



Scientific Curriculum of Prof. Nadia BARBERO

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Current position

- 2021 Associate Professor in Organic Chemistry, University of Turin, Italy.

Previous positions

- 2018-2021 Researcher (RTD-B) in Organic Chemistry, University of Turin, Italy.
- 2016-2018 Researcher (RTD-A) in Organic Chemistry, University of Turin, Italy.
- 2014-2016 Post-Doc Grant University of Turin, "Synthesis and structural characterization of chemicals for high-tech applications".
- 2013 Senior Scientist at CNRS, Laboratoire de Réactivité et Chimie des Solides, Université de Picardie Jules Verne, Amiens, France, "New inorganic semi-conductors for Near Infra-red Dye Sensitized Solar Cells".
- 2010-2011 Senior researcher at DYEPOWER Consortium, Rome, Italy, "Synthesis, purification and structural and spectroscopic characterization of organic dyes for DSC".
- 2008-2009 Post-Doc Grant University of Turin, "Use of atmospheric pressure plasma for the deposition of titania-based nanostructured materials on polymeric surfaces".

Visiting academic positions

- 2012 Visiting (September 2012 - December 2012) at Université de Picardie Jules Verne, Laboratoire de Réactivité et Chimie des Solides: "New inorganic semi-conductors for Near Infra-red dye sensitized solar cells". Supervisor: Dr. Frédéric Sauvage.
- 2005 Stage (December 2005) at NIMR (The National Institute for Medical Research), "Physical Biochemistry Division", London. Supervisor: Prof. J.F. Eccleston.

Teaching activities

Nov. 2022 Erasmus Teaching Mobility for the DATASUN school, Le Grand Bornand, France
July 2022 Teaching "Solar Energy" at the UNITA Summer School on Renewable Energies, Torino
Since 2021 Synthetic Chemistry for Smart Applications Course for master's degree in Materials Science (in English), 5CFU
Since 2021 Organic Chemistry Lab. for Bachelor's degree in Materials Science, 2 CFU
Since 2020 (every 2 years) PhD course in Organic and Hybrid Materials for Biochemical Applications
Since 2018 Organic Chemistry Course for Bachelor's degree in Biological Sciences, 6CFU
2016-2021 Applied Organic Chemistry Course for Master's degree in Industrial Chemistry, 4CFU

PhD supervision

2019-current Supervision of 1 PhD student in Chemical and Materials Sciences: D. Dereje
2021-current Joint Supervision of 1 PhD student of UPPA University, France: V. Maruzzo
2021-current Joint Supervision with USMB, France of 1 PhD student in Chemical and Materials Sciences: N. Faraj
2022-current Supervision of 1 PhD student, National PhD School in Photovoltaics: B. Charrier





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Education or Administrative role and position responsibility

2021-current Vice president of the Internationalization Committee at University of Turin.

2016-2021 Vice president of the master's degree in industrial chemistry, University of Turin.

2016-current Member of the Laboratory Commission, Department of Chemistry, University of Turin.

Scientific organisations/Coordination of academic activities

2021-Chair of the Annual Congress of the Italian Group of Photochemistry (GIF) held in Torino, 16-18 December 2021

2022-Member of the Organizing Committee of the Erasmus Blended Intensive Programme (BIP) "Renewable energy for the mountain territories", Torino 11-15 July 2022

2022- Member of the Organizing Committee of the Erasmus Blended Intensive Programme (BIP) "DataSUN", Le Grand-Bornand, France, 13-18 November 2022

2023- Scientific Committee of the conference Supramolecular Chemistry Days for Young Researchers 2023 that will be held in Cagliari on the 30th May – 1st June 2023.

2023-Member of the Organizing Committee of the Erasmus Blended Intensive Programme (BIP) "Energy communities in mountain villages", Timisoara, Romania, 9-14 July 2023

Editorial activity

2022-present Associate Editor in Green and Sustainable Chemistry (specialty section of Frontiers in Chemistry and Frontiers in Environmental Science).

