PERSONAL INFORMATION

Barbara Bonelli

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Scopus Author ID:6701421391.

Sesso F | Data di nascita 13/05/1972 | Nazionalità Italiana

WORK EXPERIENCE

From the 1st of March 2021

Full Professor of Chemical Foundations of Technologies (CHIM/07)

Politecnico di Torino (www.polito.it), Corso Duca degli Abruzzi 24, I-10129 Torino (Italia).

- Academic research and teaching

Business or sector Materials Science, surface chemistry, physical-chemistry, environmental catalysis, photocatalysis, water remediation, emerging pollutants.

From the 31st of December 2010 to the 28th of February 2021

Associate Professor of Chemical Foundations of Technologies (CHIM/07)

Politecnico di Torino (www.polito.it), Corso Duca degli Abruzzi 24, I-10129 Torino (Italia).

From the 1st of January 2005 to the 30 of December 2010

Assistant Professor of Chemical Foundations of Technologies (CHIM/07)

Politecnico di Torino (www.polito.it), Corso Duca degli Abruzzi 24, I-10129 Torino (Italia).

From the 1st of April 2001 to the 31st of December 2004

Post-Doc

Politecnico di Torino (www.polito.it), Corso Duca degli Abruzzi 24, I-10129 Torino (Italia).

EDUCATION AND TRAINING

March 2001

Ph.D. in Chemical Science

Università degli Studi di Torino, Torino (Italy)

- Materials synthesis and characterization; catalytic properties and surface properties of materials.
- Title of the thesis “Spectroscopic characterization and catalytic properties of controlled mesoporosity materials”

March 1997

Master Degree in Industrial Chemistry

Università degli Studi di Torino, Torino (Italy)

- Industrial chemistry foundations; IR spectroscopy.
- Title of the thesis “Study of the effect of Potassium on Fe-oxide/ZrO_2 catalysts for ethylene dehydrogenation to styrene”

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1/C2	C1/C2	C1/C2	C1/C2	C1/C2
French, Spanish	A1/A2	A1/A2	A1/A2	A1/A2	A1/A2

Communication skills

- Very good communication skills gained through my experience as teacher, conference attendee and invited speaker. I currently coordinate the activities of the DiSAT Communication Board on several platforms and, thus, the dissemination of the Department activities.

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Organisational / managerial skills

- Since 2012, leader of the Surf-CheM research group (http://scm.polito.it) and of the Vibrational Spectroscopy Lab.
- Since 2018, Coordinator of the PhD course in Materials Science and Technology (vice-coordinator from 2012 to 2018).
- Since 2020, member of the Executive Committee of the School of Doctorate (ScuDO).
- Responsible of the following contracts with industrial companies:
- "Development of new adsorbent materials for ANG adsorption and storage" funded by ENI (contract 1117/2019. In this project, I was in charge of the WP1);
- "Evaluation of samples vibrational spectroscopic properties" funded by EMER S.p.A. (2020);
- "Characterisation of Dust and Sample Properties in Lunar Environment" (2012-2015, tender funded by ESA European Space Agency);
- "Synthesis and Characterization of metal ceramic nanocomposites" funded by ALFED S.r.L. (2014);
- "Study of $ZnCO_3$ powders" funded by ECOZINDER S.r.L. (2015);
- "Study of die-cast parts density" funded by TAURUS 80 (2013);
- "Study of die-cast parts impurities" funded by TAURUS 80 (2012)

ADDITIONAL INFORMATION

Patents

- Production of Magnetic Metal Nanoparticles emebbed in a silica-alumina matrix" Esposito, S., Marocco, A., Bonelli, B., Pansini, M. International Patent WO2015/145230°1 deposited on October 1st, 2015.
- "Produzione di Materiali Compositi Metallo-Ceramici Nano Strutturati da Precursori Zeolitici" Esposito, S., Marocco, A., Bonelli, B., Pansini, M. Italian Patent n° MI 2014 A 000522.
- "Procedimento di Splitting dell'acqua" Garrone, E., Bonelli, B., Vankova, S., Onida, B., Saracco, G. 2001, Italian patent TO2011A000895 deposited on February 26, 2012.
- "Nanotubi di imogolite di sintesi, chimicamente modificata, e procedimento per la loro preparazione" Bottero I., Garrone, E., Bonelli, B. 2007, Italian patent TO2007A000765 deposited on February 20, 2009.

