

Professor Paolo Fornasiero

BIOGRAPHICAL DATA

September, 2021

Department of Chemical and Pharmaceutical Sciences
University of Trieste
via L. Giorgieri 1
34127 Trieste, Italy



PERSONAL

Born December 5, 1968 in Ruti, Switzerland. Married. One son.

ACADEMIC RECORD

University of Trieste, Chemistry Department - November 1987 to November 1992. B.S.Chem.

University of Trieste, Chemistry Department - November 1993 to October 1996. PhD awarded September 1997.

University of Reading, U.K., Catalysis Research Center - November 1996 to September 1997. Post-doc

TEACHING EXPERIENCE

Full Professor of Inorganic Chemistry, Department of Chemical and Pharmaceutical Sciences, University of Trieste - December 23, 2016.

Associate Professor of Inorganic Chemistry, Department of Chemistry, University of Trieste - December 1, 1996.

Assistant Professor of Inorganic Chemistry, Department of Chemistry, University of Trieste - July 27, 1998.

SCIENTIFIC ACTIVITY

The scientific interests of Professor Fornasiero are in the field of inorganic chemistry, with attention to the design and development of multi-functional metal-oxide nano-systems for their advanced applications in energy related material science and environmental heterogeneous catalysis. The 25 years of his research activity have been dedicated to the development of:

- electro-catalysts for green H₂ production, CO₂ valorization, N₂ activation and H₂O₂ production
- photo-catalysts for solar fuel production, including H₂, and organic synthesis
- advanced catalysts for methane catalytic combustion
- novel photo-catalyst for water depollution
- active materials to be used in solid oxides fuel cells
- new catalysts for the production and purification of hydrogen
- catalysts for the reduction of nitrogen oxides under oxidizing conditions
- innovative materials for catalytic converters

HONORS

- Maria Teresa Messori Roncaglia Award, 2018. Awarded by the *Accademia Nazionale dei Lincei* for "fundamental contribution to environmental catalysis, with particular reference to various polluting emissions in atmosphere, with a short, medium and long-term vision."
- Visiting Professor supported from *Chinese Accademia of Sciences*, 2018. Visiting Scientist Fellowship to spend 2 months at the Dalian Institute of Chemical Physics working with prof. Feng Wang in the Lab of Bioenergy Chemical
- Edoardo Kramer Award, 2017. Awarded by the "Pia Fondazione Edoardo Kramer" and by *Istituto Lombardo Accademia di Scienze e Lettere* (Founded by Napoleon Bonapart), for his recent works on solar fuels, on H₂ as energy vector, on fuel cells and on the transformation of biomasses in fuels, as well as the attention in the development of catalysts for abatement of pollutant emission from conventional vehicles.

- Rudolf Zahradník Lecture, 2017. Honorary lecture part of the "Rudolf Zahradník Lecture Series" at the RCPTM in Olomouc, Czech Republic, established in 2013 in honor of the President of the Academy of Sciences of the Czech Republic and the founding chairman of the Learned Society of the Czech Republic.
- IACS Heinz Heinemann Award, 2016. Awarded by *the International Association of Catalysis Societies* for his remarkable contribution to catalyst science and technology achieved during past four years in the development of novel nanostructured catalysts.
- Chiusoli Gold Medal in Catalysis, 2013. Awarded by the *Italian Chemical Society* to an Italian researcher under 45 years, for his contribution to research in the field of Catalysis
- Nasini Gold Medal in Inorganic Chemistry, 2005. Awarded by the *Italian Chemical Society* to an Italian researcher under 40 years for his contribution to research in the field of Inorganic Chemistry
- Second position in the Start-Up Trieste competition, 2005. Regional Competition.
- Giuseppe Stampacchia award for first publication, 1995. National Competition.
- Risaliti Award for Master Degree thesis in Chemistry, 1995. Awarded by the *University of Trieste*.