2021-present Editorial Board Member of Colorants, (MDPI, ISSN 2079-6447) an international, peer-reviewed, open-access journal devoted to the publication of original papers, review articles, and communications related to all aspects of coloring matters, including physical or chemical properties, synthesis and preparation, applications. <https://www.mdpi.com/journal/colorants/editors>

Membership of scientific societies

Member of the Società Chimica Italiana (SCI), Organic Chemistry Division, Interdivisional Photochemistry Group (GIoF) and Interdivisional Group of Chemistry for Renewable Energy (EnerCHEM).

Member of GIF (Italian Group of Photochemistry) and SIFB (Italian Society of PhotoBiology).

Member of the European Photochemistry Association (EPA).

Fundings (current and past)

- Project title: DEMO – HORIZON-MSCA-DN-2022
Funding organisation: European Commission
- Project title: ARTIBLED “Engineered Artificial Proteins for Biological Light-Emitting Diodes” - H2020-FETOPEN-2018-2020
Funding organisation: European Commission
- Project title: IMPRESSIVE “Ground-Breaking Tandem of Transparent Dye Sensitised and Perovskite Solar Cells” - H2020-LC-SC3-2018-Joint-Actions
Funding organisation: European Commission
- Project title: BEST-4U “Tecnologia per Celle Solari Bifacciali ad Alta Efficienza a 4 Terminali per *Utility Scale*”
Funding organisation: PON Ricerca e Innovazione
- Project title: PEROVSKY “Perovskite and Other Printable Materials for Energy Application in Space”



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- Funding organisation: Italian Space Agency
- Project title: CANVAS “New concepts, materials and technologies for the integration of photovoltaic in buildings”
Funding organisation: Piano triennale 2019-2021 della Ricerca di sistema elettrico nazionale
- Project title: STAR: "Smart NIR dye-based wound dressings to fight bacteria".
Funding organisation: Grant for Internationalization - GFI - Programmazione Triennale 21-23, Università di Torino.

Significant career breaks

Maternity leave: 6 months (04/09/2016–04/03/2017) and 5 months (22/04/2019-23/09/2019).

Bibliometric data

- o Total number of publications in peer-reviewed journals: 83
- o Number of citations (in Scopus): > 2000
- o H-Index (in Scopus): 27

Book Chapters

- [L3] J.G. Vitillo, C. Atzori, B. Civalleri, **N. Barbero**, C. Barolo, F. Bonino. Design and characterization of MOFs (Metal Organic Frameworks) for innovative applications. Chapter 10 in Rational Design of Hybrid Organic-Inorganic Interfaces, The Next Step Towards Advanced Functional Materials. **2018** Edited by Marie-Hélène Delville. Wiley.
- [L2] S. Rackauskas, **N. Barbero**, C. Barolo, G. Viscardi. ZnO Nanowires for Dye Sensitized Solar Cells. Chapter 4 in Nanotechnology and Nanomaterials “Nanowires - New Insights”, book edited by Khan Maaz, ISBN 978-953-51-3284-4, Published: July 5, **2017**.
- [L1] **N. Barbero** and F. Sauvage. Low-Cost Electricity Production from Sunlight: Third-Generation Photovoltaics and the Dye-Sensitized Solar Cell. Chapter 3 in Materials for Sustainable Energy Applications: Conversion, Storage, Transmission, and Consumption. Edited by Xavier Moya and David Muñoz-Rojas. **2016** Pan Stanford Publishing Pte. Ltd.

List of Publications

- [P83] Naim, W., Grifoni, F., Challuri, V., Mathiron, D., Ceurstemont, S., Chotard, P., Alnasser, T., Dzeba, I., **Barbero, N.**, Pilard, S., Barolo, C., Sauvage, F. Hybrid Thiolate-Based Electrolyte Improving Aesthetic, Performance and Stability Triptych of Wavelength Selective NIR Transparent Dye Sensitized Solar Cells. *Cell Reports Physical Science*, in press
- [P82] Bordignon, N., Köber, M., Chinigò, G., Pontremoli, C., Sansone, E., Vargas-Nadal, G., Moran Plata, M.J., Fiorio Pla, A., **Barbero, N.***, Morla-Folch, J., Ventosa, N. Quatsomes Loaded with Squaraine Dye as an Effective Photosensitizer for Photodynamic Therapy. *Pharmaceutics* (**2023**) 15, 902-920.



