci V (**1998**). Reactions of metal-ions with 3,8,13,18-tetramethyl-21H, 23H-porphine-2,7,12,17-tetrapropionic acid: mechanisms, kinetics and analytical applications. In: Rita Giovannetti. Recent Research Developments in Pure & Applied Analytical Chemistry.. p. 173-185, Trivandrum -695 008:S.G. PANDALAI, ISBN: 9788186846223
45. Bartocci V, **Giovannetti R**, Carsetti E (**1998**). Kinetics of the metallation of coproporphyrin-I in water with cadmium(II) and manganese(II). JOURNAL OF PORPHYRINS AND PHTHALOCYANINES, vol. 2, p. 139-144.
46. **R. Giovannetti**, Bartocci V, Ferraro S, Gusteri M, Passamonti P (**1995**). Spectrophotometric study of coproporphyrin-I complexes of copper(II) and cobalt(II). TALANTA, vol. 42 (12), p. 1913-1918.

47. F.Castellani, G.Vitali, G. Berchiesi, **R. Giovannetti** (**1993**). Ion Chromatographic Analysis of acetate and formate Ions Produced by Sonolysis of Aqueous Solutions of Sodium Hydrogencarbonate. ANALYTICAL PROCEEDINGS, vol. 30, p. 424-426.

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