DAVIDE RAVELLI - CURRICULUM VITAE

PERSONAL INFORMATION

RAVELLI, Davide
Date of birth: April 29th, 1984
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Publications: **129** *h*-index: **44**

EDUCATION

2008 – 2012 Ph.D. in Chemical Sciences (XXIV cycle), Department of Chemistry, University of Pavia, Italy; PhD Supervisor: Prof. Angelo ALBINI *(Awarded: January 20, 2012)*.

2006 – 2008 M.Sc. (Laurea Specialistica, *cum laude*) in Chemistry (majors: Organic Chemistry and Physical Chemistry), Department of Chemistry, University of Pavia, Italy.

2003 – 2008 Undergraduate student at Collegio Ghislieri and IUSS (School of Advanced Studies), Pavia, Italy.

CURRENT AND PREVIOUS POSITIONS, FELLOWSHIPS

Since 2022 **Associate Professor**, Department of Chemistry, **University of Pavia**, Italy. In July 2020, I obtained the **National Scientific Qualification** (**Abilitazione Scientifica Nazionale - ASN**) for the role of Full Professor.

2019 – 2021 **Tenured Assistant Professor** (**RTD-B**), Department of Chemistry, **University of Pavia**, Italy. During this period, I have been appointed as **Visiting Scientist** in the group of Prof. S. R. Waldvogel (**Johannes Gutenberg University**, Mainz, Germany; March-April 2019).

2016 – 2018 **Non-tenured Research Assistant** (**RTD-A**), Department of Chemistry, **University of Pavia**, Italy; I obtained this position in November 2015 as the leader of the SIR (**Scientific Independence of Young Researchers**) project "Organic Synthesis via Visible-Light Photocatalytic Hydrogen Transfer" (Proposal Code: RBSI145Y9R) funded by MIUR (Italian Ministry of Education, Universities and Research). During this period, I have been appointed as **Visiting Scientist** in the group of Prof. R. R. Knowles (**Princeton University**, NJ, USA; March-May 2017).

2013 – 2015 **Post-Doctoral Research Fellow** – Fondazione Cariplo project: "Antitumorals: Photochemistry beyond enynes" at the Department of Chemistry, **University of Pavia**.

2012 **Post-Doctoral Research Fellow** – Fondazione Cariplo project: "New innovative nanostructure materials for lithium-air, high-energy rechargeable batteries" at the Department of Chemistry, **University of Pavia**.

2008 – 2011 **Visiting PhD student** at: (*i*) **Institut de Chimie des Substances Naturelles** (**ICSN**) at the CNRS in Gif-sur-Yvette, Paris, France (with Prof. E. Lacôte; September-October 2011); (*ii)* **University of Padova** (with Prof. A. Bagno; February 2010); (*iii)* LCA-lab srl, spin-off at the **ENEA** center (**Italian National Agency for New Technologies, Energy and Sustainable Economic Development**) in **Bologna** (with Ing. P. Neri; December 2008-January 2009).

TEACHING ACTIVITIES

2022-2023 **Professor in charge** of "**Designing our Sustainable Future: the Redemption of Chemistry**" course at the IUSS (School of Advanced Studies) Pavia (25 hrs of teaching activity).

2020 **Professor in charge** of "**Modelling molecular properties and reactivity**" course at the IUSS (School of Advanced Studies) Pavia (19 hrs of teaching activity).

Since 2019 **Professor in charge** of "**Photocatalysis in technology and synthesis: past, present and future**" course for the PhD course in "Chemical and Pharmaceutical Sciences and Industrial Innovation" at the University of Pavia (24 hrs of teaching activity per year).

Since 2019 **Professor in charge** of the "**Organic Chemistry and Laboratory**" course for the degree in "Biotechnology" at the University of Pavia (72 hrs of teaching activity per year).

Since 2019 **Professor in charge** of the "**Organic Chemistry**" course for the degree in "Conservation and Restoration of Cultural Heritage" at the University of Pavia (12 hrs of teaching activity per year).

Since 2015 **Professor in charge** of the "**Green Chemistry"** course for the master's degree in "Chemistry" at the University of Pavia (48 hrs of teaching activity per year).

Since 2009 **Professor in charge**: Organic Chemistry lectures (*ca.* 30 hrs teaching + laboratory activities per year) for the Italian Team participating at the **International Chemistry Olympiads** (**IChO**); activity suspended in the 2020-2022 period due to COVID-19 pandemic.

2008-2015 **Complementary teaching activity**: I have also been involved in several supporting activities through **assistance** in **laboratory courses** and **lectures** (for the degrees in "Chemistry" and "Biological Sciences" at the University of Pavia).

ORGANISATION OF SCIENTIFIC MEETINGS

"Italian Photochemistry Meeting 2023", Sestri Levante, Italy (December 2023).
"Italian Chemical Society Green Chemistry Workshop 2022", Pavia, Italy (June 2022).
"Organic chemistry day in Pavia", Pavia, Italy (Organizing Committee member in 2014, 2017 and 2018).

