

Current and Previous positions

2006 to today: Cristina Leonelli is full professor in Chemical Foundations of Technologies (SSD: CHIM/07; from 09/05/2024, renamed as 03/CHEM-06).

2000-2006: She was back to Modena and Reggio Emilia University at the Faculty of Engineering, then renamed Department of Engineering "Enzo Ferrari"-DIEF.

1999-2000: She covered the role of associate professor in the same discipline at the Faculty of Engineering of the University of Naples "Federico II".

1992-10998: She got the position of researcher/assistant professor at the Faculty of Engineering (Modena University, later renamed University of Modena and Reggio Emilia) specializing in the field of Chemistry Applied to Ceramic Materials.

1991: She got Ph.D. in Chemistry after several experience supported with national fellowships in Modena and in U.S.A..

1986: 5-years Degree in Chemistry at the University of Modena, Italy.

Visiting academic positions

Cristina Leonelli visited several research centres in Europe and abroad for 7-10 days (Dept of Materials, Imperial College, London, UK; High Pressure Research Centre of the Polish Academy of Science in Warsaw, Poland; New York State College of Ceramics at Alfred University; Glass Research Department, National Research Centre, Giza, Egypt; Dept. Advanced Materials Engineering, Sunchon National University, S. Korea, Synchrotron facility at Lucas Glenn, ANSTO, Australia). The longest stay was a 40 days (16/07/2022 to 31/08/2022) Visiting Professorship at the Center for Advanced Studies in Nanotechnology for Chemical, Food and Agricultural Industries, Kasetsart University, Bangkok, Thailand under the "Reinventing University Program-Activity 2, Visiting Professor/Collaborating Professor". The primary duties were to assist with assigned research, prepare course materials, deliver seminars to Master and Ph. D. students, prepare and execute appropriate modes of assessment.

Teaching activities and PhD supervision

Teaching activity as course lecturer for chemistry courses within her disciplinary sector, CHIM/07, has been carried out by Cristina Leonelli as follows:

1992-1999: Bachelor's degree programmes in Computer Engineering, Electronic Engineering and Materials Engineering, and for the Diploma course in Mechanical Engineering, Ceramics specialisation, at the Faculty of Engineering, at both the Naples and Modena campuses.

Since 2000: Bachelor degree programmes in Electrical Engineering, Computer Engineering and Mechanical Engineering.

Since 2020, the three-year Bachelor degree programme in Vehicle Engineering was added.

She has supervised numerous Master's and PhD theses and she was a member of the doctoral board of professors of Ph.D. Course of Industrial and Environmental Engineering (2014 to 2022) and Ph.D. Course in Civil, Environmental and Materials Engineering (2023 till now) at the Department of Engineering "Enzo Ferrari", University of Modena and Reggio Emilia.

Administrative role and position responsibility

Since 2000, Cristina Leonelli has been a faculty member in the disciplinary area 03/CHEM-06 – Chemical Foundations of Technologies (ex CHIM/07 – Chemical Foundations of Technologies) at the Department of Materials and Environmental Engineering of the Faculty of Engineering, which became the Department of Engineering "Enzo Ferrari" in 2012. Until 2021, she coordinated the research activity at the Microwave Application Group (MAG).

She has served on several departmental committees and working groups, including the Student Recruitment and Career Guidance Committee (Commissione Orientamento in Ingresso e in Uscita).

Among her most significant institutional appointments are:

Scientific Director of the "Enzo Ferrari" Science and Technology Library, University of Modena and Reggio Emilia (2016-2022).

Director of CRIS – Interdepartmental Research Centre on Safety and Risk Prevention, University of Modena and Reggio Emilia (25 October 2018-24 October 2024), a multidisciplinary research centre with administrative autonomy.

For the three-year term 2018-2020, she also served as Chair of the Selection Committee for the Italian National Scientific Qualification (ASN) procedure in the disciplinary sector SC: 03/B2 – Chemical Foundations of Technologies.

Research expertise

Her field of interest has been solid state chemistry with particular interest in the reactivity of ceramic powders and transition from amorphous to crystalline state. She has a personal experience in designing new composition, preparation and characterization of different powder and bulk ceramic materials as well as for application developments. She has also been active in the field of several innovative preparation techniques and microwave heating applied to materials processing and synthesis. She has been interested in modeling of material nano and microstructure and their relationship with macroscopic properties, such as the determination of failure probability in composite or bulk materials. A recent research field from 2008 is the alkali activation of aluminosilicate materials to obtain cement-like formulation with sustainable starting powders as industrial wastes or mines residues and debris.

National and international project management and collaborations

She has coordinated several national research projects and some international cooperation projects. At European level she was active in the Board of the COST Action D10 (2000-2002) and

