

Curriculum Vitae – Pietro Tordi

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Nationality Italian

Address

- Institut de Science et d'Ingénierie Supramoléculaires (ISIS), University of Strasbourg & CNRS, 8 Allée Gaspard Monge, 67000 Strasbourg (FR)

Current position

2025- Postdoctoral researcher. Institut de Science et d'Ingénierie Supramoléculaires (ISIS), University of Strasbourg & CNRS. Topic: Biopolymer-Enabled Soft Electronics. Supervisor: Prof. Paolo Samorì

Education

2022-2025 PhD in Chemical Sciences. Joint degree between the University of Florence (IT) and the University of Strasbourg (FR). Topic: Biopolymer-based functional materials for sensing and energy storage. Supervisors: Prof. Massimo Bonini and Prof. Paolo Samorì

2020-2022 Master's Degree in Supramolecular Chemistry, Materials and Nanosystems, University of Florence (IT). 110/110 cum laude

2017-2020 Bachelor's Degree in Chemistry, University of Florence (IT). 107/110

Publications ([Google Scholar](#))

- [1] **Tordi, P.**; Tamayo, A.; Jeong, Y.; Han, B.; Al Kayal T.; Cavallo A.; Bonini, M.; Samorì, P. Fully Bio-based Gelatin Organohydrogels via Enzymatic Crosslinking for Sustainable Soft Strain and Temperature Sensing. *Adv. Funct. Mater.* **2025**, e20762. * Featured in *Hot Topic: Wearable Sensors*.
- [2] Jeong, Y. *; **Tordi, P.** *; Tamayo, A.; Han, B.; Bonini, M.; Samorì, P. Mimicking Synaptic Plasticity: Optoionic MoS₂ Memory Powered by Biopolymer Hydrogels as a Dynamic Cations Reservoir. *Adv. Funct. Mater.* **2025**, e09607. * Equal contribution.
- [3] **Tordi, P.**; Montes-García, V.; Tamayo, A.; Bonini, M.; Samorì, P.; Ciesielski, A. Ionically Tunable Gel Electrolytes Based on Gelatin-Alginate Biopolymers for High-Performance Supercapacitors. *Small.* **2025**, 21 (33), 2503937. * Featured in *Hot Topic: Batteries and Supercapacitors*.
- [4] **Tordi, P.**; Gelli, R.; Tamantini, S.; Bonini, M. Alginate Crosslinking beyond Calcium: Unlocking the Potential of a Range of Divalent Cations for Fiber Formation. *Int. J. Biol. Macromol.* **2025**, 306, 141196.
- [5] **Tordi, P.**; Ridi, F.; Samorì, P.; Bonini, M. Cation-Alginate Complexes and Their Hydrogels: A Powerful Toolkit for the Development of Next-Generation Sustainable Functional Materials. *Adv. Funct. Mater.* **2025**, 35 (9), 2416390.
- [6] **Tordi, P.**; Tamayo, A.; Jeong, Y.; Bonini, M.; Samorì, P. Multiresponsive Ionic Conductive Alginate/Gelatin Organohydrogels with Tunable Functions. *Adv. Funct. Mater.* **2024**, 34 (52), 2410663. * Featured in *Hot Topic: Organic Electronics*.
- [7] **Tordi, P.**; Gelli, R.; Ridi, F.; Bonini, M. A Bioinspired and Sustainable Route for the Preparation of Ag-Crosslinked Alginate Fibers Decorated with Silver Nanoparticles. *Carbohydr. Polym.* **2024**, 326, 121586.
- [8] **Tordi, P.**; Ridi, F.; Bonini, M. A Green and Sustainable Approach for the Preparation of Cu-Containing Alginate Fibers. *Colloids Surf. Physicochem. Eng. Asp.* **2023**, 677, 132396.