INSTITUTIONAL RESPONSIBILITIES

Since 2015 Faculty member, Department of Chemistry, University of Pavia, Italy. Since 2018, I have been appointed "junta member" and "workers' safety representative" (RLS).

COMMISSIONS OF TRUST

Since 2020 I have been involved as **external reviewer** in several procedures for **funding schemes** promoted by different institutions at an international level (Petroleum Research Fund, USA; European Research Council; Agence Nationale de la Recherche, France; Fonds de la Recherche Scientifique, Belgium; Dutch Research Council, The Netherlands; National Science Centre, Poland; Fondazione Cariplo, Italy; Hellenic Foundation for Research and Innovation, Greece).

Since 2018 I have been involved in several procedures for the attribution of the PhD degree in Chemistry, either as **external reviewer** (Universitat Rovira i Virgili, Tarragona, Spain; University of Genova, Italy; NIPER, India) or as **committee member** (University of Pavia, Italy; University of Girona, Spain; University of Parma, Italy).

Since 2016 **Thesis examiner** for the degree in Chemistry, University of Pavia.

Since 2014 I have been serving as **reviewer** for several international peer-reviewed journals, with > **620 verified reports** (> 100 reviews in 2023). For full details, see: LINK

INVITED SEMINARS and LECTURES

2024 Invited lecture – **CINMPIS DAYS 2024**, Bari, Italy (to be held on 7-9 February).
2023 Invited lecture - **IDK Meeting (Photo-Electro Catalysis)**, Regensburg, Germany.
2022 Invited lecture - **11th Singapore International Chemistry Conference**, Singapore.
2022 Invited lecture - **3rd International Conference on Hydrogen Atom Transfer**, Rome.
2021 Invited lecture - **ASSOS, Athens Summer School on Organic Synthesis**, Athens (on-line).
2019 Invited seminar - **University of Regensburg**, Regensburg, Germany. Host: prof. B. König.
2018 Invited lecture - **10th Singapore International Chemistry Conference**, Singapore.
2018 Invited lecture - **Ischia Advanced School of Organic Chemistry (IASOC)**, Napoli, Italy.
2018 Invited lecture - **7th European Chemistry Congress (EuCheMS)**, Liverpool, UK.
2018 Invited lecture - **EuCheMS Young Investigator Workshop 2018 (YIW 2018)**, Oxford, UK.
2018 Invited seminar - **Mainz University**, Germany. Host: prof. T. Opatz.
2017 Invited lecture - **XXIV Congresso Nazionale della Società Chimica Italiana 2017**, Paestum (SA), Italy.
2017 Invited seminar - **Technische Universiteit Eindhoven** (TU/e), The Netherlands. Host: prof. T. Noël.
2016 Invited seminar - **University of Padova**, Italy. Host: prof. G. Licini.
2016 Invited lecture - **Joint Congress of the French/Italian Photochemists and Photobiologists**, Bari, Italy.
2016 Invited seminar - **Linz University**, Austria. Host: prof. G. Knör.
2015 Invited lecture - **Avogadro Colloquia** "Chemistry and Light", Roma, Italy.
2008 Invited lecture - **Nuovi Orientamenti nella Sintesi Organica (XXII Ed.)**, Milano, Italy.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

Since 2019 "American Chemical Society" (ACS) member.
Since 2009 "Italian Society of Chemistry" (SCI) member; affiliated to "Green Chemistry" and "Catalysis" groups.
Since 2009 "Italian Group of Photochemistry" (GIF) and "European Photochemistry Association" (EPA) member.

RESEARCH INTERESTS

My main research interests are i) the behaviour of **(photogenerated/electrogenerated) high-energy species** (radicals, radical ions, diradicals, *etc*.) and ii) the study of **photochemical/photocatalytic reactions** and the attending applications in various fields, particularly in **sustainable organic synthesis**. I am deeply interested in the discovery of methods for **easy access to valuable intermediates (mainly organoradicals)** and their trapping. Over the last few years, I have been involved in the study of **hydrogen atom transfer** (**HAT)** reactions promoted by excited molecules, such as polyoxometalates (I am widely considered one of the main experts in decatungstate $[W_{10}O_{32}]^{4-}$ chemistry), organic molecules (aromatic ketones, such as fluorenone and anthraquinones) and other derivatives (particularly, the uranyl cation and metal-oxo porphyrin complexes). More recently, I became interested in **electrochemistry as a sustainable synthetic approach**. My experimental activity is supplemented by **theoretical work** (exploiting quantum chemical calculations) aimed at streamlining the processes under investigation. Furthermore, I am interested in the **evaluation and minimization** of the **environmental impact of chemical processes** by means of green metrics tools (EATOS, LCA), also through the development of continuous flow photochemical reactions.