Last ten years main scientific breakthroughs

- 1) establishment of Vibrational spectroscopy lab; 2) template-free synthesis of mesoporous TiO_2 with photocatalytic activity under solar light, as testified by the OPEN ACCESS publication "Effects of the Brookite Phase on the Properties of Different Nanostructured TiO_2 Phases Photocatalytically Active Towards the Degradation of N-Phenylurea", Freyria F.S., ChemistryOpen/Wiley, 2020, 9(9) 903-912, DOI: 10.1002/open.202000127. Invited cover feature. The paper was selected by Wiley to appear in the Hot Topic: Mesoporous Materials selection and the Society Volumes: Italy selection; 3) invention of methylimogolite nanotubes obtained by a one-pot procedure.

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Projects

- Both National Coordinator and Principal Investigator of the Politecnico Research Unit in the PRIN 2022 Project GREEner Nanomaterials for Upconversion in Photocatalytic applications.
- Principal Investigator of the Politecnico Research Unit in the PRIN 2022 PNRR Project SCORE2 - Solar-driven COnveRsion of CO_2 with HP-HT photorEactor..
- Principal Investigator of the INSTM Unit in a project on the removal of organic and inorganic pollutants from water funded by the CARIPLO foundation (DeN – Technology development of innovative strategies for the abatement of N-containing pollutants in water, duration March 2016-March 2019).
- Principal Investigator for Politecnico of the Galileo project G16 34 (January 2017- August 2018, title "Hybrid imogolite nanotubes for environmental applications") funded by the Università Italo Francese to allow the exchange of students and researchers between Italian and French institutions. Aim of the project is to characterize the adsorption properties of hybrid imogolite NTs towards several water organic pollutants, like herbicides, pesticides, dyes, etc.
- Principal Investigator of the Politecnico Research Unit in the MAGCHIP project funded by Regione Piemonte through the POR/FESR 07/13 program. In this project, the candidate was involved in the preparation of magnetic nanomaterials for the concentration and recovery of biomacromolecules from complex matrices (e.g. blood) in a robotic apparatus.
- Principal Investigator of the Politecnico Research Unit in the PRIN 2007 Project funded by MiUR "Synthesis and characterization of nanostructured model materials for the study of pathogenicity of amorphous silica in biologic media".
- Both National Coordinator and Principal Investigator of the Politecnico Research Unit in the PRISMA 2005 Project funded by the INSTM Consortium: "Synthesis and characterization of the physico-chemical properties of imogolite NTs".
- Principal Investigator of the Politecnico Research Unit of the CIPE 2004 project C72 funded by Regione Piemonte "Innovative materials for H_2 storage".
- Responsible of the MSCA-IF - Lush Art project: Luminescent solar heterostructures for artificial photosynthesis (GA n. 843439; start date the 16th of March 2020-end date the 15th of March 2022).
- Principal Investigator for Politecnico of the MITOR project - LIGHT Harvesting Antenna systems for solar Applications (funded by Fondazione Compagnia di Sanpaolo, start date the 7th of January 2019).

Awards

- Certificate of recognition from The American Chemical Society for the reviewer activity (2016);
- Certificate of Appreciation from The American Chemical Society for my valuable scientific contribution (2013).
- In the years 2006-2009: Young Researchers Award from Politecnico di Torino, an award devoted to the best 50 young researchers of the Institution, based on their publication record.
- In 2008, she was selected by Politecnico di Torino for the career acceleration program (first step).

Scopus Metrics

- 207 papers in peer-reviewed journals. h-index: 40, with 5253 citations.

Google Scholar Metrics

- 207 papers in peer-reviewed journals. h-index: 45, with 6472 citations

Memberships

- "AICIng (Associazione Italiana Chimica per l'Ingegneria)" that gathers all the professors and researchers in the field of Chemical Foundations of Technologies
- "SCI (Società Chimica Italiana).
- INSTM (Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali)

Roles as Visiting Researcher/Professor

- September 2019: Visiting Associate Professor at MIT (USA).
- April 2017: Visiting Professor at Universidad Catolica de Temuco and at Universidad de Santiago de Chile (Chile).
- May-June 2020: Visiting Researcher at Universidad de Las Islas Baleares (Spain).
- 3) 1997: Visiting Researcher at the Instituto Superior Tecnico de Lisboa (Portugal).

