Professor Paolo Fornasiero

BIOGRAPHICAL DATA
June, 2026

Department of Chemical and Pharmaceutical Sciences
University of Trieste
via L. Giorgieri 1
34127 Trieste, Italy
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PERSONAL
Born December 5, 1968 in Ruti, Switzerland.

ACADEMIC RECORD
University of Reading, U.K., Catalysis Research Center - November 1996 to September 1997. Post-doc (supervisor Prof. R. Burch)
University of Trieste, Chemistry Department - November 1993 to October 1996. PhD awarded September 1997. (supervisor Prof. M. Graziani)
University of Trieste, Chemistry Department - November 1987 to November 1992. B.S.Chem.

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, 2006.
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 30 years of his research activity have been dedicated to the development of:

- electro-catalysts for green H_2 production, CO_2 valorization, N_2 activation and H_2O_2 production
- photo-catalysts for solar fuel production, including H_2 and organic synthesis
- advanced catalysts for methane catalytic oxidation and propane dehydrogenation
- novel photo-catalyst for water depollution
- active materials to be used in 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
- Member of the Italian Academy of Engineering and Technology, 2026
- Environment, Sustainability and Energy Horizon Prizes 2026. Awarded by the Royal Society of Chemistry for a team work on the development of improved photocatalytic approaches for solar powered hydrogen production from sustainable biomass.
- Member of European Academy of Sciences and Arts, 2025.
- Paolo Chini Memorial Lecture, 2025. Awarded by the *Italian Chemical Society*, for his contribution to research in the field of Industrial Chemistry, Catalysis and Inorganic Chemistry.
- Fellow of the Royal Society of Chemistry, 2023.
- Member of the Academia Europaea, 2022.

- Lamberto Malatesta Medal in Inorganic Chemistry, 2022. Awarded by the Italian Chemical Society to an Italian researcher for his contribution to research in the field of Inorganic Chemistry.
- Member of the European Academy of Sciences, 2021.
- Maria Teresa Messori Roncaglia and Eugenio Mari 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 H_2 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 Students and PhDs supervised by Fornasiero and their current positions

- 2025 - Adolfo Parmaliana Award, Dr. M. Marchi (Post-Doc - Ostrava University)
- 2023 - Adolfo Parmaliana Award, Dr. M. Bisetto (Senior Engineer - Electrochemistry at PFASuiki GmbH)
- 2020 - G. Squinzi Award – Master Thesis, Mr. M. Urban (Post Doc – ICN2 Barcellona)
- 2019 - ENI Award - Debut of Research, Dr. M. Monai (Assistant Professor - Utrecht University)
- 2017 - Adolfo Parmaliana Award, Dr. M. Monai (Assistant Professor - Utrecht University)
- 2017 - Doctoral Thesis Award "EUT Edizioni University of Trieste", Dr. M. Monai (Assistant Professor- Utrecht University)
- 2013 - ENI Award - Debut of Research, Prof. M. Cargnello (Associate Professor - Stanford University)
- 2013 - Best PhD thesis in catalysis - European Federation of Catalysis Societies, Prof. M. Cargnello (Associate Professor- Stanford University)
- 2012 - Alfredo di Braccio Award - Accademia dei Lincei, Prof. T. Montini (Associate Professor- Trieste University)
- 2012 - 4th ERES Junior Award, Prof. T. Montini (Associate Professor - Trieste University)
- 2012 - Best PhD thesis in Inorganic Chemistry - Italian Chemical Society, Prof. M. Cargnello (Associate Professor - Stanford University)
- 2009 - ENI Award Debut of Research, Dr. L. De Rogatis (Senior Scientist at STMicroelectronics)

PROFESSIONAL SOCIETIES

American Chemical Society, 2010
Italian Chemical Society, 2004
Royal Society of Chemistry, 2023

SIGNIFICANT PROFESSIONAL ACTIVITIES

Vice-rector for Research, University of Trieste, August 2025 - now
Member of the Quality Board of the University of Trieste, August 2025 - now
Deputy Director, Dep. of Chemical and Pharmaceutical Sciences, University of Trieste, September 2021 - now
Member of the Academic Senate of the University of Trieste, November 2024 - now
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

Executive Editor, ACS Catalysis, February 8, 2021 - now
Associate Editor, ACS Catalysis, February 1, 2015 - now

