



## Norberto Masciocchi, Prof.

### Curriculum Vitae

**Current Position** Professor of Inorganic Chemistry

**Professional** Dipartimento di Scienza e Alta Tecnologia

**Address** Università degli Studi dell'Insubria  
via Valleggio 11, 22100 Como (Italy)

Phone: +39-031-2386613; Fax: +39-031-2386659

E-mail: [norberto.masciocchi@uninsubria.it](mailto:norberto.masciocchi@uninsubria.it)

**Citizenship** Italian

**Education** 1978 – High School Graduation (Maturità Classica) at Liceo Classico A. Volta in Como, Italy  
1983 – Graduation in Chemistry (Laurea degree = 5 years degree) from Università degli Studi di Milano.  
1989 – PhD Graduation in Chemistry from Università degli Studi di Milano.

**Professional Experiences (temporary positions)** 1983 – Qualifying examination (Esame di Stato) for Chemists  
1985-1986 – Post-doctoral fellow at the IBM Research Center in San José, CA, USA  
1987 – Visiting Scientists at KFA Juelich and University of Bonn, Germany  
1989-1990 – Post-doctoral fellow at the IBM Almaden Research Center in San José, CA, USA

**Professional Experiences (permanent positions)** 1991 – 1999 Assistant Professor (Ricercatore) in Inorganic Chemistry at the Università degli Studi di Milano  
1999 – 2004 – Associate Professor in Inorganic Chemistry at the Università degli Studi dell'Insubria in Como  
2004 – present – Full Professor in Inorganic Chemistry at the Università degli Studi dell'Insubria in Como

**Languages** Italian (mother tongue)  
English (fluent)  
Spanish (fluent)  
French (fluent)  
German (good)  
Arabic (basic)

**Research Interests  
and areas  
of scientific activity** Structural Chemistry  
Crystallography  
Powder Diffraction  
Nanomaterials  
Education

### **Recent Research Projects**

Cariplo Project 2007-5117: *Development of nanostructured hybrid materials for the storage and the separation of gases of energetic and environmental relevance.*

Cariplo Project 2009-2446: *Nanocrystals of Technological and Biomedical Interest: Structural and Functional Aspects.*

Cariplo Project 2011-0289: *Metal-Organic-based Nanocrystal Arrays with Large Induced Shape Anisotropy - MONA LISA.*

*COMIX Project: Challenges in Organo-Metallic Investigation by X-rays.*

*MATTO Project: Multiple Approaches by Total-scattering Techniques on Organometallics.*

### **Publication Track and Short CV**

He is author of more than 260 original papers published in leading scientific journals (including *Science* and *Nature*), of about 100 oral presentations to National and International Conferences, and has taught seminars and lessons in many National and Foreign Universities and Research Centers. H-index: 43. Number of citations: > 6600. He has also coauthored several national and international patents. His editorial activity includes various contributions and articles published in the books of national and international Crystallography Schools, the booklet "Powder Diffraction of Molecular Functional Materials, IUCr, 2004", two special issues of the Journal of Physics and Chemistry of Solids (2004) and of the Journal of Organometallic Chemistry (2005), the "Radiochemistry and Nuclear Chemistry" chapters in the Encyclopedia of Sciences, De Agostini, Novara (1984), and, recently, of the books: "Analysis of Polycrystalline Materials through Diffraction Techniques", edited by IUP, ISBN: 8895362047; "Diffraction at the Nanoscale: Nanocrystals, Defective and Amorphous Materials", edited by IUP, ISBN: 9788895362359 and "Crystallography for Health and Biosciences", edited by IUP, ISBN: 9788895362489. Editor of the Powder Diffraction Journal; Past

Member of the Commission for Powder Diffraction of the International Union for Crystallography; Member of the International Center for Diffraction Data; Member of SCI and AIC; Invited speaker in several National and International Conferences and Crystallography Schools. Awardee of the Nasini Prize (1999, Società Chimica Italiana). 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, IUCr Madrid, 2011, MISSCA2013, Como. Organizer of several Doctorate Schools on X-ray Powder Diffraction, 1995-2015. Coordinator of the Ph.D. Course for Chemical and Environmental Sciences (2013-). Known languages: English (fluent); Spanish (fluent), French (fluent), German (good), Arabic (basic).

