



Curriculum Vitae



Personal data

Name & Surname **Enrico Rizzarelli**
([orcid ID:0000-0001-5367-0823](https://orcid.org/0000-0001-5367-0823))

Citizenship Italian

Date of birth October 2, 1943

Place of birth Catania, Italy

Fiscal Code RZZNRC43R21C351L

VAT Code

Address 21, Via Asilo Sant'Agata, 95129, Catania, CT, Italy

Affiliation

Department of Chemical Sciences, University of Catania

Address Viale Andrea Doria 6, 95125 Catania, Italy

Phone/Mobile +39 095 7385070

Fax +39 095 337678

E-mail erizzarelli@unict.it

Institute of Crystallography, National Research Council (CNR)
Via Paolo Gaifami 19, 95126 Catania, Italy
+39 095 7338442
enrico.rizzarelli@ic.cnr.it

Positions

Teaching

Metallomics

- Metallomics and Applied Biotechnology, Scuola Superiore, University of Catania, 2001-2003
- Applied Biotechnology, Scuola Superiore, University of Catania, 2003-2005.
- Metallomics with proteomics elements, Master Degree in Bio-molecular Chemistry, from 2004 up to date.
- Inorganic Chemistry 3, Chemistry Degree, from 2003 to 2013.
- Bioinorganic Chemistry, from 1998 to 2013.
- Inorganic Chemistry, from 1977 to 2003.
- Advanced Inorganic Chemistry, from 1973 to 1977.
- Qualitative Analytical Chemistry, from 1980 to 1983 and from 1991 to 1993.

Current position	<p data-bbox="491 315 671 349">Emeritus (2016-)</p> <p data-bbox="491 360 719 394">University of Catania</p> <p data-bbox="491 398 1469 461">Associated (with research responsibility) to the Institute of Crystallography, National Research Council (CNR)</p>
Additional positions	<p data-bbox="491 548 1321 582">Invited Lecturer, Scuola Normale Superiore, Pisa, Italy, (February-April 2012)</p> <p data-bbox="491 593 1469 685">Associate Professor of Bioinorganic Chemistry, University of Aix-en-Provence, Marseille III, (2000-2001)</p> <p data-bbox="491 696 1469 788">Invited Lecturer "Convention Intercantonal pour l'enseignement du 3e cycle en Chimie, Suisse(05/1993-06/1993)</p> <p data-bbox="491 799 1374 833">Visiting Professor, Brigham Young University, Provo, Utah (May-September 1989)</p> <p data-bbox="491 844 1289 880">Fellowship (Ministry for Foreign Affairs) Charles University, Prague (1968)</p>

**Scientific
Committees/Commissions**
(Member if not otherwise specified)

- Steering Committee of the Italian Group of Thermodynamics of Complexes
- Chairman of the Italian Association of Calorimetry and Thermal Analysis (AICAT)
- Chairman of the Interdivisonal Group of Biological Systems and Processes of the Italian Chemical Society
- Board of Directors of the Division of Biological Systems and Processes of the Italian Chemical Society
- Chairman of the Sicily Section, Italian Chemical Society
- CNR Representative within the Commission on Biotechnology of the International Union of Pure and Applied Chemistry (IUPAC)
- CNR Commission Representative within IUPAC
- C.N.R. Committee for Neuroscience
- Chairman of the CNR-University of Catania Joint Steering Committee
- MURST (Ministry for University, Science and Technological Research)
- Committe for the Chemistry Degree in Agri-industrial Biotechnology (Verona)
- "European Bioinorganic Chemistry" (EUROBIC I) Steering Committee
- Advisory Commission for the Biotechnology and Bioinstrumentation II Project (1993)
- Advisory Committee for the Cooperation with Mediterranean Countries
- Technical-Scientific Committee of the Journalist National Association
- C.I.C.I.S.A Deputy-Chairman and Manager of the Catania Section
- Scientific Committee of the Italian Employers' Federation S.F.C.-F.I.M. (Formation and entrepreneurship in Southern Italy) Project of the Italian Employers' Federation
- Ministry for Foreign Affairs (MAE) Committee within N.A.T.O Scientific Commission
- Scientific Committee of the "Study and Research for Southern Italy Association"
- Evaluation Team for the Université Paris VI
- Chairman of the International Evaluation Team for the evaluation of the Research Activity of the "G. Ciamician" Chemistry Department (University of Bologna)
- Italian Employers' Federation Commission for Research and Innovation
- Steering Committee on University of the Italian Employers' Federation
- Italian Technology Platform on Sustainable Chemistry ("IT SusChem")
- International Advisory Committee of the "Symposium on Applied Bioinorganic Chemistry"