MENTOR – awards assigned to PhDs

- G. Squinzi Award – Master Thesis (Dott. M. Urban, 2020)
- ENI Award - Debut of Research (Dr. M. Monai, 2019)
- Adolfo Parmaliana Award (Dr. M. Monai, 2017)
- Doctoral Thesis Award "EUT Edizioni University of Trieste" (Dr. M. Monai, 2017)
- ENI Award - Debut of Research (Dr. M. Cargnello, 2013)
- Best PhD thesis in catalysis - European Federation of Catalysis Societies (Dr. M. Cargnello, 2013)
- Alfredo di Braccio Award - Accademia dei Lincei (Dr. T. Montini, 2012)
- 4th ERES Junior Award (Dr. T. Montini, 2012)
- Best PhD thesis in Inorganic Chemistry - Italian Chemical Society (Dr. M. Cargnello, 2012)
- ENI Award Debut of Research (Dr. L. De Rogatis, 2009)

PROFESSIONAL SOCIETIES

American Chemical Society

Italian Chemical Society

SIGNIFICANT PROFESSIONAL ACTIVITIES

Executive Editor, ACS Catalysis, February 8, 2021 - now

Associate Editor, ACS Catalysis, February 1, 2015 - February 7, 2021

Editorial Board, European Journal of Inorganic Chemistry, February 1, 2020 - now

Editorial Board, Inorganics, April 1, 2015 - now

Editorial Board, ChemCatChem, January 1, 2013 - now

Editorial Board, Cat.Today, December 9, 2008 - now

Editorial Board, The International Journal of Photoenergy, November 1, 2016 – April 1, 2021

Editorial Board, The Open Fuel Cells Journal, December 29, 2008 - December 29, 2012

Scientific Responsible of the CNR Research Unit associated with the Institute of Chemistry of Organometallic Compounds (ICCOM) of Florence and located at the University of Trieste, 2008 - now

Member National Steering Committee of 44th International Conference on Coordination Chemistry (ICCC-2022), Rimini (Italy), July 2022.

Member of the Advisory Board of the First International Conference on NanoMaterials and Sustainable Applications (NANO-SA 2020), Mumbai (India), December 2020 – webinar.

Member National Steering Committee of CIS19 Meeting, Salerno (Italy), August 2019.

Member National Steering Committee of XII INSTM Meeting, Ischia (Italy), July 2019.

Member National Steering Committee of 28th International Conference on Organometallic Chemistry (ICOMC-2018), Firenze (Italy), July 2018.

Member of the International Advisory Committee of the “3rd International Symposium on Energy and Environmental Photocatalytic Materials (EPEM3)”, Kraków (Poland), May 2018.

Member of the Scientific Committee of Fundamentals and catalytic applications of cerium dioxide, Barcellona (Spain), June 2018.

Member of the Scientific Council of the Consortium for Science and Technology of Materials. 2016 - now.

Member of the Scientific Council of the national meeting of the Inorganic Chemistry Division of the Italian Chemical Society, Padova (Italy), September 2016.

Member of the Scientific Council of the first national meeting of EnerChem, Florence (Italy), February 2016.

Member of the Scientific Council of the national meeting of the Inorganic Chemistry Division of the Italian Chemical Society, Camerino (Italy), September 2015.

Co Chairman - Fundamentals and catalytic applications of cerium dioxide, Udine (Italy), July 2014.

Co-organizer - 8th International Conference on f-Elements, Udine (Italy), August 2012.

Co-organizer - Slovenian-Italian Conference on Materials and Technologies for Sustainable Growth, Nova Gorica (Slovenia), May 2011.

Co-organizer - VIII Congresso Nazionale della Divisione di Chimica Inorganica della Società Chimica Italiana, Trieste (Italy), September 2010.

Co-organizer - 4th Korea-Italy Inorganic Chemistry Symposium, Malcesine, Verona (Italy), September 2006.

Co-organizer 6th Italian Seminar on Catalysis, Fundamentals and applications to environmental problems, Grado (Italy), June 2001.

Co-organizer CEZIRENCAT Summer School, Trieste (Italy), August 1998.

Co-organizer 2nd European – Japanese Meeting on DeNO_x, Reading (U.K), March 1997.

Co-guest Editor of Special Issue on “Nanostructured Materials for Photocatalysis” – Catalysis; (2019).