Editorial Advisory Board, Photocatalysis, November 1, 2025 - now
Advisory Editorial Board, RSC Applied Interfaces, January 1, 2024 - now
Editorial Board, Molecular Catalysis, January 1, 2022 - now
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 Expert and Consultant for The Centre for Science and High Technology - United Nations Industrial Development Organization (ICS-UNIDO), Trieste 2006-2011

Member of Evaluation Committee of Institute of the Catalysis and Petrochemistry (ICP) of the CSIC, Madrid (Spain) 2025-2027.
Member of the Scientific Board of the Czech Advanced Technology and Research Institute (CATRIN), Olomuc, (Czech Republick) 2025-2027

Member of the Scientific Committee of the "2nd International Symposium on Catalytic Removal of Soot Particles.", Kraków (Poland), September 2025.
Co-Chair of the Programme Committee of the "International Conference on Environmental Catalysis.", Isola delle Femmine (Italy), June 2025.
Member of the Advisory Board of the "First International Conference on NanoMaterials and Sustainable Applications." (NANO-SA 2020), Mumbai (India), December 2020.
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 (EEPM3)", Kraków (Poland), May 2018.
Member of the Scientific Commitee 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 DeNOx, 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.", 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, CRC Press (Francis and Taylor), New York; (2011).
Co-editor of the book "Renewable Resources and Renewable Energy: A Global Challenge.", First Edition, CRC Press (Francis and Taylor), New York (2006).

EVALUATION ACTIVITIES
PE4 Panel Member of Advanced ERC Grant 2021, 23 and 25 – EU (2021-2022; 2023-2024, 2025-2026);
Panel Member of Methusalem Grant 2023 – Nederlands (2023);
Panel Member of the commission evaluating the Institute of Inorganic Chemistry of Czech Academy of Sciences (CAS) (2025);
Evaluator of 2025 New Cornerstone Investigator Program – China (2025);
Evaluator of ERC Research Grant – EU (2017-2018, 2020-2026);
Evaluator for Swiss National Science Foundation / Swiss ERC (2017 and 2021-2022);
Evaluator of Research Proposals for ACS Petroleum Research Fund – USA (2015, 2017, 2018, 2019, 2021, 2022);
Evaluator of Research Proposals for The World Academy of Sciences (TWAS) - Italy; (2008 – 2022; 2024-2025);
Member of the Chemistry Panel (2009-2019) and President of the Chemistry Panel (2020-2022; 2024-2025);
Member of the Evaluator Commitee of the AIM Call (2018) – Ministry of Instruction, University and Scientific Research;
Evaluator of Research PRIN (2013, 2015, 2018), POR, SIR (2016), FIRB (2016 and 2017 ex post evaluation);
FARE Projects (2016) and Proof of Concept (2018, 2020 and 2024) – Ministry of Instruction, University and Scientific Research;
Evaluator of Projects for the Ministry of Economic Development - Italy (2013 - 2017);
Evaluator of Research Project for DoE - USA (2017, 2020);
Evaluator of Research Project for the Shota Rustaveli National Science Foundation - Georgia;
Evaluator of Research Projects for the Universities of Padova, Milan – Bicocca, Politecnico di Torino and Venezia Ca'Foscari;
Evaluator of Research Projects for the Israel Science Foundation (ISF) - Israel (2021);
Evaluator of Research Projects for the Czech Academy of Sciences (CAS) - Czech Republic (2020, 2021 and 2022, 2025);
Evaluator of Research Projects for National Science Centre Poland (2022-2023);
Evaluator of Research Projects for Executive Agency for Higher Education, Research, Development and Innovation Funding (2024);
Evaluator of Research Projects for the Chinese Academy of Sciences (CAS) - China (2019);
Evaluator of Research Projects for the Agence Nationale de la Recherche (ANR) – France;

Evaluator of Research Projects for Danish Agency for Higher Education and Science – Denmark (2016, 2017, 2019, 2021-2024);
Evaluator of Research Projects for National Center for Science and Technology - Kazakhstan (2020, 2022-2024);
Member of the Evaluation Panel of Research Projects of the Fondazione CariPaRo – Italy (2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2026);
Member of the Evaluation Panel of Research Projects for the Fondazione CariVerona – Italy (2019);
Member of the Evaluation Panel of Projects for the Fondazione CariTrento e Rovereto – Italy (2019, 2020, 2021, 2022, 2023);
Peer Reviewer of Italian Products of the research 2001-2003, 2004-2010 and 2015-2019;
Evaluator of Industrial Projects for the Regione Liguria (2020, 2021, 2023, 2024, 2025, 2026);
Evaluator of Industrial Projects for the Regione Toscona (2018);
Evaluator of Industrial Projects for the Regione Sardegna (2018, 2019, 2021, 2022);
Member of the Peer Reviewer Panel for chemistry at the University of Trieste (2014-2018);
Member of the Assessment Board of the University of Trieste (2013 - 2019);
Member of the Spin-Off Panel at the University of Trieste (2020-2025);
Member of the "Presidio della Qualità – area ricerca" (Quality Board - research) of the University of Trieste (2025 - 2031);
Coordinator of the "Presidio della Qualità – area ricerca" (Quality Board - Research) of the University of Trieste (2019 - 2022);
Member of the Group of Expert for the Evaluation of the Italian Research assessment VQR 2011-2014.