Scientific Councils
(Member if not otherwise specified)

- Technical-Scientific Council of the "Biotechnology and Bioinstrumentation" I Project (C.N.R.)
- Scientific Council of the Molecular Design Department , CNR (2006-2009)
- Scientific Council of the Catania-Ricerche Consortium
- Scientific Manager of the Catania Section of the "Metals in Biological Systems and Environment" National Consortium
- Advisory Team of the Technical-Scientific Commission of the Ministry for Extraordinary Intervention in Southern Italy
- Technical-Scientific Council of the Siena-Ricerche Consortium
- Technical-Scientific Council of the "Biotecnologie" II Project (CNR)
- Technical-Scientific Council for Depressed Areas – Ministry for University and Scientific Research
- Advisory Council for international orientation in research – Ministry for University and Research (MIUR)
- Scientific Council of French-Italian Universities
- Biogem Scientific Council

Scientific Bodies/Editorial Boards

- Thermochimica Acta, Editorial Board
- Bioinorganic Chemistry and Applications, Editorial Board
- Scientific Reports, Editorial Boards
- Universitas, Scientific Council
- La Chimica e l'Industria, Editorial Board
- BioTec, Scientific Board
- Peer-reviewer for J. Am. Chem. Soc., Inorg. Chem., Dalton Trans, Inorg. Chim. Acta, J. Inorg. Biochem., Termochim. Acta and other international Journals.

Scientific Societies/Membership

Italian Chemical Society, American Chemical Society, Italian Group of Thermodynamics of Complexes, Italian Association of Calorimetry and Thermal Analysis, American Association for the Advancement of Science, The New York Academy of Sciences, Society for Neuroscience.

Appointments

- Chairman of the Department of Chemical Sciences, University of Catania, Italy
- Chairman of the Chemistry Master Course
- Chairman of the PhD Chemistry Council
- Member elected of the Senate of the University of Catania
- Member of the University Committee
- Rector of the University of Catania (1994-2000)
- Delegate of the Rectors' Board and Member of the MIUR Committee for the "Research, Technological Development and High Education" (1996-2000)
- Conference of Italian Universities Rectors (CRUI) Representative within the Confédération des Conférences des Recteurs de L'Union Européenne (CRE)
- CRUI Representative within the MURST-Defense Ministry Joint Committee
- CRUI General Secretary (1998-2000)
- Chairman of the Evaluation Team of Bari and Turin Institute of Technology (CRUI) as well as of Tampere and Thessaloniki University (CRE)
- Member of the Institutional Evaluation Program (CRE)
- Chairman of the Scuola Superiore, University of Catania
- Manager of the Section "Biologically Oriented Enzyme Models" of the CNR Institute for the Study of Natural Compounds of Foodstuff and Chemico-Pharmaceutical interest (Catania), currently Section of the Institute of Institute of Crystallography, National Research Council (CNR) (Headquarter : Bari) (1994-1998)
- Member of the Working Party for University political and legislative issues (MIUR)
- Member of the MIUR Panel for the triennial evaluation of research (VTR 2001-2003 - Chemistry)
- Member of the Inter-Ministry Committee for the development of Scientific and Technological Culture (2006-2008)
- Member of Panel of the Second Strategic Program
- Member of the FIRB (Italian Funds for Basic Research) Committee (July 2006-June 2007)
- Chairman of the National FIRB Committee (2007-2009)
- Member of the evaluation Committee for the following Universities: Lecce, Calabria, Sassari and Potenza
- Member of the Working Group of the University of Foggia for the elaboration of the University development Project

Education

Degree	<i>Laurea</i> , Industrial Chemistry
Year	1967
Granting Institution	University of Catania
University type	State University

Languages

Mother tongue	Italian
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Additional Language	Inglese
Reading	Good
Writing	Good
Listening	Good
Spoken	Good

Scientific activity

Main research interests

- Thermodynamics of complexes
- Molecular recognition assisted by d-block metal ions
- Synthesis, characterization and biological activity of copper(II) coordination compounds
- Enzymes and metallo-enzymes model systems
- Metals, memory and neurodegeneration
- Metallostasis and diseases induced by protein misfolding
- Angiogenesis and intracellular protein homeostatic processes
- Pharmacological chaperones

Publicazioni internazionali su riviste ISI

Paper type	Total	Last ten years (2009-2019)	h-index	Total Citations
Original papers	321	116	45	8606

