

## Norberto Masciocchi – CV (as per January 2022)

1983: Degree in Chemistry; 1989: Ph.D. in Chemical Sciences; 1990 Staff Researcher; 1998: Associate Professor; 2004: Full Professor; 1985-1986 and 1989-1990: Visiting Scientist (IBM Almaden, San Jose, CA); 1987: DAAD Grant at KFA Jülich, Germany. Author of more than 260 original papers published on leading scientific journals (among which Science and Nature), of more than one-hundred presentations at national and international conferences, and seminars and lessons in several Italian and Foreign Universities and Research Centers. H-index: 53; No. citations > 11700 (Source: Scopus; January 2022). The editorial activity includes, among others, the editing of the “Powder Diffraction of Molecular Functional Materials, IUCr, 2004” pamphlet, of the thematic issues of the Journal of Physics and Chemistry of Solids (2004) and of the Journal of Organometallic Chemistry (2005), and of three books “Analisi di Materiali Policristallini mediante Tecniche di Diffrazione”, “Diffraction at the Nanoscale: Nanocrystals, Defective and Amorphous Materials”, and “Crystallography for Health and Biosciences”, published by IUP. Editor of the Powder Diffraction Journal; Member of the Commission for Powder Diffraction of the International Union for Crystallography; Member of the International Center for Diffraction Data; SCI, ACA, AIC, AIDIC Member; Invited speaker in several National and International Conferences and Schools. Awardee of the Nasini Prize (1999, Italian Chemical Society). Organizer of several International Conferences: EMRS-DCM4, Strasbourg, 2003; III EuChem on Nitrogen Ligands, Camerino, 2004; IV EuChem on Nitrogen Ligands, Garmisch, 2008; ECDM5, Gravedona, 2008; XXII IUCr Madrid, 2011, MISSCA Como, 2013. Organizer of several National and International Schools on Powder Diffraction and related techniques, 1995-2021. Known languages: English (fluent); Spanish (fluent), French (fluent), German (good). See also: [toscalab.uninsubria.it](http://toscalab.uninsubria.it).

### Scientific Publications

Author of more than 300 original papers published on leading scientific journals (among which Science and Nature), of more than one-hundred presentations at national and international conferences, and seminars and lessons in several Italian and Foreign Universities and Research Centers. Among them:

1. Bertolotti Federica, Dirin Dmitry N., Ibáñez Maria, Krumeich Frank, Cervellino Antonio, Frison Ruggero, Voznyy Oleksandr, Sargent Edward H., Kovalenko Maksym V., Guagliardi Antonietta, Masciocchi Norberto (2016). Crystal symmetry breaking and vacancies in colloidal lead chalcogenide quantum dots. NATURE MATERIALS, vol. 15, p. 987-994, ISSN: 1476-1122, doi: 10.1038/nmat4661
2. Mason Jarad A., Oktawiec Julia, Taylor Mercedes K., Hudson Matthew R., Rodriguez Julien, Bachman Jonathan E., Gonzalez Miguel I., Cervellino Antonio, Guagliardi Antonietta, Brown Craig M., Llewellyn Philip L., Masciocchi Norberto, Long Jeffrey R. (2015). Methane storage in flexible metal-organic frameworks with intrinsic thermal management. NATURE, vol. 527, p. 357-361, ISSN: 0028-0836, doi: 10.1038/nature15732
3. Herm Z.R., Wiers B.M., Mason J.A., Van Baten J.M., Hudson M.R., Zajdel P., Brown C.M., Masciocchi N., Krishna R., Long J.R. (2013). Separation of Hexane Isomers in a Metal-Organic Framework with Triangular Channels. SCIENCE, vol. 340, p. 960-964, ISSN: 0036-8075, doi: 10.1126/science.1234071
4. Bertolotti Federica, Protesescu Loredana, Kovalenko Maksym V, Yakunin Sergii, Cervellino Antonio, Billinge Simon J L, Terban Maxwell W, Pedersen Jan Skov, Masciocchi Norberto, Guagliardi Antonietta (2017). Coherent Nanotwins and Dynamic Disorder in Cesium Lead Halide Perovskite Nanocrystals. ACS NANO, vol. 11, p. 3819-3831, ISSN: 1936-0851, doi: 10.1021/acsnano.7b00017
5. Protesescu Loredana, Yakunin Sergii, Kumar Sudhir, Bär Janine, Bertolotti Federica, Masciocchi Norberto, Guagliardi Antonietta, Grotevent Matthias, Shorubalko Ivan,