Co-guest Editor of Special Issue on “Morphological, Compositional, and Shape Control of Materials for Catalysis” – Studies in Surface Science and Catalysis; (2017).

Co-guest Editor of Special Issue on “Catalysis by ceria” - Catalysis Today; (2015).

Co-guest Editor of Special Issue on “Chemistry of Palladium” - ChemCatChem; (2015).

Co-editor of the book "Catalysis by Ceria and related Materials, A. Trovarelli and P. Fornasiero Eds., Imperial College Press, London; (2013).

Co-guest Editor of Special Issue on “Fundamental understanding of photocatalytic conversions on semiconductor surfaces” - Catalysis Today; (2013).

Co-editor of the book "Renewable Resources and Renewable Energy: A Global Challenge, Second Edition, P. Fornasiero and M. Grazian Eds, CRC Press (Francis and Taylor), New York; (2011).

Co-editor of the book "Renewable Resources and Renewable Energy: A Global Challenge, First Edition, P. Fornasiero and M. Grazian Eds, CRC Press (Francis and Taylor), New York (2006).

ADMINISTRATIVE DUTIES

Evaluator of ERC Research Grant – EU (2017-2018 and 2020);

Swiss National Science Foundation (2017 and 2021);

Evaluator of Research Proposals for ACS Petroleum Research Fund – USA (2015, 2017, 2018, 2019);

Evaluator of Research Proposals for The Academy of Sciences for the Developing World (TWAS) - Italy; (2008 - 2021) – Member of the Chemistry Panel (2009-2019) and President of the Chemistry Panel (2020-2021);

Member of the Evaluator Committee of the AIM Call (2018) – Ministry of Instruction, University and Scientific Research;

Evaluator of Research PRIN, POR, SIR (2016), FIRB (2016 and 2017 ex post evaluation), FARE Projects (2016) and Prof of concept (2018 and 2020) – Ministry of Instruction, University and Scientific Research;

Evaluator of Projects of the Ministry of Economic Development – Italy (2013 - 2017);

Evaluator of Research Project of DoE – USA (2017, 2020);

Evaluator of Research Project in the Framework of Shota Rustaveli National Science Foundation - Georgia;

Member of the National Peer Reviewer team of Italian Products of the research 2001-2003 and 2004-2010;

Evaluator of Research Projects of the Universities of Padova, Milan - Bicocca and Venezia Ca’Foscari;

Evaluator of Research Projects of the Israel Science Foundation (ISF) – Israel (2021)

Evaluator of Research Projects of the Czech Academy of Sciences (CAS) – Czech Republic (2020)

Evaluator of Research Projects of the Chinese Academy of Sciences (CAS) – China (2019)

Evaluator of Research Projects of the Agence Nationale de la Recherche (ANR) – France
 Evaluator of PRIN Research Projects (2013, 2015, 2018);
 Member of the Evaluation Panel of Research Projects of the Fondazione CariPaRo – Italy (2015, 2016, 2017, 2018, 2019, 2020, 2021);
 Member of the Evaluation Panel of Research Projects of the Fondazione CariVerona – Italy (2019);
 Member of the Evaluation Panel of Projects of the Fondazione CariTrento e Rovereto – Italy (2019, 2020);
 Evaluator of Industrial Projects of the Regione Liguria (2020, 2021)
 Evaluator of Industrial Projects of the Regione Toscana (2018)
 Evaluator of Industrial Projects of the Regione Sardegna (2018, 2019, 2021)
 Member of the Peer Reviewer Panel for chemistry at the University of Trieste (2014-2018);
 Assessment Board of the University of Trieste (2013 - 2019);
 Member of the Group of Expert for the Evaluation of the Italian Research assessment VQR 2011-2014.