### Recent Publications on peer reviewed Journals (selection)

F. Bertolotti, D.N. Dirin, M. Ibáñez, F. Krumeich, A. Cervellino, R. Frison, O. Voznyy, E.H. Sargent, M.V. Kovalenko, A. Guagliardi and N. Masciocchi  
*Crystal symmetry breaking and vacancies in colloidal lead chalcogenide quantum dots.*  
NATURE MATERIALS, (2016) doi:10.1038/nmat4661 .

A. Cervellino, R. Frison, N. Masciocchi and A. Guagliardi,  
*X-ray Powder Diffraction Characterization of Nanomaterials in X-ray and Neutron Techniques for Nanomaterials,*  
C.S.S.R. Kumar Ed.,  
Springer Verlag, (2016), ISBN 978-3-662-48604-7.

A. Guagliardi, A. Cervellino, R. Frison, G. Cernuto and N. Masciocchi  
*Crystals: Structure and Microstructure of Nanocrystals Using the Debye Function Analysis*  
in *CRC Concise Encyclopedia of Nanotechnology,*  
B. I. Kharisov, O. V. Kharissova, U. Ortiz-Mendez Eds.,  
CRC Press, (2015), ISBN 9781466580343.

J. A. Mason, J. Oktawiec, M.K. Taylor, M R. Hudson, J. Rodriguez, J.E. Bachman, M.I. Gonzalez, A. Cervellino, A. Guagliardi, C.M. Brown, P L. Llewellyn, N. Masciocchi and J.R. Long  
*Methane storage in flexible metal-organic frameworks with intrinsic thermal management.*  
NATURE (2015), 527, 357-361.

Fernandes J.A., Sardo M., Mafra L., Choquesillo-Lazarte D., Masciocchi N.,  
*X-ray and NMR Crystallography Studies of Novel Theophylline Cocrystals Prepared by Liquid Assisted Grinding.*  
CRYSTAL GROWTH & DESIGN, 15 (2014) 3674-3683.

Vladiskovic C., Masciocchi N.  
*Reversibly changing a painkiller structure: A hot topic for a cold case-Ibuprofen lysine salt*  
JOURNAL OF PHARMACEUTICAL AND BIOMEDICAL ANALYSIS, 107 (2015) 394-402.

Giacobbe C., Palmisano G., Giovenzana G.B., Giovannelli L., Negri R., Masciocchi N.,  
*Difluprednate: More than meets the eye*  
JOURNAL OF PHARMACEUTICAL AND BIOMEDICAL ANALYSIS, 102 (2015) 305-313.

- Tabacaru A., Galli S., Pettinari C., Masciocchi N., McDonald T.M., Long J.R.,  
*Nickel(II) and copper(I,II)-based metal-organic frameworks incorporating an extended trispyrazolate linker*  
CRYSTENGCOMM 17 (2015) 4992-5001.
- Colombo V., Masciocchi N., Palmisano G.,  
*Crystal Chemistry of the Antibiotic Doripenem*  
JOURNAL OF PHARMACEUTICAL SCIENCES, 103 (2014) 3641-3647.
- Wannarit N., Nassirinia N., Amani S., Masciocchi N., Youngme S., Roubeau O, Teat S.J., Gamez P.  
*Drastic Effect of Lattice Propionitrile Molecules on the Spin-Transition Temperature of a 2,2'-Dipyridylamino/s-triazine-Based Iron(II) Complex*  
INORGANIC CHEMISTRY 53 (2014) 9827-9836.
- Galli S., Maspero A., Giacobbe C., Palmisano G., Nardo L., Comotti A., Bassanetti I., Sozzani P., Masciocchi N.  
*When long bis(pyrazolates) meet late transition metals: structure, stability and adsorption of metal-organic frameworks featuring large parallel channels*  
JOURNAL OF MATERIALS CHEMISTRY A 2 (2014) 12208-12221.
- Vladiskovic C., Masciocchi N.  
*Persistency of a Two-Fold Embrace in Crystalline Phases of Bupropion Hydrohalides: A Thorough ab Initio X-ray Powder Diffraction Study*  
CRYSTAL GROWTH & DESIGN 14 (2014) 3603-3611.
- Bertolotti F., Maspero A., Cervellino A., Guagliardi A., Masciocchi N.,  
*Bending by Faulting: A Multiple Scale Study of Copper and Silver Nitropyrazolates*  
CRYSTAL GROWTH & DESIGN 14 (2014) 2913-2922.
- Moreno-Calvo E., Temelli F., Cordoba A., Masciocchi N., Veciana J., Ventosa N.,  
*A New Microcrystalline Phytosterol Polymorph Generated Using CO<sub>2</sub>-Expanded Solvents*  
CRYSTAL GROWTH & DESIGN 14 (2014) 58-68.
- Camara V., Masciocchi N., Gil-Rubio J., Vicente J.  
*Triple Helicates with Golden Strands: Self-Assembly of M<sub>2</sub>Au<sub>6</sub> Complexes from Gold(I) Metallaligands and Iron(II), Cobalt(II) or Zinc(II) Cations*  
CHEMISTRY-A EUROPEAN JOURNAL 20 (2014) 1389-1402.
- A. Cervellino, R. Frison, G. Cernuto, A. Guagliardi, N. Masciocchi,  
*Lattice Parameters and Site Occupancy Factors of Magnetite-Maghemite Core-Shell Nanoparticles. A Critical Study.*  
JOURNAL OF APPLIED CRYSTALLOGRAPHY, **47**, (2014) 1755-1761.
- L. Ferlauto, F. Liscio, E. Orgiu, N. Masciocchi, A. Guagliardi, F. Biscarini, P. Samorì, and S. Milita,  
*Enhancing the Charge Transport in Solution-Processed Perylene Di-imide Transistors via Thermal Annealing of Metastable Disordered Films*  
ADVANCED FUNCTIONAL MATERIALS, **24**, (2014) 1090-1099.

