



Chiara Taticchi

Postdoctoral Researcher

ABOUT ME

I received my MSc in Photochemistry and Molecular Materials (*cum laude*) in 2019 from the University of Bologna. Under the supervision of Prof. Alberto Credi, I obtained my PhD in Chemistry at the University of Bologna in June 2023. Since February 2023, I have been a postdoctoral researcher in the same research group. My research interests are focused on the characterization of light-activated artificial molecular machines based on mechanically interlocked molecules (MIMs) and diazene photoswitches for the development of photochromic materials.

EXPERIENCE

Postdoctoral Researcher

- Alma Mater Studiorum - Università di Bologna | Bologna
Feb 2023 - Present

Design and characterization of molecular and supramolecular photoactive devices and materials based on azobenzene and heteroazoarene photoswitches.

Key Projects

- Light-driven non equilibrium self-assembly of complexes between cyclodextrin and azobenzene guests.
Manuscript in preparation
- Autonomous light-driven molecular rotor based on azoimidazolium cations.
Manuscript in preparation
- Evolution of a light-driven molecular pump: a molecular reservoir.
Manuscript in preparation

EDUCATION

PhD in Chemistry

- Alma Mater Studiorum - Università di Bologna | Bologna
2019-2023
Supervisor: Prof. Alberto Credi
Cosupervisor: Prof. Stefano Zacchini

Design and characterization of molecular and supramolecular photoactive devices and materials based on azobenzene and heteroazoarene photoswitches.

Key Projects

- Evolution of a light-driven molecular pump:
 - Photochemically-driven rotary motor based on a catenane architecture.
 - Artificial molecular sewing machine.

PERSONAL INFO

 16-06-1994

 Italian

CONTACT

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 Via Gobetti, 85, 40129,
Bologna, Italy (Work)

SOFT SKILLS

- Creativity
- Communication
- Teamwork
- Meeting deadlines
- Critical thinking

LANGUAGES

Italian ● ● ● ● ●
English ● ● ● ● ●

TECHNICAL SKILLS

Techniques

- UV-vis absorption and emission spectroscopy.
- Stopped-Flow spectroscopy.
- CD spectroscopy.
- Lifetime measurements (TCSCP).
- Transient absorption spectroscopy.
- NMR spectroscopy
- Optical microscopy
- Solid-state characterization.

Data analysis softwares

- Origin.
- Berkeley Madonna.
- HyperQuad.

Illustration softwares

- Adobe Illustrator.
- Blender

- A new class of photoswitches, the arylazoimidazolium cations and their implementation in a light-effected supramolecular pseudorotaxane in water.
- A new class of photoswitches, the azo-oligothiophes, to investigate the interplay between photoisomerization and electrical conductivity properties at single molecule level.
Manuscript in preparation

MCs in Photochemistry and Molecular Material

- Alma Mater Studiorum - Università di Bologna | Bologna
2016-2019
Supervisor: Prof. Alberto Credi
Cosupervisor: Prof. Serena Silvi

Stability study of photoactivated pseudorotaxanes like prototypical systems of molecular pumps.

Final grade: 110/110 *magna cum laude*.

BCs in Chemistry

- Università degli Studi di Perugia | Perugia
2013-2016
Supervisor: Prof. Alceo Macchioni

Study of catalyzed water splitting by a Ir(III) organometallic complexes

Final grade: 110/110 *magna cum laude*.

PUBLICATIONS

Articles

- F. Nicoli*, C. Taticchi*, S. Corra, M. Tranfić Bakić, M. Baroncini, S. Silvi, J. Groppi, and A. Credi, "An Artificial Molecular Pump Powered By Light". Just accepted on *Angewandte Chemie International Edition*
- F. Nicoli,* C. Taticchi,* E. Lorini, S. Borghi, F. Aleotti, S. Silvi, A. Credi, M. Garavelli, L. Muccioli, M. Baroncini, M. Curcio, "Wavelength-steered directional rotation in an autonomous light-driven molecular motor", *Nature Chemistry* **2026**.
DOI: 10.1038/s41557-025-02045-x
- B. Sachini, C. Taticchi, M. Baroncini, S. Corra, A. Credi, "Light-driven molecular pumps: entanglement of thermodynamic and kinetic effects in the photocontrolled threading-unthreading of pseudorotaxanes", *Organic & Biomolecular Chemistry* **2025**, 23, 9171.
DOI: 10.1039/D5OB01154J
- I. Neira,* C. Taticchi,* F. Nicoli,* M. Curcio, M. D. Garcia, C. Peinador, S. Silvi, M. Baroncini, A. Credi, "Light-driven ratcheted formation of diastereomeric host-guest systems", *Chem* **2025**, 11, 102375.
DOI: 10.1016/j.chempr.2024.11.013.