INVITED SEMINARS

Universities and research centers

1. University of Trento (Italy) - October 13, 2021
2. Collegio L. Fonda - University of Trieste (Italy) - November 23, 2020 – webinar
3. Fuzhou University (China) - September 19, 2020 – webinar
4. Tsinghua University - Beijing (China) - December 2, 2019
5. Dalian Institute of Chemical Physics - Dalian (China) - November 29, 2019
6. Beijing University - Beijing (China) - December 28, 2019
7. Tjining University (China) - November 27, 2019
8. Manchester University (U.K.) – March 11, 2019
9. Soleil Synchrotron (France) - December 3, 2018
10. Fuzhou University (China) - April 19, 2018
11. University of Trieste (Italy) - November 10, 2017
12. University of Udine (Italy) - October 30, 2017
13. Palacký University Olomouc (Czech Republic) - October 16, 2017
14. University College of Cork (Ireland) – July 7, 2017
15. ICTP – Trieste (Italy) - March 2, 2017
16. University of Utrecht (Netherlands) – November 18, 2016
17. Dalian Institute of Chemical Physics - Dalian (China) - August 5, 2016
18. Peking University - Beijing (China) - June 30, 2016
19. PSI - Villigen (Switzerland) - June 9, 2016
20. University of Valencia (Spain) – May 20, 2016
21. University of Siena (Italy) – April 11, 2016
22. EPFL - Lausanne (Switzerland) – April 21, 2016
23. University of Twente (Nederland) - March 17, 2016
24. University of Cardiff (U.K.) - February, 15, 2016
25. ETH - Zurich (Switzerland) - January 12, 2016
26. University of Pensilvania (U.S.A.) - September 30, 2014
27. University of Pittsburgh (U.S.A.) - May 17, 2014
28. University of Milano (Italy) - January 8, 2014
29. KAUST University (Saudi Arabia) - February 2, 2013
30. Leibniz-Institut für Katalyse - Rostock (Germany) - January 10, 2013
31. University of Padova (Italy) - November 6, 2012
32. University of Torino (Italy) - July 12, 2012
33. University of Nova Goriza (Slovenia) - January 7, 2009
34. Indian Institute of Technology di Madras (India) - April 3, 2009
35. ICCOM-CNR Florence (Italy) - December 2, 2006
36. University of Verona (Italy) – June 16, 2006
37. University of Parma (Italy) - April 18, 2006
38. University of Verona (Italy) - February 22, 2006

39. Columbia University - New York (U.S.A.) - August 20, 2004
40. University of Milano - Bicocca (Italy) - February 24, 2004
41. University of Cagliari (Italy) - March 13, 2003
42. KAUST University (Saudi Arabia) - February 2, 2013 and August 28, 2003
43. National Research Institute of Lubiana (Slovenia)- November 8, 2002
44. University of Cadice (Spain) - July 7, 2000
45. ETH - Zurich (Switzerland) – June, 1994
46. University of Reading (U.K.) – June, 1994
47. University of Sheffield (U.K.) - January, 1993

Industrial

1. Research center Infragas (Borgaro Torinese, Italy) - November 2017
2. Research center Colorobbia (Vinci, Italy) - November 2015
3. Research center Solvay (Paris, France) -May 2015
4. Research center Lyondellbasell (Ferrara, Italy) June 2014
5. Research center Istituto Donegani (Novara, Italy) - July 2009
6. Research center Idealab (Pisa, Italy) – June 2006, September 2006 and December 2006
7. Research center MEL Chemicals (Manchester, U.K.) - January 2000 and May 2008
8. Research center SAES Getters (Milano, Italy) - December 2001 and November 2005

Meetings (Invited only)