- [P81] Butnarasu, C., Pontremoli, C., Moran Plata, M.J., **Barbero, N.***, Visentin, S. Squaraine Dyes as Fluorescent Turn-on Probes for Mucins: A Step Toward Selectivity. *Photochemistry and Photobiology* (2023), 99, p. 562-569.
- [P80] Pontremoli C., Chinigò G., Galliano S., Moran Plata M. J., Dereje D. M., Sansone E., Gilardino A., Barolo C., Fiorio Pla A., Visentin S., **Barbero N.*** Photosensitizers for photodynamic therapy: Structure-activity analysis of cyanine dyes through design of experiments. *Dyes And Pigments* (2023) 210, 111047-111058.
- [P79] Antenucci, A., Nejrotti, S., Plata, M.J.M., Mariotti, N., **Barbero, N.*** Unconventional and Sustainable Synthesis of Polymethine Dyes: Critical Overview and Perspectives within the Framework of the Twelve Principles of Green Chemistry. *European Journal of Organic Chemistry* (2022), 2022(44), e202200943
- [P78] Canaparo, R., Foglietta, F., **Barbero, N.**, Serpe, L. The promising interplay between sonodynamic therapy and nanomedicine. *Advanced Drug Delivery Reviews* (2022), 189,114495
- [P77] Chinigò, G., Gonzalez-Paredes, A., Gilardino, A., **Barbero, N.**, Barolo, C., Gasco, P., Fiorio Pla, A., Visentin, S. Polymethine dyes-loaded solid lipid nanoparticles (SLN) as promising photosensitizers for biomedical applications. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy* (2022), 271,120909
- [P76] Dereje, D.M., Pontremoli, C., Moran Plata, M.J., Visentin, S., **Barbero, N.*** Polymethine dyes for PDT: recent advances and perspectives to drive future applications. *Photochemical and Photobiological Sciences*, (2022), 21(3), pp. 397-419
- [P75] Nejrotti, S., Antenucci, A., Pontremoli, C., Gontrani, L., Barbero, N., Carbone, M., Bonomo, M. Critical Assessment of the Sustainability of Deep Eutectic Solvents: A Case Study on Six Choline Chloride-Based Mixtures. *ACS Omega* (2022), 7, 47449–47461.
- [P74] Butnarasu, C., **Barbero, N.**, Visentin, S. Molecular insight into drugs binding to ctDNA: the fluorescence fast kinetic analysis of diclofenac and pentamidine. *Monatshefte fur Chemie* (2022), 153(1), pp. 105-111
- [P73] Grifoni, F., Bonomo, M., Naim, W., (...), Barolo, C., Sauvage, F. Toward Sustainable, Colorless, and Transparent Photovoltaics: State of the Art and Perspectives for the Development of Selective Near-Infrared Dye-Sensitized Solar Cells. *Advanced Energy Materials* (2021), 11(43),2101598
- [P72] Foglietta, F., Pinnelli, V., Giuntini, F., (...), Serpe, L., Canaparo, R. Sonodynamic treatment induces selective killing of cancer cells in an in vitro co-culture model. *Cancers* (2021), 13(15),3852
- [P71] W. Naim, V. Novelli, I. Nikolinakos, **N. Barbero**, I. Dzeba, F. Grifoni, Y. Ren, T. Alnasser, A. Velardo, R. Borrelli, S. Haacke, S. Zakeeruddin, M. Grätzel, C. Barolo, F. Sauvage. Transparent and colorless dye-sensitized solar cells exceeding 75 % average visible transmittance. *JACS Au* (2021), 1, 409–426.
- [P70] M. M. H. Desoky, M. Bonomo, **N. Barbero**, G. Viscardi, C. Barolo, P. Quagliotto. Dopant-free HTM Polymers for Perovskite Solar Cells: Structures and Concepts Towards Better Performances. *Polymers*, (2021), *accepted*.
- [69] C. Butnarasu, **N. Barbero***, C. Barolo, S. Visentin. Interaction of squaraine dyes with proteins: looking for more efficient fluorescent turn-on probes. *Dyes and Pigments*, 2021, 184, 108873.