- Co-editor of "Neurodegeneration: Metallostasis and Proteostasis", Royal Chemical Society, London (2011).
- Guest Editor Thermochemica Acta (2004)
- Co-editor of "Chemistry and Properties of Biomolecular Systems", Kluwer, (1991).
- Co-editor of "Metal Complexes in Solution" – Piccin (Padova).
- Guest Editor Gazzetta Chimica Italiana (Vol. 113, No. 7-8, 1983).
- Several informative/popular papers

Patents and scientific awards

- EP 1176154 (2004) Carnosine derivatives. A process for the preparation thereof and pharmaceutical compositions containing them.
Enrico Rizzarelli, Graziella Vecchio, Diego La Mendola
University of Catania.
- MI2006A000894 (May 5, 2005) Sintesi di ciclodestrine funzionalizzate con Etodolac come agenti di rilascio sito specifico.
Enrico Rizzarelli, Antonino Puglisi, Graziella Vecchio, Diego la Mendola
University of Catania.
- MI2006A000690 (April 5, 2006) Coniugato di trealosio con carnosina ad attività antiossidante, stabile all'idrolisi enzimatica. Procedimento per la sua preparazione e composizioni farmaceutiche, Cosmetiche e Nutraceutiche che lo contengono.
Angela Maria Amorini, Francesco Bellia, Giuseppe Lazzarino, Enrico Rizzarelli, Graziella Vecchio
University of Catania
- Eur. Pat. Appl. (2007), EPXXDW EP 1860110 A1 20071128 CAN 147:542064 N2007:1360399.
Preparation of cyclodextrins functionalized with etodolac as specific site release agents.
Enrico Rizzarelli, Graziella Vecchio, Antonino Puglisi, Diego La Mendola.
University of Catania.
- Eur. Pat. Appl. (2007), EPXXDW EP 1860116 A1 20071128 CAN 148:17656 AN 2007:1356776.
Trehalose conjugate with carnosine having antioxidant activity, stable to enzymic hydrolysis, procedure for its preparation, and pharmaceutical, cosmetic and nutraceutical compositions that contain it.
Enrico Rizzarelli, Graziella Vecchio, Giuseppe Lazzarino, Angela Maria Amorini, Francesco Bellia.
University of Catania.
- Eur. Pat. Appl. (2007), EP 1860110A1
Cyclodextrins functionalised with etodolac as specific site release agents.
Enrico Rizzarelli, Antonino Puglisi, Graziella Vecchio, Diego La Mendola.
University of Catania.
- Italian Pat. (2014) MI2014A001395
Nuovi derivati di acido ialuronico e carnosina.
S. Sciuto, V. Greco, E.Rizzarelli, F. Bellia, V. Lanza, S. Vaccaro, L.Messina.
CNR, University of Catania.and Fidia Pharmaceuticals Inc.
- PCT/IB/2015/055782
Derivatives obtained from hyaluronic acid and carnosine.
S. Sciuto, V. Greco, E.Rizzarelli, F. Bellia, V. Lanza, S. Vaccaro, L.Messina.
CNR, University of Catania and Pharmaceuticals Inc.

- EP317455, 27.02.2019 [2019/09]
Derivatives obtained from hyaluronic acid and carnosine. S. Sciuto, V. Greco, E.Rizzarelli, F. Bellia, V. Lanza, S. Vaccaro, L.Messina.
CNR, University of Catania and Fidia Pharmaceuticals Inc.
- WO 2019/069258
Pharmceutical compositions containing hyaluronic acid and carnosine and relative use. A. Schiavinato, V. Greco, L. Messina, S. Vaccaro, E.Rizzarelli, S. Sciuto.
CNR, Università di Catania e Fidia Farmaceutici SpA
- US 10,364,299B2 (July 30, 2019)
Derivatives obtained from hyaluronic acid and carnosine. S. Sciuto, V. Greco, E.Rizzarelli, F. Bellia, V. Lanza, S. Vaccaro, L.Messina.
CNR, Università di Catania e Fidia Farmaceutici SpA
- EA 032076B1 (April 30, 2019)
Derivatives obtained from hyaluronic acid and carnosine. S. Sciuto, V. Greco, E.Rizzarelli, F. Bellia, V. Lanza, S. Vaccaro, L.Messina.
CNR, Università di Catania e Fidia Farmaceutici SpA
- 2011 - Amedeo Avogadro Medal, Italian Chemical Society
- 2008 – Member of the Science Academy (University of Bologna)
- 2002 – Calabria International Award