1. “Nano-catalysis: step by step towards more sustainable chemical synthesis”, to be presented at “ChinaNANO 2021”, Beijing (China), November 2021. (Keynote) - from remote.
2. “A journey into organic synthesis by modified carbon nitride photocatalysts” at Swiss Chem Soc Fall meeting, Losanne (Switzerland), September 2021. (Keynote) - from remote.
3. “From metals to metal-free catalysts: routes to sustainable chemistry”, presented at “First International Conference on NanoMaterials and Sustainable Applications” (NANO-SA 2020), Mumbai (India), December 2020. (Plenary) - from remote.
4. “Hierarchical catalytic materials”, to be presented at “Low Dimensional Materials”, Liblice Castle (Czech Republic), September 2020. (Invited)- from remote.
5. “Design of photo-catalysts for hydrogen production and simultaneous biomass valorization” presented at the first Annual Network Symposium (ANS) of the MSCA-ITN BIKE project (<https://www.bike-msca.eu/>) September 2020. (Invited) – webinar.
6. “Design of photo- and electro- catalysts for energy and environmental applications”, presented at “Low Dimensional Materials” SINCHEM Winter School, Bologna (Italy), February 2020 (Invited)
7. “The long and winding road to sustainable catalysis”, presented at the European Winter School on Physical Organic Chemistry, Bressanone (Italy), February 2020 (Invited)
8. “Photocatalytic Nanomaterials for the Energy Application”, presented at 4th Fuzhou University (FZU) and Osaka Prefecture University (OPU) Joint International Symposium on Photocatalysis, Photofunctional Materials and Nano-Science & Technology. Fuzhou (China), November 2019 (Plenary)
9. “Smart Catalysts and Today’s Energy and Environmental Challenges”, presented at “the XI International Conference “Mechanisms of Catalytic Reactions” (MCR-XI)”, Sochi (Russia), October 2019 (Plenary)
10. “Photoassisted production of hydrogen by nanostructured materials”, presented at “Solar driven chemistry: towards new catalytic solutions for a sustainable world”, Accademia dei Lincei, Roma (Italy), October 2018 (Invited)
11. “Smart catalysts”, presented at 24th Annual Meeting of the Slovenian Chemical Society, Portorož-Portorose (Slovenia), September 2018 (Plenary)
12. “Opportunities and challenges of well-defined nanocatalysts”, presented at 10th International Conference on Nanomaterials - Research & Application, Brno, Czech Republic, October, 2017 (Plenary)
13. “Nanostructured Materials for catalytic and photocatalytic upgrading of biomass”, presented at Biomass Resources for Renewable Energy Production, Madrid, Spain, June, 2017 (Plenary)
14. “The non- innocent role of nanostructured ceria in energy and environmental applications”, presented at ICRE'2016, Lanzhou, China, August, 2016 (Plenary)