- Bodnarchuk Maryna I, Shih Chih-Jen, Kovalenko Maksym V (2017). Dismantling the "Red Wall" of Colloidal Perovskites: Highly Luminescent Formamidinium and Formamidinium-Cesium Lead Iodide Nanocrystals. ACS NANO, vol. 11, p. 3119-3134, ISSN: 1936-0851, doi: 10.1021/acsnano.7b00116
6. Protesescu Loredana, Yakunin Sergii, Bodnarchuk Maryna I, Bertolotti Federica, Masciocchi Norberto, Guagliardi Antonietta, Kovalenko Maksym V (2016). Monodisperse Formamidinium Lead Bromide Nanocrystals with Bright and Stable Green Photoluminescence. JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 138, p. 14202-14205, ISSN: 0002-7863, doi: 10.1021/jacs.6b08900
  7. Delgado-López J.M., Frison R., Cervellino A., Gómez-Morales J., Guagliardi A., Masciocchi N. (2014). Crystal size, morphology, and growth mechanism in bio-inspired apatite nanocrystals. ADVANCED FUNCTIONAL MATERIALS, vol. 24, p. 1090-1099, ISSN: 1616-301X, doi: 10.1002/adfm.201302075
  8. Ferlauto L., Liscio F., Orgiu E., Masciocchi N., Guagliardi A., Biscarini F., Samorì P., Milita S. (2014). Enhancing the charge transport in solution processed perylene di-imides transistors via thermal annealing of metastable disordered films. ADVANCED FUNCTIONAL MATERIALS, vol. 24, p. 5503-5510, ISSN: 1616-301X, doi: 10.1002/adfm.201400789
  9. Frison R., Cernuto G., Cervellino A., Zaharko O., Colonna G.M., Guagliardi A., Masciocchi N. (2013). Magnetite-Maghemite Nanoparticles in the 5-15 nm Range: Correlating the Core-Shell Composition and the Surface Structure to the Magnetic Properties. A Total Scattering Study. CHEMISTRY OF MATERIALS, vol. 25, p. 4820-4827, ISSN: 0897-4756, doi: 10.1021/cm403360f
  10. Cervellino Antonio, Frison Ruggero, Masciocchi Norberto, Guagliardi Antonietta (2016). X-Ray Powder Diffraction Characterization of Nanomaterials. In: Vari. (a cura di): Challa S.S.R. Kumar, X-ray and Neutron Techniques for Nanomaterials Characterization. p. 545-608, Berlin, Springer, ISBN: 978-3-662-48606-1, doi: 10.1007/978-3-662-48606-1\_10

## Recently Funded Projects

A summary of funded projects:

