

Giovanni Bella

Curriculum Vitae

Summary

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|---|----------|
| Summary..... | 1 |
| EDUCATION HISTORY AND WORK EXPERIENCE | 2 |
| TEACHING ACTIVITY | 2 |
| TRAINING ACTIVITY | 3 |
| SCIENTIFIC ACTIVITY | 3 |
| Participation in Research Projects..... | 3 |
| Scientific collaborations..... | 3 |
| SCIENTIFIC PUBLICATIONS | 4 |
| Indexed journal articles Scopus/ WOS..... | 5 |
| Ph. D thesis in Chemistry..... | 6 |
| SEMINARS..... | 6 |
| CONTRIBUTIONS TO CONFERENCES OF NATIONAL AND INTERNATIONAL RELEVANCE | 7 |
| Posters and oral communications..... | 7 |
| PARTICIPATION IN EDITORIAL COMMITTEES OF SCIENTIFIC JOURNALS..... | 7 |

Giovanni Bella

Post-doctoral researcher
PhD Chemistry

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EDUCATION HISTORY AND WORK EXPERIENCE

- 2018 **Master's degree in Chemistry** (110/110 cum laude), at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina;
- 2022 **PhD in Chemistry**, thesis: "*The hydrogen bond: actor and stage in the theater of chemistry*", at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina;
- 2022 **research grant holder** in the project "Simulation approaches for predicting the absorption and emission properties of photoactive inorganic systems", at Department of Health Sciences, University of Magna Græcia (scientific manager Prof. Adriana Pietropaolo);
- 2023-2025 **research grant holder** in the project "Development of rapid sensor systems using markers for specific cell identification", at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina (scientific manager Prof. Sabrina Conoci);
- From 2025 **research grant holder** in the project "Smart systems for the targeting and killing of mesothelioma tumors (Smyle)", at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina (scientific manager Prof. Sabrina Conoci);

TEACHING ACTIVITY

- 2018-2019 Tutoring activities, funding M.I.U.R. (D.M.1047/2017 Art.3), at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina;
- 2020-2021 Teaching activity (30 hours), in "Computational Chemistry" at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina;

from 2021 subject-matter expert (SME) in “Computational Chemistry” at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina.

TRAINING ACTIVITY

- Traineeship at Institute of Advanced Energy Technologies “Nicola Giordano” - CNR concerning “Characterizations and membrane engineering on polysulphonates polymeric species” (February 2016 - July 2016);
- Traineeship at Institute for Chemical-Physical Processes-CNR concerning “Study of chromophores for applications in Grätzel cells” (February 2018 - July 2018);

SCIENTIFIC ACTIVITY

Participation in Research Projects

- project “Covalent dynamic chemistry with photoselection”, Italian SuperComputing Resource Allocation-CINECA , from September 14, 2021 to June 14, 2022 (scientific manager Prof. Giuseppe Bruno);
- scientific manager for the project “Chiroptical property predictions in chiral hybrid organic-inorganic perovskites”, Italian SuperComputing Resource Allocation-CINECA, from May 16, 2022 to March 16, 2023;
- project “Circular dichroism in curved aromatic compounds”, Italian SuperComputing Resource Allocation-CINECA , from October 18, 2022 to June 18, 2023 (scientific manager Prof. Giuseppe Bruno).
- scientific manager for the project “Circularly polarized luminescence prediction in saddle-helix nanographenes”, Italian SuperComputing Resource Allocation-CINECA, from February 16, 2023 to November 20, 2023;
- scientific manager for the project “Covalent Organic Frameworks Luminescence Simulations”, Italian SuperComputing Resource Allocation-CINECA, from October 18, 2023 to July 18, 2024;
- scientific manager for the project “Hierarchical Multi-Level Supramolecular Chirality Simulation”, Italian SuperComputing Resource Allocation-CINECA, from April 19, 2024 to January 19, 2025;

Scientific collaborations

As part of my research activity, national and international collaborations with:

- scientific collaboration with Prof. Zouhaier Aloui , Department of chemistry at “College of Science, King Khalid University (KKU)” (Saudi Arabia) University of Carthage, *Faculté des Sciences de Bizerte* (Zarzouna Bizerte, Tunisia), (publication P13);