15. "Hybrid nano-catalysts for energy related applications", presented at 16th International Congress on Catalysis, Beijing, China, July, 2016 (Plenary)
16. "Design of Photocatalytic nanomaterials: Lights and shadows of sustainable world", presented at Solar Energy Conversion Meeting, Valencia, Spain, May, 2016 (Plenary)
17. "Hierarchical catalysts: fascinating strategies playing with structures at the nanoscale", presented at COST Meeting, Ljubljana, Slovenia, March, 2016 (Plenary)
18. "Methane catalytic combustion over hierarchical Pd@CeO₂/Si-Al₂O₃: Effect of the presence of water", presented at 250 ACS meeting, Boston, USA, August 2015 (Invited)
19. "Photocatalytic hydrogen production by reducible oxides" presented at 250 ACS meeting, Boston, USA, August 2015 (Invited)
20. "Design of ceria based catalyst for energy and environmental applications" presented at Ceramics for Energy, Faenza, Italy, May 2015 (Invited)
21. "Photocatalytic nanomaterials: Lights and shadows of sustainable world" presented at Avogadro Colloquia, Rome, Italy, May 2015 (Invited)
22. "Innovative strategie di sintesi di vecchi e nuovi catalizzatori" presented at Green Planet, Milano, Italy, April 2015 (Keynote)
23. "Design of core-shell catalysts: fascinating strategies playing with structures at the nanoscale", presented at Catalysis meets sensing, Karlsruher Institut für Technologie, Karlsruhe, Germany, February 2015 (Invited)
24. "Catalyst Design by Modulating Metal-Support Interactions and Spatial Confinement" presented at International Conference on Catalytic Carbon and Hydrogen Management, Jeddah, Saudi Arabia, February 2015 (Invited)
25. "Serendipity or design of catalysts and photo-catalysts?", presented at 39th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, USA January 2015 "Advanced Photocatalysts for H₂ and added-value by-products", to be presented at 2014 MRS Meeting & Exhibit, Boston, USA, December 2014 (Invited)
26. "Tuning photo-catalysts properties for sustainable solar fuels", presented at Fall E-MRS Conference, Warsaw, Poland, September 2014 (Invited)
27. "New directions in catalyst design for energy and environmental applications" presented at International Workshop on Solar Energy Materials (SOLMAT 2014), Bled, Slovenia 2014 (Invited)
28. "Design of photo-catalysts for solar fuels and sustainable chemical reactions", presented at Material Challenges in Devices for Fuel Solar Production and Employment, Trieste, Italy, May 2014 (Invited)
29. "Metal Clusters and Nanocrystals as Building Blocks for Catalysts Design", presented at Advanced workshop on solar energy conversion, Venezia, Italy, May 2014 (Invited)
30. "Designing Catalysts by Manipulating Metal Clusters and Nanocrystals as Building Blocks" presented at FineCat 2014 – Symposium on heterogeneous catalysis for fine chemicals, Palermo, Italy, April 2014. (Plenary)
31. "Tuning Metal-support Interactions in Ceria Based Catalysts" presented at Nanotechnology and Sustainability: New Research in Italy and the United States, New York, USA October 2013 (invited)
32. "Tuning metal-support interactions in ceria based catalysts.", presented at XVII National Congress of Catalysis GIC 2013 and XI National Congress of Zeolites Science and Technology, Riccione, Italy, September 2013 (Plenary)
33. "Advancing the Frontiers in Nanocatalysis and Renewable Energy Conversion Applications", presented at IX National INSTM Meeting on Material Science and Technology, Bari, Italy, July 2013 (Keynote)
34. "Photocatalytic H₂ and added-value by-products: The role of metal oxide systems in their synthesis from liquid oxygenates", presented at New Materials for Renewable Energy, Trieste, Italy, October 2011 (Invited)
35. "Tailoring nanostructured catalysts in a hydrogen economy", presented at SAMIC2010, Bressanone, Italy, December 2010 (Plenary)
36. "Embedded metal particles: a way to active and stable catalysts", presented at Meeting Italy-Korea on Inorganic Chemistry, Pohang, Republic of South Korea, September 2009 (invited)
37. "Embedded metal particles: a way to active and stable catalysts.", presented at 10th FIGIPAS Meeting in Inorganic Chemistry, Palermo, Italy, July 2009 (Invited)
38. "Embedded metal particles: a way to active and stable catalysts", presented at 1st International Conference on Nanostructured Materials and Nanocomposites, Kottayam, India, May 2009 (Invited)
39. "Photocatalytic production of hydrogen over tailored CuO_x-embedded TiO₂, presented at COST D41 Working Group 2 "Oxides Surface Chemistry", Krakow, Poland, May 2009 (Invited)