- [68] A. Mariani, M. Bonomo, X. Gao, B. Centrella, A. Nucara, R. Buscaino, A. Barge, **N. Barbero**, L. Gontrani, S. Passerini. The unseen evidence of Reduced Ionicity: The elephant in (the) room temperature ionic liquids. *J. Mol. Liq.*, (2021), 324, 115069.
- [67] C. Butnarusu, **N. Barbero**, G. Viscardi, S. Visentin. Unveiling the interaction between PDT active squaraines with ctDNA: A spectroscopic study. *Spectrochim Acta A Mol Biomol Spectrosc.* 2020, 119224. doi: 10.1016/j.saa.2020.119224. *Online ahead of print.*
- [66] O. Yildirim, M. Bonomo, **N. Barbero***, C. Atzori, B. Civalleri, F. Bonino, G. Viscardi, C. Barolo. Application of Metal-Organic Frameworks and Covalent Organic Frameworks as (Photo)Active Material in Hybrid Photovoltaic Technologies. *Energies*, 2020, 13, 5602; doi:10.3390/en13215602.
- [65] N. Mariotti, M. Bonomo, L. Fagiolari, **N. Barbero**, C. Gerbaldi, F. Bella, C. Barolo. Recent advances in eco-friendly and cost-effective materials towards sustainable dye-sensitized solar cells. *Green Chem.*, 2020, 22, 7168-7218.
- [P64] T. Taroni, S. Cauteruccio, R. Vago, S. Franchi, **N. Barbero**, E. Licandro, S. Ardizzone, D. Meroni. Thiahelicene-grafted halloysite nanotubes: Characterization, biological studies and pH triggered release. *Applied Surface Science* (2020), 520, Article number 146351.
- [P63] C. Butnarusu, **N. Barbero**, C. Barolo, S. Visentin. Squaraine dyes as fluorescent turn-on sensors for the detection of porcine gastric mucin: A spectroscopic and kinetic study. *J. Photochem. Photobiol. B: Biol.* (2020), 205, Article number 111838.
- [P62] M. Mousivanda, L. Anfossi, K. Bagherzadeh, **N. Barbero**, A. Mirzadi-Gohari, M. Javan-Nikkhah. In silico maturation of affinity and selectivity of DNA aptamers against aflatoxin B1 for biosensor development. *Analytica Chimica Acta* (2020), 1105, 178-186.
- [P61] B. Ciubini, S. Visentin, L. Serpe, R. Canaparo, A. Fin, **N. Barbero***. Design and synthesis of symmetrical pentamethine cyanine dyes as NIR photosensitizers for PDT. *Dyes and Pigments* (2019), 160, 806–813.
- [P60] **N. Barbero**, C. Butnarusu, S. Visentin, C. Barolo. Squaraine Dyes: Interaction with Bovine Serum Albumin to Investigate Supramolecular Adducts with Aggregation-Induced Emission (AIE) Properties. *Chem. Asian J.* (2019), 14, 896–903.
- [P59] G. Alberto, **N. Barbero***, C. Divieto, E. Rebba, M. P. Sassi, G. Viscardi, G. Martra. Solid silica nanoparticles as carriers of fluorescent squaraine dyes in aqueous media: Toward a molecular engineering approach. *Colloids and Surfaces A* (2019), 568, 123–130.
- [P58] M. Bonomo, **N. Barbero**, G. Naponiello, M. Giordano, D. Dini, C. Barolo. Sodium Hydroxide Pretreatment as an Effective Approach to Reduce the Dye/Holes Recombination Reaction in P-Type DSCs. *Frontiers in Chemistry* (2019), 7, Article 99.
- [P57] C. Butnarusu, **N. Barbero**, D. Pacheco, P. Petrini, S. Visentin. Mucin binding to therapeutic molecules: The case of antimicrobial agents used in cystic fibrosis. *Int. J. Pharmaceutics* (2019), 564, 136-144.
- [P56] G.M. Paternò, **N. Barbero**, S. Galliano, C. Barolo, G. Lanzani, F. Scotognella, R. Borrelli. Excited State Photophysics of Squaraine Dyes for Photovoltaic Applications: an Alternative Deactivation Scenario. *J. Mater. Chem. C* (2018), 6(11), 2778-2785.
- [P55] **N. Barbero**, M. Coletti, F. Catalano, S. Visentin. Exploring gold nanoparticles interaction with mucins: a spectroscopic-based study. *Int. J. Pharm.* (2018), 535, 438–443.
- [P54] I. Miletto, A. Fraccarollo, **N. Barbero**, C. Barolo, M. Cossi, L. Marchese, E. Gianotti. Mesoporous silica nanoparticles incorporating squaraine-based photosensitizers: a combined experimental and computational approach. *Dalton Trans.*, (2018), 47(9), 3038-3046.



