

Pietro Tundo's CV

Personal Information

Researcher ID F-7871-2015, ORCID: <https://orcid.org/0000-0002-8167-356X>
<http://www.unive.it/data/persona/5591778>

Education and History of Employment

- 1969: Degree on Chemistry, University of Bologna (Italy), 1st class honors.
- 1972 - 1986: Università degli Studi di Torino (Italy). Assistant and then Associate Professor.
- 1986 - 1989: Università degli Studi di Messina (Italy). Full Professor.
- 1989 - present: Ca' Foscari University of Venice (Italy). Full Professor of Organic Chemistry, now retired.
- 2016: Senior Associate Professor at the Institute for the Organometallic Compounds, CNR. Florence.
- In the years 1979 - 1983: Guest researcher at T&M University, College Station (Texas), Syracuse University (New York) and Clarkson College of Technology, Potsdam (New York).

Scientific Leader Profile

Professor Tundo is a scientist with a high international profile. He published 400 Papers and 40 Patents, one single-Author book, about 20 Edited books: h-index 40 since 1985, 5233 citations (ISI). http://www.unive.it/data/persona/5591778/pubb_tipo. He has made substantial improvement in a number of fields of chemistry. He invented a continuous-flow system based on phase-transfer catalysis (Gas-Liquid Phase Transfer-Catalysis, GL-PTC) which is currently used in industry for the manufacturing of aryl ethers and other fine chemicals. The many fields of research the Nominee has learnt and produced results on: supramolecular chemistry, phase-transfer catalysis, continuous-flow processes, polymerized vesicles, photo-induced processes, artificial photosynthesis, catalysis and zeolites, detoxification methods, hydrodehalogenation reactions, green chemistry and industrial processes. In the last 20 years his researches are directed toward carbonate chemistry: dialkyl carbonates, no more synthesized from phosgene, are inherently safe compounds for green syntheses and sustainable applications; the Nominee is the foremost academic researcher having published the greatest number of scientific papers in this field. A selection of the reaction pathways reported for the first time by the Nominee is:

- The of mono-methylation of CH₂ acidic compounds: this reaction led to patents in Europe, USA, and Japan and concerns the production of anti-inflammatory drugs such as ibuprofen, ketoprofen, naproxen;
- New pathways and cyclisation reactions based on organic carbonates for fine chemicals (now utilized by ICI, Givaudan, for fragrances synthesis;)
- New reaction pathways for the synthesis of cyclic urethanes (1,3-oxazinan-2-ones).
- How to domesticate war chemistry: macrocyclic aza-ethers and a new family of polymers from mustard carbonates (no more vesicant compounds).

Prof. Tundo has directed and coordinated many research collaborations with industry; Enichem, ICI, Givaudan, Dow, Croda, Roquette, etc., Italian and EU scientific and educational Projects.

Membership of Advisory and Editorial Boards of International Journals

Below a selection is reported.

- 2000 - 2013: Int. Ed. Board- RSC₂ Green Chemistry.
- 2007 - 2015: Int. Advisory Board ChemSusChem, Wiley 2014.
- 2014: Editor in Chief (with John Andraos) of the new Series of Book "Green Syntheses", CRC Press.
- Co-Editor in Chief of the Series of Books "Green Chemistry and Sustainable Technology", Springer.
- 2006 - 2010: Director of the bimonthly magazine for Secondary Schools "Green. La Scienza al Servizio dell'Uomo e dell'Ambiente".
- INCA Green Chemistry Series (volumes I-XI): a book series on the research and applications of Green Chemistry in different countries, Italy, Africa, Russia, Argentina; three volumes dedicated to the lectures of the Green Chemistry Summer Schools. A few volumes of the INCA series were sponsored by IUPAC, Intas, Wiley and Springer.

Honours

- 1982: American Chemical Society, Kendall Award (with Janos Fendler) for his synthesis of polymerized vesicles.
- 1992: Federchimica (Italian association of chemical industries). Award on "An Intelligent Future" for his sole-author book: *Continuous flow methods in organic synthesis (1991)*, Ellis Horwood Ltd.