SCIENTIFIC ACTIVITY

To date, I have co-authored **129 publications** (**25 as first author, 44 as corresponding author**) in international peer-reviewed journals (including **13 chapters in multi-authors books**), mainly in the areas of sustainable organic chemistry and photochemical processes. I am also **co-editor of the books** *Photoorganocatalysis in Organic Synthesis* (World Scientific Publishing Company, **2019**) and *Biomass Valorization: Sustainable Methods for the Production of Chemicals* (Wiley, **2021**). My articles have been cited > **9400 times** (total impact factor [IF] ~ **1100**, mean IF ~ **9.7** ***h*-index** factor = **44** [Scopus database; data from JCR2023]). I have also been **special issue guest-editor** for the journals *Molecules* (2019) and *Photochem. Photobiol. Sci.* (2022). My original contributions have been recognised by other leading scientists in the field, since I have been **invited to contribute to special issues**, mainly on **photocatalysis** for: *J. Org. Chem.* (2016; Prof. T. P. Yoon), *Eur. J. Org. Chem.* (2017; Prof. B. König), *Eur. J. Org. Chem.* (2020), *Green Chem.* (2020), *ChemCatChem* (2023; Proff. L. Næsborg, B. Pieber, O. Wenger), *Solar RRL* (2023) and *Adv. Mater.* (2023). I have also been **invited to write chapters** for the books: *Late-Stage Fluorination of Medicinal Targets and Biologically Relevant Substrates* (2018), *Targets in Heterocyclic Systems* (2018), *Specialist Periodical Reports - Photochemistry* (2023), *Handbook of CH-Functionalization* (2023) and *Encyclopedia of Green Chemistry* (expected 2024).

GRANTS AND AWARDS

My high-level scientific profile is also demonstrated by the **awards** I have received, the invitations to deliver seminars and my contributions to both national and international conferences, including several **oral presentations** (often on invitation) that I have delivered. Since my affiliation to the Department of Chemistry at the University of Pavia (end 2015), I have **secured fundings for a total amount of *ca.* 1 M€** in the role of PI or PI of local unit. Starting from 2014, I have also been **PI of several computational projects** (around 1 project per year with access to high-performance computing infrastructures) granted by **CINECA** (Consorzio Interuniversitario del Nord-Est per il Calcolo Automatico) through the competitive **ISCRA** (Italian Super Computing Resource Allocation) calls.

- 2023 **Young Investigator Award** promoted by the **European Photochemistry Association** (**EPA**)
- 2021 **PI of the Pavia unit** in the **PATHFINDEROPEN 2021** project, entitled *Reaction robot with intimate photocatalytic and separation functions in a 3-D network driven by artificial intelligence (CATART)*, funded by **EISMEA** (European Innovation Council and SMES Executive Agency; Code: 101046836; funding: € 367,500)
- 2021 **PI of the Pavia unit** in the **PRIN 2020** project, entitled *Combined Electrochemical and Light-Driven Processes for the Sustainable Synthesis of Added-Value Molecules (ELECTROLIGHT4VALUE)*, funded by **MUR** (Italian Ministry of Universities and Research; Code: 2020927WY3; funding: € 114,426)
- 2019 PI of the **Rafforzamento-ERC** project, entitled *Electrochemical Strategies applied to Organic Synthesis (ELECTROLIGHT)*, funded by **Fondazione CARIPLO** (Code: 2018-2627; funding: € 57,800)
- 2018 Selected as one of the finalists for the **European Young Chemist Award (EYCA**)
- 2017 **Ciamician Medal** promoted by the Organic Chemistry section of the **Italian Society of Chemistry** (**SCI**)
- 2017 **Vincenzo Caglioti** international award promoted by the **Accademia Nazionale dei Lincei**
- 2016 **GIF Young Investigator Award** promoted by the **Italian Photochemistry Group** (**GIF**)
- 2015 PI of the **SIR** (Scientific Independence of Young Researchers) project, entitled *Organic Synthesis via Visible Light Photocatalytic Hydrogen Transfer (PHANTASY)*, funded by **MIUR** (Italian Ministry for Education, University and Research; Code: RBSI145Y9R; funding: € 423,500)
- 2015 **Reaxys SCI Young Researcher Award 2015**; 3rd place in the Life Sciences, Medicinal and Organic Chemistry category, promoted by **Elsevier** and **Gruppo Giovani** of the **SCI**
- 2012 Special mention in the 2012 edition of "**Premio Levi**", promoted by **Gruppo Giovani** of the **SCI**
- 2008 "Premio GIC – Tesi di laurea 2008" (**GIC Award** for master's degree thesis, 2008) promoted by the **Interdivisional Group of Catalysis** (**GIC**) of the **SCI**
- 2008 "Premi per Tesi di Laurea Specialistica in Discipline Chimiche" (**Chemical Sciences Award** for master's degree thesis) promoted by **Federchimica**

Pavia, May 9th, 2024