INVITED SEMINARS

Universities and research centers

1. East China University of Science and Technology, Shanhai (China) - July 24, 2026
2. Shanghai Jiao Tong University, Shanhai (China) - July 23, 2026
3. Langzhou University, Langzhou (China) - July 21, 2026
4. National Center for Nanoscience and Technology, Beijing (China) - July 20, 2026
5. Wuhan University of Technology, Wuhan (China) - July 7, 2026
6. Shandong University, Jinan (China) - July 6, 2026
7. Shanghai Jiao Tong University, Shanhai (China) - July 4, 2026
8. Fuzhou University, Fuzhou (China) - June 26, 2026
9. Fuzhou University, Fuzhou (China) - June 24, 2026
10. Guilin University, Guilin (China) - June 20, 2026
11. Xiamen Institute of Rare-earth Materials, Xiamen (China) - January 16, 2026
12. Institute of Urban Environment, Xiamen (China) - January 15, 2026
13. Xiamen University, Xiamen (China) - January 15, 2026
14. China University of Geosciences, Wuhan (China) - January 14, 2026
15. University of Milano Bicocca (Italy) - October 20, 2025
16. Beijing University of Chemical Technology (China) - July 19, 2025
17. Technical Institute of Physics and Chemistry, CAS Beijing (China) - July 18, 2025
18. Fuzhou University (China) - April 29, 2025
19. University of Torino (Italy) - February 24, 2025
20. University of Electronic Science and Technology of China, Chengdu (China) - April 22, 2024
21. Wuhan University of Technology, Wuhan (China) - April 21, 2024
22. Technical Institute of Physics and Chemistry, CAS Beijing (China) - April 19, 2024
23. Fuzhou University (China) - Dicember 25, 2023 - webinar
24. Fuzhou University (China) - November 25, 2023 - webinar
25. University of Pavia (Italy) - April 26, 2023
26. ICIQ Tarragona (Spain) - December 2, 2022
27. University of Cambridge (UK) - July 7, 2022
28. IMEM-CNR Parma (Italy) - June 10, 2022