40. "Aqueous-phase reforming process and catalytic hydrogen production from biomass", presented at workshop on Biofuels, Chemicals and Polymers from Bio-resources, Santa Fè, Argentina, October 2008 (Plenary)
41. "Aqua phase reforming process and catalytic hydrogen production from biomass.", presented at workshop on " Biofuels from Palm Oil: Emerging Technologies and their Assessment.", Bangi, Malaysia, July 2007 (Invited)
42. "Rh/Ce_xZr_{1-x}O₂/Al₂O₃ nanocomposites for ethanol steam reforming", presented at 6th International Conference on f- Elements, Wroclaw, Poland, September 2006 (Invited)
43. "Reactivity and stability of nanostructured materials in catalysis: two correlated aspects." presented at Nanoforum. Micro & Nanotechnologies: Where Research Meets Business, Milano, Italy, September 2005 (Invited)
44. "Catalysis technologies and renewable resources, with reference to fuel cells technology, and hydrogen based technology", presented at Workshop on "Cleaner Technologies for Sustainable Chemistry", Cairo, Egypt, April 2005 (Invited)
45. "Nanostructures and catalysis. How "innocent" is the support?", presented at 34th national meeting of the Inorganic Chemistry Division of the Italian Chemical Society, July 2005 (Plenary)
46. "Catalytic technologies for control of air pollution from mobile sources.", presented at Meeting Italy-Korea on Inorganic Chemistry, Seoul, Republic of South Korea, September 2003 (Invited)
47. "Technologies for the control of gaseous emissions and particulate matter.", presented at ICS-UNIDO Expert Group Meeting on "Expert Group Meeting: Cleaner Technologies for Green Chemistry and Promotion of Related Projects", Trieste, Italy, May 2003 (Invited)
48. "Prevention of air pollution from mobile sources: from petrol to renewable resources.", presented at Workshop on "Catalytic Technologies for Sustainable Industrial Processes Utilizing Crop-derived Renewable Raw Materials.", Bangi, Malaysia, December 2002 (Invited)
49. "Catalytic technologies for control of air pollution from mobile sources.", presented at Workshop on "Cleaner Technologies for Sustainable Chemistry.", Cape Town, Republic of South Africa, December 2002 (Invited)
50. "Technologies for particulate emission control.", presented at ICS-UNIDO Expert Group Meeting on "Perspectives on Cleaner Technologies for Sustainable Chemistry", Trieste, Italy, April 2002 (Invited)
51. "Catalytic technologies for prevention/control of air pollution from mobile sources.", presented at Workshop on "Technologies and Processes for Sustainable Development and Pollution Reduction / Prevention.", Brno, Prague, Czech Republic, January 2002 (Invited)
52. "Catalytic technologies for prevention/control of air pollution from mobile sources.", presented at Workshop on "Catalytic Technologies for Sustainable Industrial Processes.", Buenos Aires, Argentina, November 2001 (Invited)
53. "Design of the three-way catalyst for the car of the 21st century.", presented at 6th FIGIPS Meeting in Inorganic Chemistry, Barcelona, Spain, July 2001 (Invited)

GRANTS

- 2020-2022 – "Novel photo-assisted systems for direct Solar-driven redUctioN of CO₂ to energy rich CHEMicals ("SUN2CHEM", H2020-LC-SC3-2018-2019-2020, EU)
- 2020-2022 – "DistributEd Chemicals and fuels production from CO₂ in photoelectrocatalytic DEvices ", H2020-NMBP-ST-IND-2018-2020, EU)
- 2019-2021 – "Photocatalyzed selective transformation of lignocellulose with hydrogen production", MAECI
- 2015-2017 – "EurasiaCat: Advanced Education European-Asiatic Exchange Program in Materials Science and Catalysis", EU FP7
- 2013-2016 - "The Development of Core-Shell, Methane-Oxidation Catalysts" - Qatar Science Foundation.
- 2015-2019 - "Design of innovative supported catalysts"- Infragas srl. (Industrial process).
- 2014-2015 - "Advanced core-shell catalysts for methane catalytic combustion" - University of Trieste.
- 2013-2015 - "Design of monolithic catalysts for methane emissions", Fri-el srl (Industrial process).
- 2012-2014 - "Tuning catalytic properties of self-assembly of complementary nano-scale building block" - University of Trieste.
- 2012-2013 - "Solar Fuels" - CRTrieste foundation.
- 2011-2012 - "Development of photo-catalysts for solar fuels production" - CRTrieste foundation.
- 2011-2012 - "Photocatalytic production of hydrogen" INSTM consortium.

- 2009-2012 - “Development of an Italian technology for the biomass pretreatment, the first step of the second generation bio-ethanol production” Ministry of Economic Development.
- 2009-2011 - “Development and photo-catalytic production of hydrogen from biomass - IDRO-BIM.” Regione Friuli Venezia Giulia.
- 2009-2010 - “Sustainable production of hydrogen from lignocellulosic wastes”, - CRTrieste foundation.
- 2009-2010 Italy-Argentina bilateral project on “Sustainable hydrogen production using noble metals supported on ceria-based nanocomposites.” Italian Ministry of Foreign Affairs and International Cooperation
- 2005-2009 Italy-India bilateral project “Studies on doped ceria nano-powders for electrochemical energy applications.” - Italian Ministry of Foreign Affairs and International Cooperation
- 2005-2009 Technical and scientific responsible of the project FISIR-MIUR “Inorganic and hybrid nano-systems for the development and innovation of fuel cells”
- 2001-2008 Coordinator of Research activities in the framework of joint projects (FIRB– MIUR and Center of Excellence of Nanostructured Materials – University of Trieste - MIUR) focused on the synthesis and characterization of heterogeneous catalysts.