- PRIN 2017, 2017L8WW48, Project HY-TEC. Hybrid ThermoElectric Composites: Proof-of-concepts for low-T, n-type and flexible thermoelectrics [437.000 €, 36 months]
- Cariplo Project 2007-5117: Development of nanostructured hybrid materials for the storage and the separation of gases of energetic and environmental relevance [200.000 €, 24 months].
- Cariplo Project 2009-2446: Nanocrystals of Technological and Biomedical Interest: Structural and Functional Aspects [300.000 €, 24 months]
- Cariplo Project 2011-0289: Metal-Organic-based Nanocrystal Arrays with Large Induced Shape Anisotropy - MONA LISA [400.000 €, 27 months]
- Cariplo Project 2016-0648: Romancing the stone: size-controlled HYdroxyaPATItes for sustainable Agriculture (HYPATIA) [280.000 €, 30 months]
- Fondazione Banca Dal Monte di Lombardia: Sviluppo di Interazione tra Università e Realtà Produttiva nel Territorio Comasco per la Messa a Punto di Materiali e Processi di Rilevanza Biomedica ed Ambientale [58.000 €, equipment]
- Several Junior Assignee Grants – Research Funds from University of Insubria: 2013, 2015, 2016
- Federchimica Assignee Grant – Bracco srl, Characterization of the complex crystal chemistry of radiographic contrast agents.
- Several Technology – Transfer Projects with Industrial Partners, ranging from a few thousands to max 50.000 €.

## Contracts

1. Several consultancy, technology transfer and higher education contracts with local, national and foreign companies (1994-2017).

## Teaching

1. Teacher of General Chemistry, Inorganic Chemistry, Structural Chemistry, Applied Inorganic Chemistry, Solid State Chemistry (1991-2017) to Chemistry, Physics, Biology, Environmental Science and Engineering classes.
2. Teacher in European Master for Crystallography (2013-2014)
3. Teacher at several Higher Education events (PhD courses, Summer Schools, Workshops, etc.) (1992-2022)
4. Teacher in Industrial and non-Academic Environments (Companies, Learned Societies, Primary-to-High Schools) (1995-2022)
5. Group Leader in several Scientific Projects (see above for a short list, 2007-2022)
6. Supervisor of several Master and PhD students (1995-2022).

## Editorial Activity

1. Editing of the "Powder Diffraction of Molecular Functional Materials, IUCr, 2004" pamphlet
2. Editing of the thematic issues of the Journal of Physics and Chemistry of Solids (2004) and of the Journal of Organometallic Chemistry (2005)
3. Editing of three books: "Analisi di Materiali Policristallini mediante Tecniche di Diffrazione", "Diffraction at the Nanoscale: Nanocrystals, Defective and Amorphous Materials", and "Crystallography for Health and Biosciences", published by IUP.
4. European Editor of the Powder Diffraction Journal.

## Evaluation Activities

1. Member of several Regional and National Evaluation Committees of PhD, Post-doc, Researcher and Professor positions.
2. Member of the National Evaluation Committee of the Research Quality in Chemistry (2011-2014), appointed by a Ministry of Education, University and Research.
3. Evaluator of several National and European PhD Theses.
4. Referee for a number of International Journals (ACS, RSC, Wiley, Elsevier, IUCr, etc.).
5. Member of the Evaluation Committees of the Italian Crystallographic Association for granting young and mid-career National Prizes.

## Events Organization

1. Organizer of several International Conferences: EMRS-DCM4, Strasbourg, 2003; III EuChem on Nitrogen Ligands, Camerino, 2004; IV EuChem on Nitrogen Ligands, Garmisch, 2008; ECDM5, Gravedona, 2008; XXII IUCr Madrid, 2011, MISSCA Como, 2013.
2. Organizer of several National and International Schools on Powder Diffraction and related techniques, 1995-2021.

## Prizes

1. Awarded of the Nasini Prize (1999, Italian Chemical Society).

## Other

1. Known languages: English (fluent); Spanish (fluent), French (fluent), German (good). See also: [toscalab.uninsubria.it](http://toscalab.uninsubria.it).
2. Invited speaker in several National and International Conferences and Schools.
3. Cofounder of To.Sca.Lab, a joint Uninsubria – CNR Laboratory on Total Scattering Methods ([toscalab.uninsubria.it](http://toscalab.uninsubria.it)).
4. Visiting Professor at University of Granada, Spain (February-April 2020)
5. Visiting Professor at University of Granada, Spain (July-September 2021)