29. Wuhan University of Technology (China) - June 06, 2022 - webinar
30. University of Udine (Italy) - April 27, 2022
31. University of Pavia (Italy) - April 20, 2022 - webinar
32. Technische Universität München (Germany) - January 12, 2022 - webinar
33. University of Trento (Italy) - October 13, 2021
34. Collegio L. Fonda - University of Trieste (Italy) - November 23, 2020 - webinar
35. Fuzhou University (China) - September 19, 2020 - webinar
36. Tsinghua University - Beijing (China) - December 2, 2019
37. Dalian Institute of Chemical Physics (China) - November 29, 2019
38. Beijing University of Chemical Technology (China) - November 28, 2019
39. Tjianing University (China) - November 27, 2019
40. Manchester University (U.K.) - March 11, 2019
41. Soleil Synchrotron (France) - December 3, 2018
42. Fuzhou University (China) - April 19, 2018
43. University of Trieste (Italy) - November 10, 2017
44. University of Udine (Italy) - October 30, 2017
45. Palacký University Olomouc (Czech Republic) - October 16, 2017
46. University College of Cork (Ireland) - July 7, 2017
47. ICTP - Trieste (Italy) - March 2, 2017
48. University of Utrecht (Netherlands) - November 18, 2016
49. Dalian Institute of Chemical Physics (China) - August 5, 2016
50. Peking University (China) - June 30, 2016
51. PSI - Villigen (Switzerland) - June 9, 2016
52. University of Valencia (Spain) - May 20, 2016
53. University of Siena (Italy) - April 11, 2016
54. EPFL - Lausanne (Switzerland) - April 22, 2016
55. EPFL - Sion (Switzerland) - April 21, 2016
56. University of Twente (Nederland) - March 17, 2016
57. University of Cardif (U.K.) - February, 15, 2016
58. ETH - Zurich (Switzerland) - January 12, 2016
59. University of Pensilvania (U.S.A.) - September 30, 2014
60. University of Pittsburgh (U.S.A.) - May 17, 2014
61. University of Milano (Italy) - January 8, 2014
62. KAUST University (Saudi Arabia) - February 2, 2013
63. Leibniz-Institut für Katalyse - Rostock (Germany) - January 10, 2013
64. University of Padova (Italy) - November 6, 2012
65. University of Torino (Italy) - July 12, 2012
66. University of Nova Goriza (Slovenia) - January 7, 2009
67. Indian Institute of Technology di Madras (India) - April 3, 2009
68. ICCOM-CNR Florence (Italy) - December 2, 2006
69. University of Verona (Italy) - June 16, 2006
70. University of Parma (Italy) - April 18, 2006
71. University of Verona (Italy) - February 22, 2006
72. Columbia University - New York (U.S.A.) - August 20, 2004
73. University of Milano - Bicocca (Italy) - February 24, 2004
74. University of Cagliari (Italy) - March 13, 2003
75. KAUST University (Saudi Arabia) - August 28, 2003
76. National Research Institute of Lubiana (Slovenia) - November 8, 2002
77. University of Cadice (Spain) - July 7, 2000
78. ETH - Zurich (Switzerland) - June, 1994
79. University of Reading (U.K.) - June, 1994
80. 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 MEL Chemicals (Manchester, U.K.) - May 2008
7. Research center Idealab (Pisa, Italy) - December 2006
8. Research center Idealab (Pisa, Italy) - September 2006
9. Research center Idealab (Pisa, Italy) - June 2006
10. Research center SAES Getters (Milano, Italy) - November 2005
11. Research center SAES Getters (Milano, Italy) - December 2001
12. Research center MEL Chemicals (Manchester, U.K.) - January 2000

Meetings (Invited only)

1. "Beyond the Surface: A Personal Journey into Sustainable Catalysis", to be presented at "57th Symposium on Catalysis", Prague (Czeck Republick), October 2026 (Plenary).
2. "Rethinking Catalysis: A Personal Journey Toward Truly Sustainable Processes." to be presented at "2nd Photorefineries Conference", Novi Sad (Serbia), September 2026 (Plenary).
3. " Nanostructured Catalytic Materials for Sustainable Photocatalysis: From Single Sites to Cooperative Systems." to be presented at " IEEE 3M-NANO", Suzhou (China), July 2026 (Plenary).
4. "Beyond the Surface: A Personal Journey into Sustainable catalysis." to be presented at "Chinese–Italian Symposium on Frontiers in Structural Chemistry of Materials ", Fuzhou (China), June 2026 (Invited).
5. "Rethinking Catalysis: A Personal Journey Toward Truly Sustainable Processes." presented at " 4th International Conference on Reaction Kinetics, Mechanisms and Catalysis & 3rd Forum of Young Researchers on Heterogeneous Catalysis", Budapest (Hungary), June 2026 (Plenary).
6. "Beyond the Surface: A Personal Journey into Sustainable Photocatalysis." presented at "IWSF3", Wuhan (China), April 2026 (Plenary).
7. "The criticality of metal particle size speciation in sustainable catalysis." presented at "the 24 International Symposium on Eco-materials Processing and Design", Wuhan (China), January 2026 (Keynote).
8. "Design of sustainable catalysts." presented at "2025 Sino-Italy Cooperation Workshop", Dalian (China), December 2025 (invited).
9. "The criticality of metal particle size speciation in sustainable catalysis." presented at "XXIII National Congress of Industrial Chemistry", Pisa (Italy), November 2025 (Plenary).
10. "New approaches and challenges in preventing catalysts deactivation by coking and sintering." presented at "2nd International Symposium on Catalytic Removal of Soot Particles", Kraków (Poland), September 2025 (Invited).
11. "Metal nanoparticles, clusters, single atom or combination for sustainable catalysis." presented at "NanoBio", Heraclion (Crete), September 2025 (Invited).
12. Round table discussion at Directors' Forum, Beijing (China), August 2025 (invited).
13. "Metal nanoparticles, clusters, single atom or combination for sustainable catalysis." presented at "ChinaNano2025", Beijing (China), August 2025 (Keynote).
14. "New approaches and challenges in preventing catalysts deactivation by coking and sintering." presented at "The China-Europe International Seminar of Carbon Neutralization", Dalian (China), July 2025 (Invited).
15. "Metal nanoparticles, clusters, single atom or combination for sustainable catalysis." presented at "Oxides for Energy Applications: Bridging Experiment and Theory to Understand Functionality", Saragozza (Spain), July 2025 (Invited).
16. "Metal nanoparticles, clusters, single atom or combination for sustainable catalysis." presented at 2nd Chem-Mat-Bio-AI Interdisciplinary Frontiers Symposium, Wuhan (China), May 2025 (Plenary).
17. "Single atom metal catalysts and beyond." presented at the 2nd International Workshop on Single Atom Catalysis, Milano (Italy), December 2024. (Invited).
18. "Sustainable processes: Producing better and more with less." presented at the Conference on International Exchange of Professionals, Shanhai, (China), November 2024. (Plenary).