Note: The symbol * denotes equal contribution as first author.

Review

- LC. Taticchi, M. Curcio, S. Corra, "Autonomous Artificial Molecular Motors and Pumps", *ChemSystemsChem* **2025**, 7, e202400101. DOI: 10.1002/syst.202400101.
- L. Andreoni, M. Baroncini, J. Groppi, S. Silvi, C. Taticchi, and A. Credi, "Photochemical Energy Conversion with Artificial Molecular Machines", *Energy Fuels* **2021**, 35, 18900–18914. DOI: 10.1021/acs.energyfuels.1c02921.
- L. Andreoni, M. Baroncini, J. Groppi, S. Silvi, C. Taticchi, and A. Credi, "Photochemical Energy Conversion with Artificial Molecular Machines", *Energy Fuels* **2021**, 35, 18900–18914. DOI: 10.1021/acs.energyfuels.1c02921.

Book chapter

- A. Credi, S. Silvi, M. Baroncini, L. Andreoni, and C. Taticchi, "Photochemically driven molecular machines based on coordination compounds", Reference is *Comprehensive Inorganic Chemistry III (3rd Ed.)* J. Reedijk, K. Poeppelmeier (Eds.), **2023**, Vol. 8, Ch. 10, pp. 417–438, Elsevier, Waltham (USA). DOI: 10.1016/B978-0-12-823144-9.00094-7.

CONFERENCES CONTRIBUTIONS

- **ISMSC2025** - International Symposium on Macrocyclic and Supramolecular Chemistry (Kyoto, Japan)
"Light-driven ratcheted formation of diastereomeric host-guest systems", poster presentation.
- **IPM2024** - Italian Photochemistry Meeting (Rome, Italy)
"Photoactive peptides", flash oral communication.
- **Mach5 2024** - (Bertinoro, Italy)
"Wavelength-steered directional rotation in an autonomous light-driven molecular motor", invited speaker.
- **PhotoIUPAC 2024** - (Valencia, Spain)
"Light-driven ratched formation of diastereomeric host-guest systems", poster presentation.
- **IPM2023** - Italian Photochemistry Meeting (Sestri Levante, Italy)
"Toward photoinduced reversible switching of charge mobility in the solid state", flash oral communication.
- **APC2023** - 12th Asian Photochemistry Conference (Melbourne, Australia)
"Toward photoinduced reversible switching of charge mobility in the solid state", invited speaker.
- **CoffeTalk@ISOF2023** (Bologna, Italy)
"Diazene Photoswitches in Artificial Molecular Machines and Light-Effectuated Materials", invited speaker.
- **ICP2023** - The 31st International Conference on Photochemistry (Sapporo, Japan)
"Toward photoinduced reversible switching of charge mobility in the solid state", oral communication.

- **IPM2022** - Italian Photochemistry Meeting (Ferrara, Italy)
"Toward an autonomous photochemically driven rotary motor based on a catenane", flash oral communication.
- **EuChemS2022** - 8th EuChemS Chemistry Congress (Lisbon, Portugal)
"Toward an autonomous photochemically driven rotary motor based on a catenane", oral communication.
- **SupraChem2022** (Mainz, Germany)
"Toward an autonomous photochemically driven rotary motor based on a catenane", oral communication.
- **ICP2021** - The 30st International Conference on Photochemistry (Virtual Conference)
"Toward an autonomous photochemically driven rotary motor based on a catenane", poster presentation.