F. Bertolotti, A. Maspero, A. Cervellino, A. Guagliardi, N. Masciocchi,  
*Bending by Faulting: A Multiple Scale Study of Copper and Silver Nitropyrzates*  
CRYSTAL GROWTH & DESIGN, **14**, (2014) 2913–2922.

Delgado-López JM, Frison R, Cervellino A, Gómez-Morales J, Guagliardi A, Masciocchi N.,  
*Crystal Size, Morphology and Growth Mechanism in Bio-inspired Apatite Nanocrystals.*  
ADVANCED FUNCTIONAL MATERIALS, **24**, (2014) 1090- 1099.

Padial NM, Quartapelle Procopio E, Montoro C, López E, Oltra JE, Colombo V, Maspero A,  
Masciocchi N, Galli S, Senkowska I, Kaskel S, Barea E, Navarro JAR.  
*Highly Hydrophobic Isoreticular Porous Metal-Organic Frameworks for the Capture of Harmful  
Volatile Organic Compounds.*  
ANGEWANDTE CHEMIE. INTERNATIONAL EDITION, vol. **52**, (2013) 8290-8294.

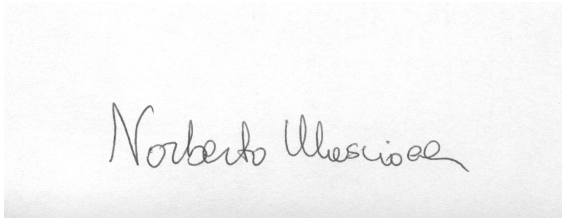
R. Frison, A. Cervellino, G. Cernuto, A. Guagliardi, and N. Masciocchi,  
*Testing the Debye Function Approach on a Laboratory X-ray Powder Diffraction Equipment. A  
Critical Study.*  
POWDER DIFFRACTION, **28**, (2013) S11-S21.

A. Aprea, A. Maspero, N. Masciocchi, A. Guagliardi, A. Figini Albisetti, G. Giunchi,  
*Nanosized rare-earth hexaborides: Low-temperature preparation and microstructural analysis*  
SOLID STATE SCIENCES, **21**, (2013) 32-36.

Frison R, Cernuto G, Cervellino A, Zaharko O, Colonna GM, Guagliardi A, Masciocchi N.,  
*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, **25**, (2013) 4820-4827.

Herm Z.R., Wiers N.M., Mason J.A., Van Baten J.M., Hudrson M.R., Zajdel P., Brown C.M.,  
Masciocchi N., Krishna R., Long J.R.,  
*Separation of Hexane Isomers in a Metal-Organic Framework with Triangular Channels.*  
SCIENCE, 340 (2013). 960-964.

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Norberto Ulesioe