- scientific collaboration with Prof. Hadi Amiri Rudbari, Department of chemistry at *University of Isfahan*, (Isfahan, Iran), (publication P12);
- scientific collaboration with Prof. Alexandra R. Fernandes, *Departamento Ciências da Vida Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, UCIBIO*, (Caparica, Portugal), (publication P12);
- scientific collaboration with Prof. Elisabetta Collini, Department of chemical sciences at University of Padua (publications P5 and P7);
- scientific collaboration with Prof. Giacomo Messina, Department of Information Engineering, Infrastructure and Sustainable Energy at Mediterranean University of Reggio Calabria (publication P14);
- scientific collaborations with researchers Alessandra Carbone and Rolando Pedicini at Institute of Advanced Energy Technologies “Nicola Giordano” - CNR (publication P11);
- scientific collaboration with prof. Archimede Rotondo, Department of Biomedical, Dental and Morphological and Functional Imaging at University of Messina (publication P10);
- scientific collaboration with prof. Mariangela Castriciano, Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina (publications P5 and P7);
- scientific collaborations with Prof. Sebastiano Campagna Fausto Puntoriero, Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina (publications P2 and P3);
- scientific collaborations with Prof. Massimiliano Cordaro, Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina (publications P4, P5, P7, P9, P11);
- scientific collaboration with Prof. Giuseppe Bruno, Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina (publications P1, P4, P6, P8, P9, P12, P13, P14, P15, P16, P17, P18, P19, P20);
- *Nanoscale Simulations And Chemical Modeling* NANOCHEM team group, University of Magna Græcia, scientific manager Prof. Adriana Pietropaolo.
- scientific collaboration with Ph. D Jan Holub, University of Chemistry and Technology in Prague (UCT Prague) (publication P18).
- scientific collaboration with Prof. Luca Prodi, Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina (publication P23).

SCIENTIFIC PUBLICATIONS

As of the date of this CV, Ph D. Giovanni Bella is the author of the following scientific publications:

- n. 23 Indexed journal articles Scopus/ WOS (P1-P20) 2020-2024. In 12 publications as **first and/or corresponding author** (P1, P4, P8, P9, P10, P15, P17, P18, P19, P20, P21,P22);

Indexed journal articles Scopus/ WOS

- P1. Bella G.*, Milone M., Bruno G., Santoro A., *Phys. Chem. Chem. Phys.* **2022**, *24*, 26642;
- P2. Santoro A., Bella G., Cancelliere A.M., Serroni S., Lazzaro G., Campagna S., *Molecules*, **2022**, *27*, 2713;
- P3. Giannetto A., Nastasi F., Puntoriero F., Bella G., Campagna S., Lanza S., *Dalton Transactions*, **2021**, *50*, 1422;
- P4. Bella G.*, Santoro A., Nicolò F., Bruno G., Cordaro M., *ChemPhysChem*, **2021**, *22*, 593;
- P5. Fresch E., Peruffo N., Trapani M., Cordaro M., Bella G., Castriciano M.A., Collini E., *J. Chem. Phys.*, **2021**, *154*, 084201;
- P6. Santoro A., Bella G., Bruno G., Neri G., Akbari Z., Nicolò F., *J. Mol. Struct.*, **2021**, 1229, 129801;
- P7. Trapani M., Castriciano M.A., Collini E., Bella G., Cordaro M., *Org. Biomol. Chem.*, **2021**, *19*, 8118;
- P8. Bella G., Nicolò F., Bruno G., Santoro A., *Molecules*, **2021**, *26*, 5746;
- P9. Bella G.*, Santoro A., Cordaro M., Nicolò F., Bruno G., *Chin. J. Chem.*, **2019**, *38*, 163;
- P10. Bella G.*, Rotondo A., *Chem. Phys. Lipids*, **2020**, *232*, 104973;
- P11. Carbone A., Pedicini R., Gatto I., Saccà A., Patti A., Bella G., Cordaro M., *Polymers*, **2020**, *12*, 283;
- P12. Kordestani N., Rudbari H. A., Fernandes A. R., Raposo L. R., Baptista P. V., Ferreira D., Bruno G., Bella G., Scopelliti R., Braun J. D., Herbert D. E., Blacque O., *ACS Comb. Sci.*, **2020**, *22*, 89;
- P13. Aloui Z., Ounelli C., Essid M., Nicolò F., Bella G., Santoro A., Abid S., Bruno G., *J. Solid State Chem.*, **2022**, *316*, 123572;
- P14. Santoro A., Bruno G., Nicolò F., Bella G., Messina G., *J. Mol. Struct.*, **2020**, *1202*, 127231;