Oral Communications at Conferences

- 2025 39th European Colloid and Interface Society Conference. Bristol (UK), September 7-12
- 2025 E-MRS 2025 Spring Meeting. Strasbourg (FR), May 26 -30
- 2024 9th EuChemS Chemistry Congress. Dublin (IR), July 7 - 11
- 2024 E-MRS 2024 Spring Meeting. Strasbourg (FR), May 27 - 31
- 2023 37th European Colloid and Interface Society Conference. Naples (IT), September 2 - 8
- 2023 E-MRS 2023 Spring Meeting. Strasbourg (FR), May 29 – June 2

Invited Seminars and Institutional Presentations

2025 ISIS Young Scientist Seminar, Institut de Science et d'Ingénierie Supramoléculaires (ISIS), Strasbourg (FR), April 24. Selected by Prof. Paolo Samori as the 2025 representative of the *Nanochemistry Lab*

Awards & Honors

2025 Winner, *Young Researcher Award*, E-MRS Spring Meeting, Strasbourg (Symposium I – Designed and Engineered Soft Materials for Biomedicine and Bioelectronics)

Fellowships & Scholarships

2022-2025 University of Florence PhD Scholarship, Doctorate in Chemical Sciences (XXXVIII cycle). Awarded through public, ranked competition (Rectoral Decree rep. no. 692/2022)

Schools and Special Trainings

2024 6th Italian Soft Days Conference. Florence (IT), July 4 - 5

2023 ISIS Neutron Training Course 2023 (Selected participant). ISIS Neutron and Muon Source (UKRI), Didcot (UK), October 3 - 12

Organization of Scientific Meetings

2024 3rd International Summer School on Science-Based Formulations, Florence (IT), July 1-3 – Member of the organizing committee

Mentoring & Supervision

2023- Mentored four Master's/Bachelor's students. Supervised experimental work, trained in techniques such as hydrogel synthesis, electrochemistry, and materials characterization. Assisted in research planning and thesis writing

Teaching Activity

2024 Teaching assistant. Nanomaterials Laboratory (2nd year, MSc in Supramolecular Chemistry, Materials and Nanosystems), University of Florence – Academic Year 2023/2024. Assisted students during laboratory sessions focused on the synthesis and characterization of nanomaterials

2022 Teaching assistant. Physical Chemistry II (3rd year, BSc in Chemistry), University of Florence – Academic Year 2022/2023. Led problem-solving sessions and assisted students with numerical exercises. Supported exam preparation and helped grade written exams and assignments

Dissemination Activity

2024 Science Outreach Volunteer, OpenLab Scienzestate, University of Florence. Topic: Sound propagation in materials

2022 Science Outreach Volunteer, OpenLab Scienzestate, University of Florence. Topic: 3D-Printing

Media & Outreach Recognition

2025 “Symposium I: Advancing Soft Electronics with Multiresponsive Alginate/Gelatin Organohydrogels” – Inside E-MRS World, Vol. 4, No. 2, p. 17. (September 2025). Feature in the official meeting report showcasing my award-winning presentation. <https://www.european-mrs.com/latest-news-publication/>

2025 “Pietro Tordi's European journey” – ISIS Strasbourg (June 2025). Feature article on my research path and international academic journey. <https://isis.unistra.fr/en/news/>

Active Memberships

2025- Italian Chemical Society (SCI)

2025- Sigma Xi, The Scientific Research Honor Society (*Full Member Status*)

Skills & Expertise

- Materials design and synthesis: soft nanostructured and hybrid systems, ionically crosslinked hydrogels, biopolymer-based functional materials
- Physico-chemical and spectroscopic characterization: SAXS, XPS, FTIR, UV-Vis, Raman, DSC, TGA, SEM, mechanical testing, rheology
- Electrochemical and optical investigations: cyclic voltammetry, impedance spectroscopy, galvanostatic charge–discharge, studies of light-responsiveness in electrical properties
- Applications: multifunctional hydrogels for gel polymer electrolytes, soft electronics, energy storage, and sensing devices
- Languages: Italian (native), English (fluent), French (basic)