19. “Sustainable processes: Producing better and more with less.” presented at the Panhellenic Catalysis Symposium, (Cyprus), October 2024. (Plenary).
20. “Smart catalysts for sustainable chemical processes.” presented at NanoMaterials for Green Hydrogen Paving the way to a sustainable future, Mestre (Italy), September 2024 (Invited).
21. “Sustainable processes: Producing better and more with less.” presented at the 10th International Conference on Advanced Materials, Bucharest (Romania), July 2024. (Plenary).
22. “Frontiers of catalysis in the H_2 economy.” presented at Economy revolution by H_2: an open discussion, Udine (Italy) June 2024 (invited).
23. “Sustainable catalytic processes” presented at Climate Change and Planetary Health, Trieste (Italy), June 2024 (invited)
24. “A personal journey into more sustainable photochemical processes.” presented at the Shimmer Forum, Chengdu (China), April 2024. (invited).
25. “A personal journey into more sustainable photochemical processes.” presented at the JACS Innovation Summit: Powering the role of catalysis in Energy Conversion, Dalian (China), April 2024. (Plenary).
26. “A personal journey into more sustainable photochemical processes.” presented at the 1st International Conference on Science and Technology for Sustainable Future (STSF-2023), Mandi (India), November 2023. (Plenary). from remote
27. “A “cerious” collaboration on supported metals and much more.”, presented at the 2023 AIChE meeting, Orlando (USA), November 2023. (Invited).
28. “Sustainability and multidisciplinarity.” presented at Trieste NEXT, Trieste (Italy), September 2023. (Invited).
29. “A personal journey into more sustainable photochemical processes.” presented at the 8th conference on Semiconductor Photochemistry (SP8), Strasbourg (France), September 2023. (Plenary).
30. “The metal/non-metal trajectory in sustainable chemistry.”, presented at “the Conference on Artificial Photosynthesis and Green Catalysis (CAP GC) 2023”, Lausanne (Switzerland), July 2023. (Invited).
31. “The metal/non-metal trajectory in sustainable chemistry.”, presented at “8th International Workshop of Materials Physics.”, Bucharest (Romania), May 2023. (Invited).
32. “The metal/non-metal trajectory in sustainable chemistry.”, presented at “NANOOSTRAVA23”, Ostrava (Czeck Republick), May 2023. (Plenary).
33. “From metal to metal-free heterogeneous catalysts: A journay into more sustainable chemical processes.” presented at 2nd Interdisciplinary Forum of Frontier Sciences 2022 (IFFS), (China), November 2022. (invited) – from remote.
34. “From metal to metal-free heterogeneous catalysts: A journey into more sustainable chemical processes” presented at CeNS/MCQST Workshop, Venice (Italy), September 2022. (Invited).
35. “From metal to metal-free heterogeneous catalysts: A journay into more sustainable chemical processes.” presented at INOR2022, Pisa (Italy), September 2022. (Plenary).
36. “Nanocatalysts for more sustainable chemical processes: opportunities and challenges.”, presented at ICCC2022 International Conference on Coordination Chemistry, Rimini (Italy), August 2022 (Invited)
37. “Carbon nitride based photocatalysts.”, presented at ACS Fall Meeting, Chicago (USA), August 2022. (Invited).
38. “Nanocatalysts for more sustainable chemical processes.”, presented at Israel-Italy workshop on Advanced Materials, synthesis, characterization, properies and applications, Tel Aviv (Israel), June 2022 (invited). - from remote due to COVID.
39. “Nano-catalysis: step by step towards more sustainable world.” presented at “2021 Soochow University International Workshop on Advanced Catalysis and Energy", Soochow (China), November 2021. (Plenary) - from remote.
40. “A personal perspective into the catalysts for hydrogen production.” presented at EF4, Sydney (Australia), October 2021. (Plenary) - from remote.
41. “A journey into organic synthesis by modified carbon nitride photocatalysts.” presented at Swiss Chem Soc Fall meeting, Losanne (Switzerland), September 2021. (Keynote) - from remote.
42. “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.
43. “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.