Oral presentations

Totally 18 as a speaker (excluded the invited talks and seminars)

Invited Talks and Invited Seminars

9 invited talks and 8 invited seminars

Participation in the scientific committees of International Conferences

- Evaluator of TOPIC 5 "Expanding catalysis concepts" for the selection of abstracts at Europacat2017 Florence (Italy) 27-31 August 2017.
- Member of the International Advisory Committee of the NANO VIII (4th International Symposium on Nanoporous Materials), Niagara Falls (Canada) 7-12 July 2017.
- Member of the National Advisory Board of the VII International Symposium on Group Five Elements Riccione (Italy), 8-11 May 2011.
- Member of the Organizing Committee of the V International Workshop Oxide 2012&AIZ day 2012 Torino (Italy) 23-27 September 2012.

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International collaborations	Prof. M. Bawendi MIT, USA (In September 2019, I was invited professor at MIT during the MITOR project 2018/2019: LIGHT Harvesting Antenna systems for solar Applications, funded by the Compagnia di San Paolo); Dr Antoine Thill – CEA, FR (partner in the Galilelo Projec 2016/2017 G16_34 "Hybrid imogolite nanotubes for environmental applications", funded by the Università Italo-Francese); Dr. F. Di Renzo – ENSCM, FR (partner in the SINCHEM Joint Doctorate program selected under the Erasmus Mundus Action 1 Program FPA 2013-0037); Dr P. Massian UPMC, FR (partner in the SOL-CARE Energy-065 project, EU-FP7 ERANETMED initiative JC-Energy 2014 call); Prof. N. Arancibia-Miranda, Univ. de Santiago de Chile and Prof. A. Gonzalez-Ruiz Univ Católica de Temuco, Chile (I was invited professor in 2017 in the framework of the FONDECYT project 11150088 through which the Chilean Agencia National de Investigación y Desarrollo ANID funds researchers exchange with foreign Countries); Prof. G.T. Palomino, Univ.de las Islas Baleares, ES (I was visiting researcher in 2002, working on Variable Temperature IR spectroscopy); Prof. F.M. Ribeiro, Inst Superior Tecnico de Lisboa, PT (I was visiting student in 1997).
National collaborations	Prof. Jenny Vitillo, Università dell'Insubria; Prof. I. Rossetti, Univ. di Milano (partner in the CARIPLO project DeN – Technology development of innovative strategies for the abatement of N-containing pollutants in water 2016/19); Profs. G. Cravotto, M. Manzoli, M. Chiesa, Univ. di Torino; Dr Sandra Doria, LENS, Univ. di Firenze, IT; Prof. Francesco Delogu Università di Cagliari; Profs. Diana Sannino and Vincenzo Vaiano, Università di Salerno.
Collaborations with companies	Drs Mario Salvalaggio, Davide Caiola, Erica Montanari, Stefano Zanardi, Gianluigi Marra ENI, IT; Dr Matteo Lega (FATER SpA); Dr. Franca Mannu, owner of NUREX Sassari, IT (we were partner in the POR/FESR 07/13 project MAGCHIP); Dr J.C. Mateo Velez, ONERA, FR (we were partner in the 2012-2015 ESA tender: Characterisation of Dust and Sample Properties in Lunar Environment"; AESA Torino (partner of STEPS project: Systems and Technologies for Space Exploration- 2009-2011): Dr Massimiliano Antonini (HYYTECH).
Current research interests	▪ Materials science and technology, and chemical engineering, focusing on the synthesis and characterization of (nano)materials for gas adsorption/storage; energy storage&production; heterogeneous catalysis, photocatalysis (including water splitting and advanced oxidation processes for water remediation) and biomedical applications (including biomolecules detection and the study of nanomaterials toxicity and ecotoxicity).

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

Torino, the 15th of September, 2025