

Massimiliano D'Arienzo is Associate Professor in General and Inorganic Chemistry at the University of Milano-Bicocca. He works in the NanoMat@Lab at the Department of Materials Science in the University of Milano-Bicocca. His expertise spans from the synthesis by soft chemistry methods of ceramic materials (TiO₂, ZnO, SiO₂ and clays nanoparticles) and polysilsesquioxanes with controlled morphological and surface features, to their exploiting in hybrid materials employed in a wide range of applications (in particular photocatalysis and automotive). In this context, he developed fruitful international collaborations with the University of Bordeaux, University of Hamburg, University of Stanford and the Institute of Macromolecular Chemistry at the Czech Academy of Sciences. He is also active on the study of photogenerated paramagnetic centers (defects, reactive intermediates, transition metal centers) in TiO₂ by ESR spectroscopy. In this frame, the results of his research activity have provided a relevant scientific and technological impact, leading to a number of peer-reviewed papers, three book chapters and three patents (one of them resulted in the production and implementation of a material in the industrial plants).

- PERSONAL INFORMATION

Massimiliano D'Arienzo (orcid.org/0000-0002-5291-9858), Date of birth: 1980 September 3,

Nationality: Italian

<http://www.mater.unimib.it/it/sezioni/dipartimento/personale/docenti/massimiliano-darienzo>

- EDUCATION

2014: National Scientific Habilitation for the role of Associate Professor of General and Inorganic Chemistry by Italian Ministry of Education University and Research

2008: PhD in Chemistry, Department of Materials Science, University of Milano-Bicocca, Italy
Supervisor: Franca Morazzoni. During the PhD he joined the group of Prof. O. Diwald (Technische Universität of Wien)

2004: Master in Chemistry, Department of Metal-Organic Chemistry, University of Milano, Italy
Supervisor: Francesca Porta, Gianfranco Ciani

- CURRENT POSITION

2018: Associate Professor in General and Inorganic Chemistry at the University of Milano-Bicocca

- PREVIOUS POSITIONS

2012 –2018: Assistant Professor, of General and Inorganic Chemistry (type a), Department of Materials Science, University of Milano-Bicocca

2009 – 2012: Post Doc, Department of Materials Science, University of Milano-Bicocca, Italy;

- SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2012–currently: 1 PhD student, more than 10 Master and bachelor students at Dept. of Materials Science, University of Milano-Bicocca

- TEACHING ACTIVITIES

2006-2008: Lecturer in the courses “Physical Chemistry II” in the Bachelor Degree in Chemistry, University of Milano-Bicocca

2008-2012: Lecturer in the courses “Laboratory of General and Inorganic Chemistry” in the Bachelor Degree in Chemistry, University of Milano-Bicocca

2012-Currently: Responsible of the course “Laboratory of General and Inorganic Chemistry”, Bachelor Degree Materials Science, University of Milano-Bicocca

2017: Co-Responsible of the course "Formulation Chemistry", Master Degree in Chemistry, University of Milano-Bicocca

- ORGANISATION OF SCIENTIFIC MEETINGS

2018: Co-organizer of the Workshop Horizon Chem 2018: "Nuove strategie scientifiche: la chimica delle formulazioni", 6 March, Milano, Italy (about 300 participants)

- COMMISSIONS OF TRUST

2014: External examiner for international PhD committees, Universidad Autonoma de Madrid, Spain

2015: Reviewer for a project proposal of the Netherlands Foundation for Fundamental Research on Matter, FOM

2017: Reviewer for a project proposal of the National Science Center, Poland

2019: Reviewer for a project proposal of the Croatian Science Foundation

- MAJOR COLLABORATIONS

- Prof. Thierry Toupance (Université Bordeaux 1) working on charge trapping properties TiO₂ heterojunctions for photocatalytic applications

- Prof. Matteo Cargnello (University of Stanford) working on tailored ZnO nanomaterials for (photo) catalytic applications

- Prof. Libor Matejka (Czech Academy of Sciences, Institute of Macromolecular Chemistry), working on mechanical properties of polymer nanocomposites

- Prof. Sandra Diré (University of Trento) working on synthesis of polysilsesquioxanes and solid state NMR investigation of hybrid materials

- Prof. Riccardo Ruffo (University of Milano-Bicocca) working on electrochemical characterization of oxide nanomaterials as cathode or anode in sodium ion batteries

- Prof. Alessandro Pegoretti (University of Trento) working on thermomechanical properties of hybrid materials

- SCIENTIFIC PRODUCTION

Massimiliano D'Arienzo authored 58 papers in international ISI journals, 3 patents, 3 chapters in international books, more than 40 communications at international conferences (*h*-index 23).

- INVITED SEMINARS

- May 2014: *"The Key Role of the Morphological Features in Upgrading the Functional Properties of Oxide Materials"*, Università degli Studi di Milano, Italy

- September 2014: *"The key role of the morphological features in tuning the functional properties of oxide nanomaterials"*, CNRS Strasbourg, France

- June 2018: *"Particle Shape & Molecular Architecture: powerful tools for tailoring the properties of inorganic and hybrid materials"*, University of Hamburg, Germany

- July 2019: *"Particle Shape & Molecular Architecture: powerful tools for tailoring the properties of hybrid nanocomposites"*, Politecnico di Torino, Italy

- PROJECTS

2019 (running): Local Coordinator of the Progetto Nazionale Lauree Scientifiche di Scienza dei Materiali

2019 (running): Research Contract with Previero-SRL on Rubber Devulcanization

2017: FFABR grant (Fondo per il finanziamento delle attività base di ricerca), financed by ANVUR (Agenzia Nazionale di Valutazione del sistema Universitario e della Ricerca).

2012: Elettra Synchrotron beamtime proposal number 20120390

He was involved in several research projects:

- Fondazione Cariplo (Bando Materiali Innovativi 2006): Ottenimento di materiali nanostrutturati e con superstruttura di opale inverso per sensori di gas a semiconduttore
- PRIN 2008: Sintesi di nanoparticelle di dimensioni e forma controllate per il miglioramento delle proprietà funzionali di materiali ceramici e ibridi
- Fondazione Cariplo (Bando Materiali Innovativi 2010): Give Sodium a Chance! Investigation of nanostructured mixed Na oxides as electrode materials for energy storage
- European EIT Project "Safer reduction of ZnO amount in rubber vulcanization process (Safe Vulca)", 2019-2021