44. "Design of photo- and electro- catalysts for energy and environmental applications.", presented at "Low Dimensional Materials" SINCHEM Winter School, Bologna (Italy), February 2020 (Invited)
45. "The long and winding road to sustainable catalysis.", presented at the European Winter School on Physical Organic Chemistry, Bressanone (Italy), February 2020 (Invited)
46. "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)
47. "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)
48. "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)
49. "Smart catalysts.", presented at 24th Annual Meeting of the Slovenian Chemical Society, Portorož-Portorose (Slovenia), September 2018 (Plenary)
50. "Opportunities and challenges of well-defined nanocatalysts.", presented at 10th International Conference on Nanomaterials - Research & Application, Brno, Czech Republic, October, 2017 (Plenary)
51. "Nanostructured Materials for catalytic and photocatalytic upgrading of biomass.", presented at Biomass Resources for Renewable Energy Production, Madrid, Spain, June, 2017 (Plenary)
52. "The non- innocent role of nanostructured ceria in energy and environmental applications.", presented at ICRE'2016, Lanzhou, China, August, 2016 (Plenary)
53. "Hybrid nano-catalysts for energy related applications.", presented at 16th International Congress on Catalysis, Beijing, China, July, 2016 (Plenary)
54. "Design of Photocatalytic nanomaterials: Lights and shadows of sustainable world.", presented at Solar Energy Conversion Meeting, Valencia, Spain, May, 2016 (Plenary)
55. "Hierarchical catalysts: fascinating strategies playing with structures at the nanoscale.", presented at COST Meeting, Ljubljana, Slovenia, March, 2016 (Plenary)
56. "Methane catalytic combustion over hierarchical Pd@CeO_2/Si-Al_2O_3: Effect of the presence of water.", presented at 250 ACS meeting, Boston, USA, August 2015 (Invited)
57. "Photocatalytic hydrogen production by reducible oxides." presented at 250 ACS meeting, Boston, USA, August 2015 (Invited)
58. "Design of ceria-based catalyst for energy and environmental applications." presented at Ceramics for Energy, Faenza, Italy, May 2015 (Invited)
59. "Photocatalytic nanomaterials: Lights and shadows of sustainable world." presented at Avogadro Colloquia, Rome, Italy, May 2015 (Invited)
60. "Innovative strategie di sintesi di vecchi e nuovi catalizzatori." presented at Green Planet, Milano, Italy, April 2015 (Keynote)
61. "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)
62. "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)
63. "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 H_2 and added-value by-products", to be presented at 2014 MRS Meeting & Exhibit, Boston, USA, December 2014 (Invited)
64. "Tuning photo-catalysts properties for sustainable solar fuels.", presented at Fall E-MRS Conference, Warsaw, Poland, September 2014 (Invited)
65. "New directions in catalyst design for energy and environmental applications." presented at International Workshop on Solar Energy Materials (SOLMAT 2014), Bled, Slovenia 2014 (Invited)
66. "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)
67. "Metal Clusters and Nanocrystals as Building Blocks for Catalysts Design.", presented at Advanced workshop on solar energy conversion, Venezia, Italy, May 2014 (Invited)
68. "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)

69. “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)
70. “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)
71. “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)
72. “Photocatalytic H_2 and added-value by-products: The role of metal oxide systems in their synthesis from liquid oxygenates.”, presented at UNESCO advanced workshop on solar snergy conversion, Bucharest, Romania, May 2012 (Invited)
73. “Photocatalytic H_2 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)
74. “Tailoring nanostructured catalysts in a hydrogen economy.”, presented at SAMIC2010, Bressanone, Italy, December 2010 (Plenary)
75. “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)
76. "Embedded metal particles: a way to active and stable catalysts.", presented at 10th FIGIPAS Meeting in Inorganic Chemistry, Palermo, Italy, July 2009 (Invited)
77. “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)
78. “Photocatalytic production of hydrogen over tailored CuO_x-embedded TiO_2.”, presented at COST D41 Working Group 2 “Oxides Surface Chemistry”, Krakow, Poland, May 2009 (Invited)
79. “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)
80. “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)
81. "$Rh/Ce_xZr_{1-x}O_2/Al_2O_3$ nanocomposites for ethanol steam reforming.", presented at 6th International Conference on f- Elements, Wroclaw, Poland, September 2006 (Invited)
82. “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)
83. “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)
84. “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)
85. "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)
86. "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)
87. "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)
88. "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)
89. "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)
90. "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)
91. "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)