Seminars/Lectures and Meetings

Over 150 seminars and lectures presented in Italian and International Universities/Institutions.
Chairman and/or member of the Scientific Committees of National and International Meetings

Collaborations

- Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina (Prof. S. Cuzzocrea)
- “Mario Negri” Institute (Professor M. Salmona)
- Molecular Neurology Institute, Center for excellence, University of Chieti (Professor S. Sensi)
- Pharmaco-Chemical Department, University of Bari (Professor G. Natile)
- Zurich Technological Institute, Lugano, Switzerland (Professor M. Parrinello)
- Scuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste (Professor G. Legname)
- European Brain Research Institute, Rome (Professor P. Calissano)
- Physical Chemistry Department, University of Palermo (Professor B. Pignataro)
- Department of Chemistry, University of Göteborg, Sweden (Professor Ö. Hansson)
- Harvard Medical School, Laboratory of Oxidative Stress, USA (Professor A.I. Bush).
- Department of Inorganic and Analytical Chemistry, University of Debrecen, Hungary (Professor I. Sovago).
- Department of Biochemistry, University of Bath, UK (Dr. D. R. Brown)
- Chemistry Department, University of Paris, France (Professor O. Reynaud)
- Chemistry Department, Bioinorganic Chemistry-CNRS, University of Aix-en-Provence-Marseille III, France (Dr. Marius Reglier)
- Laboratoire de Chimie, Museum d'Histoire Naturelle, CNRS – Paris, France (Dr. T. Le Doan)
- Chemistry Department, University of Naples (Professor C. Pedone)
- Endocrinology Institute, University of Catania (Professor R. Vigneri)
- Biochemistry Institute, University of Catania (Professor M. Alberghina)
- Biological Chemistry Institute, University of Genoa (Professor A. De Flora)
- Organic Chemistry Institute, University of Parma (Professor R. Marchelli, Professor R. Ungaro)
- Departamento de Química Inorgánica, Universitat de Barcelona, Spagna (Professor V. Moreno)
- Swarthmore College, Swarthmore, Pennsylvania, USA (Professor R.F. Pasternack)
- Department of Chemistry, Eugene, Oregon, USA (Professor C. Bustamante)
- Chemistry Department, Brigham Young University, Provo, Utah, USA (Professor R. M. Izatt)
- FIDIA-SUD SpA, Catania (Dr. S. Mangiafico)
- Medical Pathology Institute, University of Catania (Professor A. Mangiameli)
- Department of Inorganic, Metallorganic and Analytical Chemistry, University of Padua (Professor M. Vidali)
- Chemistry Department, University of Roma (Professor V. Carunchio)
- Chemistry Department, University of Ferrara (Professor F. Pulidori)
- Organic Chemistry Department, Università di Palermo (Professor L. Pellerito)
- School of Chemistry, Leeds University, UK (Professor L. D. Pettit)
- Research Institute, Department of Biochemistry, Toronto (Professor B. Sarkar)
- Chemistry Department, UWIST, Cardiff, UK (Professor D. R. Williams)
- Chemistry Department, University of Trieste (Professor L. Randaccio)
- Analytical Chemistry Department, University of Turin (Professor G. Ostacoli)
- Chemistry Department, University of Siena (Professor R. Barbucci)

Collaborations with National and Foreign Agencies/Institutions

- Epitech Inc. (Italy), NDA approved by the Chemistry Department (2017)
- POR (Regional Projects), Sicily, "Molecular diagnostics and prognostics of prostate tumors", Principal Investigator: Fidia Pharmaceuticals Inc. (2012)
- Public-Private Laboratories, CNR-IBB and Wyeth-Catania (2008)
- Fidia Pharmaceuticals Inc., NDA approved by the Chemistry Department (2010)
- Prana (Australia), NDA approved by the Chemistry Department (2008)
- Flamma (Italy), NDA approved by the Chemistry Department (2006)