she coordinated the WG 003/04 - "Ultrasonic and microwave assisted synthesis of nanometric particles" in COST Action D32 (2004-2009). She was the Italian coordinator of the Joint Research Fellowship of the "The Royal Society" (UK) (2002-2004). At international level she coordinated the Bilateral mobility project promoted by the Italian Ministry of Foreigner Affairs: Sino-Italian Joint Commission for S&T Co-operation 2002-2005; Russian-Italian Joint Commission for S&T Co-operation 2002-2005, South Korea-Italian Joint Commission for S&T cooperation 2007-2009. She has also been Supervisor of ISTC Project with the Armenian counterpart: «Stone and Silicates» (2007-2010 and 2016-2018), and subcontractor of the European Cooperative Research under the ERA-NET MATERA Programme (2009-2012). She is member of the International co-operations in the Tekes-funded GEODESIGN project coordinated by the University of Oulu, Finland (2016-2018). Prof. Leonelli has been coordinator of the research group of DIEF partner in the European project FLOW - "Lightweight alkali-activated composite foams based on secondary raw materials", on EU funds ERA-MIN 2 Joint Call 2017, from 01/05/2018 to 30/04/ 2021. She also coordinates the DIEF research unit of the SIMPLIFY - "Sonication and Microwave Processing project of Material Feedstock", funded on SPIRE Call funds: H2020-NMBP-ST-IND-2018-2020 (INDUSTRIAL SUSTAINABILITY) from 01/11/2018 to 30/04/2023. Since 12 Sept 2018 till 11 March 2022 she has covered the role of Scientific responsible for the DIEF Research Unit in the PNR 2015-2020 funded national project: ARS01_00697 "AGM for CuHe –Advanced Green Materials for Cultural Heritage – Materiali di nuova generazione per il restauro dei Beni Culturali: nuovo approccio alla fruizione". From 1 July 2025, she is coordinating the research unit of the four-year project 'Piloting Research and Innovation at Maritsa Iztok using wasted clays extracted during lignite mining for traditional and alternative construction materials – PRIMI', funded by the European RFCS-2024-JT programme.

Prizes and awards

In 2023, at the AMPERE's 19th International Conference on Microwave and High-Frequency Applications held in Cardiff (UK) from 11 to 14 Sept., Cristina Leonelli was nominated Fellow of AMPERE EUROPE, following her sterling work for AMPERE over the past 20 years. AMPERE EUROPE(<https://www.ampereurope.org/>) is a scientific on-profit association for microwave power in Europe for research and education.

In 2024 she received the Ricky Metaxas Pioneer Award at the 5th Global Congress Microwave Energy Applications (5GCMEA 2024) which was held in Fukuoka, Japan, during July 22-25, 2024. This award recognized her pioneering studies in synthetic chemistry and materials processing under microwave irradiation.

Positions in national and international associations and institutions

Cristina Leonelli is a member of several scientific associations in Italy and internationally, in some of which she has held leadership positions.

She has served as the National Coordinator of the Geopolymer Working Group of the Italian Ceramic Society (Società Ceramica Italiana) since its establishment in 2008, organizing an annual scientific workshop on behalf of the group. She was a member of the Steering Committee of the Interdivisional Green Chemistry Group of the Italian Chemical Society (Società Chimica Italiana, SCI)

from 2009 to 2012 and was re-elected for the 2013-2015 term. From 2021 to 2025, she served on the Steering Committee of the Division of Chemistry for Technologies of the Italian Chemical Society and has been serving as Chair of the Division for the 2026-2029 term. From 2014 to 2019, she was a member of the Steering Committee of AICIng (Italian Association of Chemistry for Engineering), the national association representing academics belonging to the disciplinary sector CHIM/07 – Chemical Foundations of Technologies.

She has been Elected President of the European scientific association for the study of power microwaves - AMPERE EUROPE in the period 2009-2019, after having been member of the Board of Directors since 2003 and subsequently member of the Management Committee. Since 2009 it also takes care of the AMPERE website and serves as Fellow as well as affiliate member. She covers the role of Italian representative in the Technical Committee TC05- Nuclear and Hazardous Waste Vitrification, International Commission on Glass-ICG since 2007. As member of the ACerS (American Ceramic Society) she serves as member of the "David W. Richerson Educational Outreach Award" sub-committee since 17 March 2025.

Dissemination and Editorial activity

Cristina Leonelli presented the results of her work in international and national conferences some of those have seen her as invited speaker, member of Organizing and Technical Committees. She has been a member of the Editorial Board of Ceramics in Modern Technologies (2018–2020), the Korean Journal of Materials Research (official publication of the Materials Society of Korea; Print ISSN: 1225-0562; Online eISSN: 2287-7258), the Journal of Microwave Power and Electromagnetic Energy (a quarterly publication of the International Microwave Power Institute (IMPI), published by Taylor & Francis; Print ISSN: 0832-7823), Inorganics (MDPI; since its foundation; ISSN: 2304-6740), and Frontiers in Solid State Chemistry (since 2020; Electronic ISSN: 2296-2646).

Regarding the bibliometric parameters (updated in August 2026) Prof. Leonelli has a h-index author: 61, with 14,208 overall citations on 496 reviewed works on SCOPUS, as follows: Articles (371), Conference Paper (81); Review (15), Book Chapter (19); Editorial (8) Book (1). She is co-inventor of 4 national and 4 international patents.

Research Evaluation, Scientific Service and Innovation Activities

Cristina Leonelli has established collaborations with companies at the local, national, and international levels. Applied research and consultancy activities have consistently been formalised through contractual agreements managed by the Department of Engineering "Enzo Ferrari" or by CRIS- Interdepartmental Research Centre on Safety and Risk Prevention at the University of Modena and Reggio Emilia. She also conducted part of her research and consultancy activities through INSTM (National Interuniversity Consortium of Materials Science and Technology), headquartered in Florence, Italy.

In addition to carrying out numerous reviews for various international scientific journals, she works as a reviewer for Italian (CNR; MUR) as well as foreign research institutions (European Commission-European Science Foundation (ESF), Royal Society-UK, Engineering and Physical Sciences Research Council (EPSRC)-UK, The Netherlands Organisation for applied scientific research (TNO), The Israel

Science Foundation (ISF), Katholieke Universiteit Leuven-B; The Research Foundation – Flanders (FWO)-B; The Fonds de la Recherche Scientifique (FNRS)-B; The Helmholtz Association of German Research Centers-D, Natural Sciences and Engineering Research Council of Canada (NSERC), Slovak Research and Development Agency-APVV, Shota Rustaveli National Science Foundation of Georgia (SRNSFG)).