COURSES TAUGHT

Inorganic Chemistry (Fundamentals and Laboratory)

Green Chemistry

Inorganic Chemistry Laboratory

Heterogeneous Catalysis

Industrial Chemistry

Synthesis and Reactivity of Nanomaterials

PhD GRADUATE STUDENTS DIRECTED

T. Montini	Design of catalytic materials for fuel cells, 2006.
M. Bevilacqua	Solid Oxide Fuel Cells: design and development of cathodic materials, 2008.
L. De Rogatis	Design of nanostructured catalysts for H ₂ production and CO ₂ hydrogenation, 2008.
B. Lorenzut	Development of nanostructured catalysts for H ₂ production and purification, 2010.
V. Gombac	Photocatalytic processes for sustainable hydrogen production from renewable sources, 2012.
M. Cargnello	Tailored nanoarchitectures based on transition metals for heterogeneous catalysis, 2012.
Y.X. Chen	Nanostructured TiO ₂ based materials for electrocatalysis and photoelectrocatalysis, 2013.
L. Wang	Nanostructured electrocatalysts for anion exchange membrane fuel cells, 2015.
A. Beltram	Hierarchical materials for energy and environmental applications, 2017
I. R. Ocagna	Morphology control of TiO ₂ based nanomaterials for sustainable energy and environmental applications, 2017
M. Monai	Nanostructured materials for environmental and energy - related applications, 2017
A. Lenarda	Smart materials for Energy applications, 2019
F. Longobardo	Synthesis and characterization of new carbon-based nanomaterials for electrocatalytic and photocatalytic applications, 2021

POSTDOCTORAL FELLOWS

L. Suhadolnik	2020 - 2021	K. Christoforidis	2014 - 2016T.
M. Melchionna	2013 - 2021	T. Montini	2006 - 2014
V. Gombac	2005 - 2021	B. Lorenzut	2010 - 2012
C. Cringoli	2020 - 2020	G. Vicario	2010 - 2010
T. Scaltas	2017 - 2018	M. Bevilacqua	2008 - 2008

VISITING FELLOWS

Q. Wang	PhD candidate	China	2019 - 2020
E. Chen	Master Student	China	2017 - 2018
C. Yi Chou	Master Student	China	2017 - 2018
W. T. Yang	Ph.D. candidate	China	2016 - 2016
M. Iqbal	Ph.D. candidate	Pakistan	2013 - 2013
A. I. Carbajal Ramos	Post-Doc	Argentina	2013 - 2013
A. I. Carbajal Ramos	Ph.D. candidate	Argentina	2011 - 2011
N. Bertero	Post-Doc	Argentina	2010 - 2010
R. Jothiramalingham	Post-Doc	India	2010 - 2010
N. M. Bertero	Post-Doc	Argentina	2009 - 2009
H. Abdul	Professor	Pakistan	2008 - 2008
R. Singh	Ph.D. candidate	India	2008 - 2008
P. Das	Ph.D. candidate	India	2008 - 2008
F. Gennari	Researcher	Argentina	2004 - 2006

Current Graduate Students

<u>Student</u>	<u>Anticipated Grad Date</u>	<u>Degree Sought</u>
M. Ferrara	March 2022	PhD
M. Dakka	March 2022	PhD
M. Bisetto	March 2023	PhD
M. Marchi	March 2025	PhD

Bibliographic data at <http://orcid.org/0000-0003-1082-9157>,

Data collected on 21 September 2021

Google Scholar: Total citations 30.843, h index = 89, i-10 index 241
Scopus: Total citations 23.520, h index = 77, i-10 index 229
Web of Science: Total citations 22.764, h index = 77, i-10 index 224

Trieste, 05 October 2021