Research Projects Evaluation

- Funds for Applied Research (FAR) Projects (MIUR):
 1. "Exploitation of industrial products and bio-products for pharmaceuticals and fine chemicals", CHIMECO Inc. (MIUR – Identification #: 1080)
 2. "A new post-genomic technological platform for new drugs" AXXAM Ltd., Milan, DM8/8/2000 n.593 art.9 (MIUR)
 3. "BPCO new therapeutic approaches", Strategic Projects (MIUR), Chiesi Pharmaceuticals.
- Several projects in the capacity of Member (2006-2007) and Chairman (2007-2009) of the FIRB Committee
- Foreign Institutes/Agencies Projects:
 - "Personalized Pharmacological Therapy for Cataract: A future Alternative to Surgical Removal", Israel Science Foundation, 2016.
 - "Elucidation of the molecular nature of the vasculopathy of Alzheimer's Disease", Neurological Foundation of New Zealand, 2012
 - "Exploring the function of Insulin Degrading Enzyme (IDE) with small modulating ligands", ANR (French National Research Agency), 2011
 - "Dynamic characterization of the effects of heavy metal poisoning using live cell Microscopy" Israel Science Foundation, 2010
 - "Dendrimer-cyclodextrin conjugates as delivery vehicles for gold nanoparticles", Joint research grant NSF (National Science Foundation, USA) and NRF (National Research Foundation, South Africa), 2008
 - "Micro HPLC assembly of peptides, protein research and proteomics", Hungarian Scientific Fund (OTKA) 2006

Projects Responsibility

Project	Duration months	Position
PRIN 1998: Metalloproteins and Miniaturized Systems: Structure, Activity and Applications	24	Unit Resp.
PRIN 2000: Supramolecular Systems Based on Oligopeptididic Foldamers	24	Unit Resp.
PRIN 2002: Molecular Recognition and Formation of Supramolecular Adducts containing Metal Ions for Innovative Applications in Diagnostic and Therapy	24	Nat. Coord.
PRIN 2004: Molecular Aspects of proteic conformational pathologies. Role of environmental factors on the structural changes of proteins for the design and synthesis of compounds with anti-aggregating, antioxidant, antiglycating and chelating activity as well as for diagnostic applications.	24	Nat. Coord.
PRIN 2006: Role of the interactions of metal ions with the Ubiquitine/Proteasoma system in the pathogenesis of conformational diseases.	24	Nat. Coord.
PRIN 2008: The inorganic aspect of neurochemistry: the dyshomeostasis of transition metal ions, A β degradation and trophic factors in AD.	24	Nat. Coord.
PRIN 2010-2011: Metal Ions in Age-dependent Pathologies: Metallostasis and Proteostasis in Neurodegeneration	36	Nat. Coord.
FIRB Negotiated Projects 2001: Neurodegenerative Pathologies Resulting from the Altered Processing of Neuronal Proteins. Animal Models and in vitro Cellular Cultures.	48	Unit Resp.
FIRB Strategic Program 2003: Folding and Aggregation of Proteins, Metal Ions and Molecules in Conformational Pathologies	48	Nat. Coord.
FIRB Internationalization 2005: Environmental Factors in AD and Type 2 Diabetes (UniCT-Harvard Medical School)	36	Nat. Coord.
EURAMY (European Amyloid), STREP 2006 (Coordinator: Professor Per Westermark)	36	Unit Resp.
"Agriculture and Agri-industry" in "Structure, Function and Industrial Applications of Plant Laccases and Peroxidases" European Project (Coordinator: Professor S. C. Fry)	36	Nat. Coord.
Human Capital and Mobility in Supramolecular Chemistry. (Coordinator: Professor J. M. Lehn)	24	Unit Resp.
COST CHEMISTRY WORKING GROUP on "Bio-mimetic Catalytic Activation of Dioxygen Species by Metallo-enzymes and Models" . (Coordinator: Professor G. Speer)	36	Unit Resp.
PON01_01078 "Identification of biomarkers and development of diagnostic and therapeutic methods in oncology and vascular biology "	36	Unit Resp.
PON02_00607_3421644–Public-Private Laboratories strengthening "Study of small cytoprotective molecules with dual applicability in Alzheimer Disease and Diabetes through transplant of Pancreatic Islets" (2012)	36	Proj. Coord.
PON02_00607_3621894- Public-Private Laboratories strengthening "Oncology and regenerative medicine: novel therapeutic approaches based on bio-metals" (2012)	36	Proj. Coord.

PON03PE_00216_1 - "Drug Delivery: Carriers for a Sustainable Innovation" (2015)	24	Proj. Coord.
POFESR 2014-2020 –Validation of a novel therapeutic compound for the treatment of primary chronic pain intended to limit persistent inflammation as well as the associated neuroinflammation (ProTIDel) (2019)- Scientific Manager: Epitech Inc.	24	Unit Resp.

Legend: Unit Resp. = Responsible of the Local Unit; Nat. Coord.= National Coordinator; Proj. Coord.= Project coordinator