92. "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 (over 6 milions €)

- 2026-2031 – "PhotoElectrocatalytic smart Systems for CHEmicals and FUels production.", (PESCHE-FU, FIS3, Italy) - 2.281.564 €
- 2026-2030 – "Research and Innovation to develop the H_2 ecosystem.", (RISE-H2, Regione FVG, Italy) – 1.485.000 €
- 2025-2026 – "Sustainable hydrogen production through photoelectrochemical systems activated by sunlight." (PRIDE, PNRR, IT) - 500.000 €
- 2024-2026 – "Single-Atom Photocatalysts Enhanced by a Self-Powered Photonic Glass Reactor to Produce Advanced Biofuels." ("GlaS-A-Fuels.", HORIZON-EIC-2023-PATHFINDEROPEN-01-01, EU) – 578.750 €.
- 2023-2025 – "Synthetic and Structural Synergy Towards Advanced Heterogeneous Photoredox Catalysis." ("SySSy-Cat, MUR, PRIN2022, Italy) - 81.442 €
- 2022-2025 - "Single atom based nanohybrid photocatalyts for green fuels" ("San4fuel", HORIZON-WIDERA-2021-ACCESS-03-01, EU) – 267.469 €
- 2022-2024 – "Photocatalytic valorization of biomasses for H_2 production." – SNAM spa (Industrial project) – 65.000 €
- 2021-2023 - "Towards Non-Iridium High Entropy Material ElectroCATalysts for Oxygen Evolution Reaction in Acidic Media" ("HEMCAT", H2020-MSCA-IF-2020, EU) – 171.473 €
- 2020-2023- "Novel photo-assisted systems for direct Solar-driven redUctioN of CO_2 to energy rich CHEMicals" ("SUN2CHEM", H2020-LC-SC3-2018-2019-2020, EU) – 175.336 €
- 2020-2023 - "DistributEd Chemicals and fuels production from CO_2 in photoelectrocatalytic Devices", H2020-NMBP-ST-IND-2018-2020, EU) – 205,000 €
- 2019-2022 - "Photocatalyzed selective transformation of lignocellulose with hydrogen production", MAECI – 105,000 €
- 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. – 160,000 $
- 2015-2019 - "Design of innovative supported catalysts"- Infragas srl. (Industrial project).
- 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 Project).
- 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 FISR-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) - Bachelor in biology
Green Chemistry - Bachelor in natural sciences
Inorganic Chemistry Laboratory - Bachelor in geology
Heterogeneous Catalysis - Master in chemistry
Industrial Chemistry - Master in chemistry
Synthesis and Reactivity of Nanomaterials - Master in chemistry
Nanostructures in catalysis – PhD nanotechnology
10 tips for preparing a successful manuscript with an ACS editor- Transversal activity for PhD candidates

PhD GRADUATE STUDENTS DIRECTED

T. Montini	Design of catalytic materials for fuel cells, 2006.
M. Bevilacqua	Solid Oxide Fuell Cells: design and development of catodic 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 TiO2 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.
M.C. Cringoli	Supramolecular nanostructures of sulfur containing tripeptides in water, 2020.
F. Longobardo	Synthesis and characterization of new carbon-based nanomaterials for electrocatalytic and photocatalytic applications, 2021.
M. Ferrara	Smart nanostructured electrocatalysts for small molecules activation, 2022.
M. Dakka	Synthesis, characterization and applications of nanoparticles and nanomaterials with controlled properties, 2022.
M. Bisetto	Nanostructured catalysts for sustainable CO_2 Conversion, 2023.
M. Marchi	Exploring the use of carbon-based nanocatalysts for sustainable processes, 2025
G. Sportelli	Development and characterization of advanced materials for light-driven heterogeneous catalysis, 2025
S. Guazzi	Electrocatalytic oxidation of alcohols for the production of added-value chemicals, 2025
G. Grando	Development of metal-free photocatalysts for advanced photocatalytic organic synthesis, 2026
G. Castellani	Nanomaterials for energy and health, 2026