- [P53] C. Pontremoli, **N. Barbero**, G. Viscardi, S. Visentin. Insight into the interaction of Inhaled Corticosteroids (ICS) with human serum albumin: A spectroscopic-based study. *J. Pharm. Anal.*, (2018), 8 (1), 37-44.
- [P52] V. Novelli, **N. Barbero**, C. Barolo, G. Viscardi, M. Sliwa, F. Sauvage. Electrolyte containing lithium cation in squaraine-sensitized solar cells: interactions and consequences for performance and charge transfer dynamics. *Phys. Chem. Chem. Phys.*, (2017), 19, 27670-27681.
- [P51] G. M. Paternò, L. Moretti, A. Barker, C. D'Andrea, A. Luzio, **N. Barbero**, S. Galliano, C. Barolo, G. Lanzani, F. Scotognella. Near-Infrared Emitting Single Squaraine Dye Aggregate with large Stokes shift. *J. Mater. Chem. C*, (2017), 5, 7732.
- [P50] S. Rackauskas, **N. Barbero**, C. Barolo, G. Viscardi. ZnO Nanowire Application in Chemoresistive Sensing: A Review. *Nanomaterials*, (2017), 7, 381.
- [P49] E. Ceci-Ginistrelli, C. Pontremoli, D. Pugliese, **N. Barbero**, N. G. Boetti, C. Barolo, S. Visentin, D. Milanese. Drug release kinetics from biodegradable UV-transparent hollow calcium-phosphate glass fibers. *Mater. Lett.* (2017), 191, 116–118.
- [P48] P. Quagliotto, **N. Barbero**, C. Barolo, R. Buscaino, P. Carfora, S. Prosperini, G. Viscardi. Water based surfactant-assisted synthesis of thienylpyridines and thienylbipyridine intermediates. *Dyes Pigment.*, (2017), 137, 468-479.
- [P47] E. Fiscaro, C. Compari, F. Bacciottini, L. Contardi, E. Pongiluppi, **N. Barbero**, G. Viscardi, P. Quagliotto, G. Donofrio, M. P. Krafft. Nonviral gene-delivery by highly fluorinated gemini bispyridinium surfactant-based DNA nanoparticles. *J. Colloid Interface Sci.* (2017), 487, 182-191.
- [P46] **N. Barbero***, S. Cauteruccio*, P. Thakare, E. Licandro, G. Viscardi, S. Visentin. Is it possible to study the kinetic parameters of interaction between PNA and parallel and antiparallel DNA by stopped-flow fluorescence? *J. Photochem. Photobiol. B: Biol.* (2016), 163, 296–302.
- [P45] S. Livraghi, **N. Barbero**, S. Agnoli, C. Barolo, G. Granozzi, F. Sauvage, E. Giamello. A multi-technique comparison of the electronic properties of pristine and nitrogen-doped polycrystalline SnO₂. *Phys. Chem. Chem. Phys.* (2016), 18, 22617-22627.
- [P44] E. Fiscaro, L. Contardi, C. Compari, F. Bacciottini, E. Pongiluppi, G. Viscardi, **N. Barbero**, P. Quagliotto, B. Różycka-Roszak. Solution Thermodynamics of Highly Fluorinated Gemini Bispyridinium Surfactants for Biomedical Applications. *Colloid Surf. A-Physicochem. Eng. Asp.* (2016), 507, 236-242.
- [P43] **N. Barbero***, C. Barolo, G. Viscardi. Bovine Serum Albumin bioconjugation with FITC. *World J. Chem. Educ.* (2016), 4 (4), 80-85.
- [P42] M. Bonomo, **N. Barbero**, F. Matteocci, A. Di Carlo, C. Barolo, D. Dini. Beneficial Effect of Electron Withdrawing Groups on the Sensitizing Action of Squaraines for P-Type Dye Sensitized Solar Cells. *J. Phys. Chem. C* (2016), 120 (30), 16340–16353.
- [P41] S. Galliano, V. Novelli, **N. Barbero***, A. Smarra, G. Viscardi, R. Borrelli, F. Sauvage, C. Barolo. Dicyanovinyl and Cyano-Ester Benzoindolenine Squaraine Dyes: The Effect of the