Institutional Responsibilities, Commission of Trust, Membership of Scientific Societies

Founder, Chair or Leader

- Professor Tundo has founded in 1993 and directed the Interuniversity Consortium "Chimica per l'Ambiente" (Chemistry for the Environment), INCA, embodying 31 Italian Universities. The Laboratory of INCA at Marghera-Venice and other seven INCA Laboratories in Italy (Palermo, Catania, Napoli, Lecce, Bari, Cengio, Cagliari). Over the years 1998 - 2007 INCA was assessed three times by CHEPS (Center for Higher Education Policy Studies) University of Twente NL. INCA's activities were evaluated by CIVR (Italian Ministry of Research) suggesting that INCA had the scientific leadership in Italy in the area of "Science and technologies for the sustainable development and governance".
- 2005-2010: He founded the bimonthly science magazine *Green, La Scienza al servizio dell'uomo e dell'ambiente*, distributed in Italian scientific high schools (25.000 copies every issue) and, upon agreement with the Italian Ministry of Education, the related "Premio Green Scuola".
- 2003: He launched and carried the first Italian course entirely dedicated to women, aiming to strengthen their career advancement on sustainable chemistry in the university. 25 Young researches attended and concluded their experience with an internship abroad.
- May 2009: organization of the "Festival della Chimica Verde", which was held in Lecce (Italy).
- 2005 - 2015: Chairman of MEGREC (Mediterranean Green Chemistry Network). This voluntary association of Green Chemistry Institutions of Mediterranean Countries (Egypt, Italy, Morocco, Tunisia, Algeria, Serbia, Greece and Spain) <http://virgo.unive.it/megrec/> was founded in Belgrade on 2005 and represented the UNESCO UNITWIN No. 731. The latter was based at Ca' Foscari; in cooperation with MEGREC, this UNITWIN promoted and managed many research and educational projects directed forward sustainability with many Conferences and Workshops.
- 2018 - present: Coordinator of UNESCO "Green Chemistry Excellence from Baltic Sea to Mediterranean Sea and Beyond" UNITWIN.
- 2000: Founder and Chairman of the Working Group on "Green and Sustainable Chemistry" of EuCheMS, the European Association for Chemical and Molecular Sciences, which was upgraded in 2015 into the current EuCheMS Division on Green and Sustainable Chemistry.
- 1998: The Nominee established the first Green Chemistry Postgraduate Summer School in the world, which brought innovating in science education and has provided more than one thousand of students with a solid foundation in green chemistry (contributions to Goal 4 Quality Education). The first 10 Summer Schools were supported by INCA and EU. Subsequent 11th and 12th Editions were endorsed by IUPAC. The 13th Edition of the Summer School will be held next Summer in Venice, Italy - <https://www.greenchemistry.school/>. Their Motto is: Sustainability through green chemistry. The Summer Schools stand out for their interdisciplinarity, not just in the selection of teachers and students (carefully selected in order to have high level classes able to understand the importance of sustainability) but also for the main topics discussed (chemistry, biology, medicine, engineering, physics).
- 2006: Professor Tundo established the biannual series of IUPAC International Conferences on Green Chemistry (https://en.wikipedia.org/wiki/International_Conference_on_Green_Chemistry), the first of which was held in Dresden (2006) and then in Moscow, Ottawa, Foz de Guazu, Durban, Venice, Moscow, Bangkok (2019). The next one will be in Athens (2022).
- 2020 - present: Founder and President of the *Green Sciences for Sustainable Development* Foundation, GSSD - <https://www.gssd-foundation.org/>. GSSD is a non-profit organization recognized by the Italian Law "Personalità Giuridica".

