

## Guido Raos – Curriculum Vitae (July 2019)



### Current position and contact Information:

Full Professor of Chemistry

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See also: [http://www.researchgate.net/profile/Guido\\_Raos](http://www.researchgate.net/profile/Guido_Raos)

### Education and career:

Guido Raos graduated in Chemistry *cum laude* at the Università degli Studi di Milano in 1989. From 1989 to 1993 he studied theoretical chemistry at the University of Bristol (UK), where he obtained a Ph.D. on the spin-coupled theory of molecular electronic structure under the supervision of Dr. Joseph Gerratt.

In 1993 he moved to the Politecnico di Milano, first as a student in the “Scuola di specializzazione in scienza dei polimeri” (2 years) and later as a post-doctoral research assistant (2 years), working with Prof. Giuseppe Allegra on polymer statistical mechanics. There he became assistant professor (ricercatore) in 1997, and has been promoted to associate professor in 2007 and to full professor in 2018.

Since 2013, he is a member of the board of the Ph.D. program in Materials Engineering at the Politecnico di Milano.

### Research activities:

The combination of expertise in quantum and statistical physics, molecular modelling and polymer science has allowed Guido Raos to make several contributions the study of functional materials, including theoretical developments, computational studies, and joint theory-experiment studies. Guido's current research interests concern the application of statistical mechanics, quantum chemistry and molecular simulation to material science problems, in particular  $\pi$ -conjugated materials for organic electronics and photovoltaics, molecular and polymeric crystals, polymer nanocomposites, room-temperature ionic liquids, and soft matter in general.

To date, Guido Raos has authored 86 research papers on international refereed journals (researcherid [F-9190-2013](https://orcid.org/0000-0001-7011-4036), orcid [0000-0001-7011-4036](https://orcid.org/0000-0001-7011-4036)). Current citation overview:

- Scopus: H-index 29, 2452 citations (1955 excluding self-citations by all authors);
- Google scholar: H-index 30, 2917 citations.

<https://scholar.google.it/citations?user=NmoHoYYAAAAJ&hl=en&oi=ao>

He has supervised or co-supervised the Ph.D. theses of Carlo Manassero (2002-2005), Valentina Marcon (2003-2006), Margherita Moreno (2005-2008), Tommaso Nicolini (2011-2014), Alberto Baggioli (2012-2015), Yun Gao (visiting student from Tokyo's Institute of Technology, 2015), Alessio David (2017-) and Manuel Antonio Ruíz Rodríguez (2018-), as well as several master theses in chemistry, materials engineering and chemical engineering. He has supervised the post-doctoral work of Mosè Casalegno (Ph.D. University of Milano; 2008-2017), Julien Idé (Ph.D. University of Bordeaux 1; 2012-2014), Alberto Baggioli (Ph.D. Politecnico di Milano, 2018-) and Marta Pasquini (Ph.D. University of Milano; 2018-).

Since 2006, Guido Raos has obtained (either as principal investigator or as co-leading investigator) funding for his research from both public and industrial research contracts, whose overall value exceeds 1 million Euros. Public competitive funding has come MIUR (PRIN), Fondazione Cariplo, INSTM (PRISMA), CECAM and IUPAC. Industrial funding has been obtained through collaborations with Eni, Pirelli, Columbian Chemicals Company, Domo Engineering Plastics, Promox and Lampre.

### **Teaching activities:**

Since becoming assistant professor in 1997, Guido's teaching activity has always comprised some general chemistry courses for first-year engineering students (5-10 CFU's per year). In the current academic year (2018/19), he teaches a 7-CFU course for first-year students in energy/mechanical/aerospace engineering (Bovisa branch of the Politecnico) and a 3-CFU course for third-year students in Civil Engineering and Architecture (Lecco branch of the Politecnico).

In the academic years from 2010/11 to 2012/13, he has also taught a 5-CFU course on "Soft matter simulations" for master students in materials and chemical engineering. Starting in 2019/20, he will teach again a similar course entitled "Molecular modeling of materials".

In the academic years from 2013/14 to 2016/17, he has taught a 5-CFU course on "Advanced Materials Chemistry" (later renamed "Structural Chemistry of Materials") for the master students in materials engineering and nanotechnology.