- Central Functionalization on Dye-Sensitized Solar Cell Performance. *Energies*. (2016), 9, 486.
- [P40] E. Conterposito, I. Benesperi, V. Toson, D. Saccone, **N. Barbero**, L. Palin, C. Barolo, V. Gianotti, M. Milanese. High-Throughput Preparation of New Photoactive Nanocomposites. *ChemSusChem* (2016), 9 (11), 1279–1289.
- [P39] **N. Barbero**, M. Marenchino, R. Campos-Olivas, S. Oliaro-Bosso, L. Bonandini, J. Boskovic, G. Viscardi, S. Visentin. Carbon nanotubes and Porcine Gastric Mucin (PGM) interaction: effect of CNTs functionalization. *J. Nanopart. Res.* (2016), 18, 84.
- [P38] D. Saccone, C. Magistris, **N. Barbero**, P. Quagliotto, C. Barolo, G. Viscardi. Terpyridine and Quaterpyridine Complexes as Sensitizers for Photovoltaic Applications. *Materials* (2016), 9, 137.
- [P37] L. Serpe, S. Ellena, **N. Barbero***, F. Foglietta, F. Prandini, M. P. Gallo, R. Levi, C. Barolo, R. Canaparo, S. Visentin. Squaraines bearing halogenated moieties as anticancer photosensitizers: synthesis, characterization and biological evaluation. *Eur. J. Med. Chem.* (2016), 113, 187-197.
- [P36] F. Baldassarre, F. Foglietta, V. Vergaro, **N. Barbero**, A. L. Capodilupo, L. Serpe, S. Visentin, A. Tepore, G. Ciccarella. Photodynamic activity of Thiophene-derived Lysosome-specific dyes. *J. Photochem. Photobiol. B: Biol.* (2016), 158, 16-22.
- [P35] D. Saccone, S. Galliano, **N. Barbero**, P. Quagliotto, G. Viscardi, C. Barolo. Polymethine dyes in hybrid photovoltaics: structure-properties relationships. *Eur. J. Org. Chem.* (2016), 2016 (13), 2244–2259.
- [P34] **N. Barbero**, D. Vione. Why Dyes Should Not Be Used to Test the Photocatalytic Activity of Semiconductor Oxides. *Environ. Sci. Technol.* (2016), 50, 2130–2131.
- [P33] C. Pontremoli, **N. Barbero**, G. Viscardi, S. Visentin. Mucin–drugs interaction: The case of theophylline, prednisolone and cephalexin. *Bioorg. Med. Chem.* (2015), 23 (20), 6581-6586.
- [P32] **N. Barbero**, C. Magistris, J. Park, D. Saccone, P. Quagliotto, R. Buscaino, C. Medana, C. Barolo, G. Viscardi. Microwave-Assisted Synthesis of Near-Infrared Fluorescent Indole-Based Squaraines. *Org. Lett.* (2015), 17 (13), 3306–3309.
- [P31] S. Visentin, **N. Barbero**, F. R. Bertani, M. Cestelli Guidi, G. Ermondi, G. Viscardi, V. Mussi. Multivariate analysis applied to Raman mapping of dye-functionalized carbon nanotubes: a novel approach to support the rational design of functional nanostructures. *Analyst*, (2015), 140(16), 5754-5763.
- [P30] **N. Barbero**, C. Magistris, P. Quagliotto, L. Bonandini, C. Barolo, R. Buscaino, C. Compari, L. Contardi, E. Fiscaro, G. Viscardi. Synthesis, Physico-Chemical Characterization and Interaction with DNA of Long Alkyl Chain Gemini Pyridinium Surfactants. *ChemPlusChem* (2015), 80(6), 952–962.
- [P29] **N. Barbero***, S. Visentin, G. Viscardi. The different kinetic behaviour of two potential photosensitizers for PDT. *J. Photochem. Photobiol. A: Chem.* (2015), 299, 38-43.
- [P28] E. Fiscaro, C. Compari, F. Bacciottini, L. Contardi, **N. Barbero**, G. Viscardi, Guido; P. Pierluigi; G. Donofrio, B. Różycka-Roszak, P. Misiak, Paweł; E. Woźniak, F. Sansone.