POSTDOCTORAL FELLOWS

G. Castellani	2026	M. Melchionna	2013 - 2021
G. Grando	2025 - 2027	V. Gombac	2005 - 2024
I. Mondal	2025 - 2027	M.C. Cringoli	2020 - 2020
G. Sportelli	2024 - 2025	T. Scaltas	2017 - 2018

M. Bisetto	2023 - 2024	K. Christoforidis	2014 - 2016
A. Goretti	2023 - 2023	T. Montini	2006 - 2014
P.H. Boštjančič	2022 - 2023	B. Lorenzut	2010 - 2012
L. Suhadolnik	2020 - 2023	G. Vicario	2010 - 2010
V. Gombac	2005 - 2024	M. Bevilacqua	2008 - 2008

VISITING FELLOWS

X. Li	PhD candidate	China	2026 - 2026
H. Hossein	Post-doc	Czech Republic	2025 - 2025
L. Svoboda	Post-doc	Czech Republic	2025 - 2025
R. Ricka	PhD candidate	Czech Republic	2025 - 2025
A.T. Wojtowicz	Master Student	Poland	2025 - 2025
M. Deshmukh	M.C Fellow	Czech Republic	2025 - 2025
F. Zhang	PhD candidate	China	2025 - 2025
L.C. Valencia	PhD candidate	Spain	2024 - 2024
S. Baulde Alvarez	PhD candidate	Spain	2024 - 2024
A. Morteza	PhD candidate	Czech Republic	2024 - 2024
M. Shahrezaei	PhD candidate	Czech Republic	2024 - 2024
A. Morteza	PhD candidate	Czech Republic	2023 - 2023
M. Shahrezaei	PhD candidate	Czech Republic	2023 - 2023
A. Naldoni	Senior Researcher	Czech Republic	2022 - 2022
L. Mascaretti	Post-Doc	Czech Republic	2022 - 2022
A. Naldoni	Senior Researcher	Czech Republic	2021 - 2021
A. Naldoni	Senior Researcher	Czech Republic	2020 - 2020
A. Naldoni	Senior Researcher	Czech Republic	2019 - 2019
L. Mascaretti	Post-Doc	Czech Republic	2021 - 2021
Y. Zhang	PhD candidate	Czech Republic	2020 - 2020
M. Shahrezaei	PhD candidate	Czech Republic	2021 - 2021
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

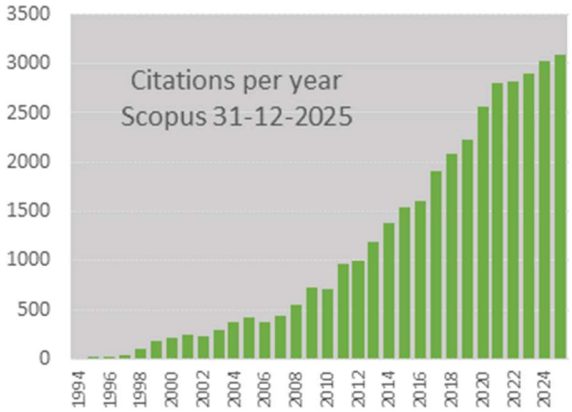
Current Graduate Students

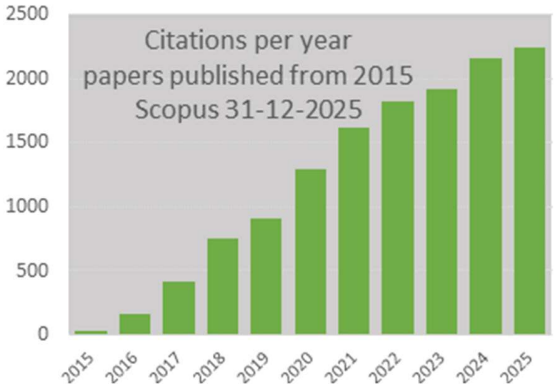
Student	Anticipated Grad Date	Degree Sought
S. Basavapura Ravikumar	March 2028	PhD
H. Ahmed	March 2028	PhD

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

Data collected on 1st June 2026

Google Scholar: Total citations 45.862, h index = 110, i-10 index 320
Scopus: Total citations 37.569, h index = 99, i-10 index 296
Web of Science: Total citations 36.368, h index = 96, i-10 index 293





Trieste, 1 June, 2026