Guido has been the coordinator of the first edition of an interdisciplinary Ph.D. course on "Simulation of molecular systems for chemistry, materials and biology", held in Politecnico's Lecco branch in June-July 2010. On this occasion, he obtained 4000 Euros of funding from Politecnico's Ph.D. school and another 4000 Euros from Lecco's chamber of commerce. He has participated as a lecturer to several subsequent editions of the same course (2013, 2015 and 2017). He has coordinated again the 2019 edition, receiving approximately 6000 Euros in funding for it. The 2019 edition has become part of the yearly activities of the CECAM-IT-SIMUL node of CECAM and, for the first time, has attracted participation by Ph.D. students coming from outside the Politecnico.

With S. V. Meille, he has coordinated and taught a lecture course on "Structure and statistical properties of polymers" for the Ph.D. students in materials engineering (March 2012, March 2014 and March 2016).

With P. Ossi, he coordinates a course on the "Methods for the compositional analysis and characterization of materials" for the Ph.D. students in materials engineering and related disciplines (2014-). The course consists of three one-day seminar cycles per year (over a period of three years for a Ph.D. student), with invited lectures offered by experts in different techniques. The final evaluation of the students is based on their presentation of one characterization method.

With C. Castiglioni, he has proposed and coordinated an interdisciplinary Ph.D. course on "Science, technology, society and Wikipedia" (June 2016, June 2018 and July 2019). For each edition of the course, he has secured a grant of 5500 Euros from Politecnico's Ph.D. school. The courses are carried out in collaboration with Wikimedia Italia and accredited Wikipedia instructors. During a one-week course, the students are introduced to inner workings of Wikipedia and produce new articles for it (or edit existing ones). For the last edition of the course, he has secured an additional grant of 3000 USD from IUPAC in order to facilitate the participation of other IUPAC members. A fourth edition of the course will take place in June-July 2020.

### **Other activities:**

- Member of the Subcommittee on Polymer Terminology (SPT) of the International Union of Pure and Applied Chemistry (IUPAC) since 2016.

- Representative of the Politecnico di Milano within the board of the CECAM-IT-SIMUL node of the Centre Européen de Calcul Atomique et Moléculaire (2017-).
- Organization (with C. Zannoni and G. Milano) of a CECAM workshop on “Fabrication processes and molecular organization in organic thin films: theory and simulation meet experiments” (Lecco, 17-20 July 2019). The workshop has received 3000 Euros in funding from CECAM and another 3000 Euros from Lampre SpA.
- Organization of several workshops on molecular simulation and engineering (2010, 2015, 2016, 2018). See <https://sites.google.com/site/molsimeng>.
- Twice elected member of the “giunta” (board) of the Department of Chemistry, Materials and Chemical Engineering “G. Natta” (DCMIC) of the Politecnico di Milano (2005-2008 and 2008-2010).
- Member of the External Relations committee of the DCMIC department (2002-2004).
- Reviewer of manuscripts for Nature Materials, Journal of the American Chemical Society, Journal of Physical Chemistry, Macromolecules, ACS Nano, Journal of Organic Chemistry, Langmuir, Journal of Chemical Physics, Chemical Physics Letters, Chem Phys Phys Chem, Soft Matter, Synthetic Metals, Macromolecular Chemistry and Physics, Macromolecular Theory and Simulations, Theoretical Chemistry Accounts, Physics Letters A, etc.
- Reviewer of research proposals for the National Science Foundation (USA), the Austrian Science Fund (FWF), FIRB projects "Futuro in Ricerca", ISCRA-CINECA supercomputing projects, and Independent Research Fund Denmark (DFF).

#### **Awards, recognitions and miscellanea:**

- January-February 2014: national habilitation for the position of full professor in the subject areas of physical chemistry (“03/A2: modelli e metodologie per le scienze chimiche”) and of chemical technologies (“03/B2: fondamenti chimici delle tecnologie”).
- 2010 and 2011: visiting professor at School of Mathematics and the nCATS Centre of the University of Southampton, UK (guest of Profs. Timothy J. Sluckin and Robert J. Wood; one week and three months, respectively).
- Member of the Society of Rheology (USA) since 2007.
- From 2009 until 2018, in parallel to my academic activity, I have been an activist for the improvement of public transport in the Lombardy Region. I regularly participate as spokesperson of the “Comitato Pendolari del Meratese” to the meetings of the “tavoli territoriali” (round tables) which take place at the premises of the Regione Lombardia.
- In 2019, I have been elected for a five-year term within the City Council of the town of Osnago (LC), as representative of the “Progetto Osnago” list.

Milano, 15 July 2019.

Signed: Guido Raos

*Autorizzo il trattamento dei dati personali contenuti nel mio curriculum vitae, in base all’art.13 del D. Lgs. 196/2003.*