- Nonviral Gene-Delivery: Gemini Bispyridinium Surfactant-based DNA Nanoparticles. *J. Phys. Chem. B* (2014), 118, 13183–13191.
- [P27] J. Park‡, **N. Barbero**‡, J. Yoon, E. Dell’Orto, S. Galliano, R. Borrelli, J.-H. Yum, D. Di Censo, M. Grätzel, Md. K. Nazeeruddin, C. Barolo and G. Viscardi. Panchromatic symmetrical squaraines: a step forward in the molecular engineering of low cost bluegreenish sensitizers for dye-sensitized solar cells. *Phys. Chem. Chem. Phys.* (2014), 16, 24173-24177.
- [P26] B. Kumar, D. Tikariha, M.L. Satnami, N. **Barbero**, P. Quagliotto, K.K. Ghosh. Catalytic hydrolysis of phosphodiester by nucleophilic ions in gemini micellar media. *J. Phys. Org. Chem.* 27 (7), (2014), 613-621.
- [P25] I. Venditti, **N. Barbero**, M. Russo, A. Di Carlo, F. Decker, I. Fratoddi, C. Barolo, D. Dini. Electrodeposited ZnO with squaraine sensitizers as photoactive anode of DSCs. *Mater. Res. Express*, 1, (2014) 015040.
- [P24] E. Fiscaro, C. Compari, F. Bacciottini, **N. Barbero**, G. Viscardi, P. Quagliotto. Is the counterion responsible for the unusual thermodynamic behaviour of the aqueous solutions of gemini bispyridinium surfactants? *Colloid Surf. A-Physicochem. Eng. Asp.* 443 (2014) 249–254.
- [P23] D. Tikariha, B. Kumar, S. Ghosh, A. K. Tiwari, S. K. Saha, **N. Barbero**, P. Quagliotto, K. K. Ghosh. Interaction Between Cationic Gemini and Monomeric Surfactants: Micellar and Surface Properties. *J Nanofluids* (2013), 2, 316–324.
- [P22] C. Barolo, J.-H. Yum, E. Artuso, **N. Barbero**, D. Di Censo, M. G. Lobello, S. Fantacci, F. De Angelis, M. Grätzel, Md. K. Nazeeruddin, G. Viscardi. A simple synthetic route to obtain pure transruthenium(II) complexes for dye sensitized solar cell applications. *ChemSusChem* (2013) 6, 2170 – 2180.
- [P21] C. Magistris, S. Martiniani, **N. Barbero**, J. Park, C. Benzi, A. Anderson, C. Law, C. Barolo, B. O’Regan. Near-infrared Absorbing Squaraine Dye with extended π conjugation for Dye-sensitized Solar Cells. *Renew. Energ.* (2013), 60, 672–678.
- [P20] B. Kumar, D. Tikariha, K. K. Ghosh, **N. Barbero**, P. Quagliotto. Kinetic study on effect of novel cationic dimeric surfactants for the cleavage of carboxylate ester. *J. Phys. Org. Chem.* (2013), 26, 626–631.
- [P19] J. Park, G. Viscardi, C. Barolo, **N. Barbero**. Near-infrared sensitization in dye sensitized solar cells. *Chimia* (2013), 67(3), 129-135.
- [P18] B. Kumar, D. Tikariha, K. K. Ghosh, **N. Barbero**, P. Quagliotto. Effect of polymers and temperature on critical micelle concentration of some gemini and monomeric surfactants. *J. Chem. Thermodynamics* (2013), 62, 178–185.
- [P17] D. Tikariha, N. Singh, M.L. Satnami, K.K. Ghosh, **N. Barbero**, P. Quagliotto. Physicochemical characterization of cationic gemini surfactants and their effect on reaction kinetics in ethylene glycol-water medium. *Colloid Surf. A-Physicochem. Eng. Asp.* (2012), 411, 1-11
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