Participation to National and International Organizations

- 2002 - 2004: Professor Tundo was responsible of two “Progetti di grande rilevanza” granted by the Italian Ministry of Foreign Affairs, with Algeria (2006 - 2008) and Argentina.
- 2002 - 2004: Coordinator of two Intas Projects (EU) with Lomonosov University of Moscow and RAS.
- 5-7 December 2005: upon appointment by the Italian Minister of Research (L. Moratti), prof. Tundo organized the Carnegie Group Meeting between the Ministers of Education and Research of G8 Countries in Venice (Italy).
- 2013: he promoted the foundation of the Italian National Committee of CNR for IUPAC of which he was the president for 4 years. <https://www.iupac.cnr.it/>. Member of this body till the present.
- 2007 - 2009: President of the IUPAC Division III (Organic and Biomolecular Chemistry) - https://iupac.org/who-we-are/divisions/division-details/?body_code=300.
- 2015 - 2022: Chair IUPAC Interdivisional Committee on Green Chemistry for Sustainable Development – <https://iupac.org/body/041>.
- 2015 - 2019: Member of the Bureau of IUPAC.
- In IUPAC he has been responsible of 21 projects (<https://iupac.org/member/pietro-tundo/>) all focused at sustainability through green chemistry. Presently, he is chairing the Project “Metrics for Green Syntheses” (no. 2017-030-2-041), aimed to avoid greenwashing https://iupac.org/projects/project-details/?project_nr=2017-030-2-041 and the “Assessment of the Contribution of IUPAC Projects to the Achievement of the United Nations Sustainable Development Goals” (2020-011-2-041) https://iupac.org/projects/project-details/?project_nr=2020-011-2-041.
- July 8th, 2019: Promoter and Organizer of the Special Symposium: Chemistry Addressing the UN-17 Sustainable Development Goals at IUPAC General Assembly and Congress, Paris.
- 1996 – 2020: Tundo is Italian Representative on OECD for Sustainable Chemistry OECD's Programme. He organized the first OECD Workshop: Venice, 15-17 October 1998 (part 1 of the workshop proceedings: [Proceedings of the OECD Workshop on Sustainable Chemistry - Part 1](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&cote=en/v/jm/mono(99)19/part3); part 3: [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&cote=en/v/jm/mono\(99\)19/part3](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&cote=en/v/jm/mono(99)19/part3)). Presently, he is the Italian representative in the OECD Working Party on Risk Management.
- UNESCO delegate at the Small Island Developing State, SIDS, Workshop: “Mobilizing science and knowledge systems for the sustainable development of SIDS”, Praia, Cabo Verde, 25-26 July 2019.
- Professor Tundo is member of the UNEP panel based in Geneva (Switzerland) to prepare Manuals for public administration regarding the Green and Sustainable Chemistry, including Education.
- March 17-19, 2020: Prof. Tundo was the EU Expert in the China-EU Workshop on “Clean Production Technologies”, Beijing, organized by the EU Commission.
- 2018 - present: Member of the Scientific Board of the International Sustainable Chemistry Collaborative Centre (ISC₃), Germany.
- 2016 - present: Tundo has participated in many OPCW meetings, expert groups, workshops with the aim to promote and disseminate the peaceful utilization of Chemistry. OPCW sponsored a number of scientific and educational events in the field of Green Chemistry, including summer schools in 2018 and 2020 and the 2016 IUPAC Green Chemistry International Conference.

Entrusted Responsibilities

Over the years, Professor Tundo was entrusted with many institutional responsibilities. Among them: from 1995 to 2005 he was evaluator of a number of industrial projects for the Italian Ministries for Research and for Industry, and evaluator of research Projects (SIR, PRIN and Montalcini, etc.) of the Italian Ministry for Research (2010-2015). He was member of the Evaluation Panel of SUNARE Project, Academy of Finland (2004-2005). On 2004-2006, Tundo was member of the Advisory Board of the Green Chemistry Centre, Monash University, Australia and, on behalf of the European Science Foundation, in 2013-2015 he was Peer Review of Portuguese Foundation for Science and Technology Research Units (2014-2015) and member of the PhD Programmes Evaluation Panel - FCT Portugal.

From 2014 he is Member of the International Jury of the Phosagro/UNESCO/IUPAC Award on Green Chemistry (<http://www.unesco.org/new/en/natural-sciences/science-technology/basic-sciences/chemistry/green-chemistry-for-life/>) and he is chairing the IUPAC- Zhejiang NHU International Award for Advancements in Green Chemistry <https://iupac.org/iupac-zhejiang-nhu-international-award>.