- P15. Bella G.*, Bruno G., Santoro A., *Flat Chem.*, **2023**, 40, 100509.
- P16. Aloui Z., Essid M., Bruno G., Bella G., Santoro A., Abid S., *Mater. Today Commun.*, **2023**, 36, 106484.
- P17. Bella G.*, Bruno G., Santoro A., *Flat Chem.*, **2023**, 42, 100567.
- P18. Bella G., Holub J., Bruno G., Nicolò F., Santoro A., *Molecules*, **2023**, 28(21), 7410.
- P19. Bella G.*, Bruno G., Santoro A., *J. Mol. Liq.*, **2023**, 391, 123268.
- P20. Bella G.*, Milone M., Bruno G., Santoro A., *J. Mater. Chem. C*, **2024**, 12(8), 3005–3012.
- P21. Bella G.*, Bruno G., Santoro A., *J. Mater. Chem. C*, **2024**, 12, 17913-17924.
- P22. Bella G.*, Bruno G., Santoro A., *J. Photochem. Photobiol. A Chem.*, **2025**, 458, 115978.
- P23. Calorenni P., Bella G., Nicolò M.S., Sciuto E.L., Balli M.V., Valenti G., Gritti T., Varani S., Prodi L., Conoci S., *Adv. Mater. Interfaces*, **2024**, 2400642.

Ph. D thesis in Chemistry

- A1. **Giovanni Bella.** *The hydrogen bond: actor and stage in the theater of chemistry*, Tutor: Prof. Giuseppe Bruno, at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, February 20, 2022.

SEMINARS

- Giovanni Bella. “*Exploration of electronic effects on organometallic systems with different spin multiplicity through DFT calculations*” at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, July 5, 2019 (Doctochem second edition);
- Giovanni Bella. “*Do secondary electrostatic interactions influence multiple dihydrogen bond? AA-DD array on a novel amine-borane aza-coronand: theoretical studies and synthesis*” at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, November 19-20, 2020 (Doctochem third edition);
- Giovanni Bella. “*Supramolecular Bodipy based dimer: design and theoretical calculations*” at Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, November 25-26, 2021 (Doctochem fourth edition).

CONTRIBUTIONS TO CONFERENCES OF NATIONAL AND INTERNATIONAL RELEVANCE

Posters and oral communications

- C1. Giovanni Bella, Mariagrazia Fortino, Adriana Pietropaolo. *Chiroptical properties prediction in chiral hybrid organic-inorganic perovskites*. SCICaSi 2022, Reggio Calabria December 1-2, 2022. (poster)
- C2. Giovanni Bella, Paolo Calorenni, Emanuele Luigi Sciuto, Sabrina Conoci. *Surface properties prediction in gold bio-functionalized electrodes*. XII National Conference on Sensors and Microsystems. Bologna, February 7-9, 2024. (poster)
- C3. Giovanni Bella, Antonio Santoro, Giuseppe Bruno, *Vibrationally-resolved deep-red circularly polarized luminescence spectra of C70 derivative through gaussian curvature analyses of ground and excited states*. SCISiCa 2024, Messina, December 2-3, 2024. (oral communication)
- C4. Giovanni Bella, Marco Milone, Giuseppe Bruno, Antonio Santoro, *Hetero-polymetallic dithiooxamide based systems: synthesis and DFT-guided NMR analyses*. II virtual symposium on pericyclic reactions and synthesis of carbo- and heterocyclic systems, November 28-29, 2024. (oral communication)
- C5. Giovanni Bella, Marco Sebastiano Nicolò, Emanuele Luigi Sciuto, Sabrina Conoci, *Amplification strategies for the labeling and detection of infectious agents by means optical sensing*. XIII National Conference on Sensors and Microsystems. Trento, February 12-14, 2025. (poster)
- C6. GiovanniBella, Emanuele Luigi Sciuto, Neeraj Yadav, Paolo Calorenni, Alberto Giacobbe, Laura Maria De Plano, Salvatore Oddo, Cristina Potrich, Leandro Lorenzelli, Meryam Chelly, Giovanni9 Neri, Sabrina Conoci. *Point-of-care sensor for the electrochemical detection of miRNA biomarker of Alzheimer's disease*. XIII National Conference on Sensors and Microsystems. Trento, February 12-14, 2025. (poster)

PARTICIPATION IN EDITORIAL COMMITTEES OF SCIENTIFIC JOURNALS

- D1. Guest Editor of Special Issue "Advances in Crystal Material: Design, Characterization, and Applications" Materials (ISSN 1996-1944), Advanced Materials Characterization (2022);

Reviewer Activity

D2. Reviewer activity for Chemistry - A European Journal, SOURCE-WORK-ID: 3b12806f-c131-4068-8792-b9271cceedf
Convening organization Wiley-VCH (Weinheim, DE).

Messina, February 21.