

CURRICULUM VITAE

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Michele R. Chierotti (MRC) graduated in Chemistry at the University of Torino (2002) with a thesis carried out at "IVIC" (Instituto Venezolano de Investigaciones Científicas) (Caracas - Venezuela) (supervisors Prof. R. Gobetto and Prof. A.J. Arce). He got his PhD in Chemistry (2006) at the University of Torino with a thesis in part researched at the Chemistry Department of Durham University (UK) (supervisors Prof. R. Gobetto and Prof. R.K. Harris). After the PhD, He carried on his research as a post-doc (2006-2010) at the University of Torino. Since 2010 He is permanent researcher and teacher at the Department of Chemistry of the University of Torino.

Author of more than 55 publications on international peer-reviewed journals, MRC presented several invited lectures at congresses and PhD schools and more than 50 poster or oral communications to national and international conferences (an average of 3 per year).

He has been co-author of several national and international funded projects (Firb 2001/Prin 2004/CIPE 2006/ Prin 2006/COST D36-001-2006/Prin 2008) and proposals for synchrotron facilities at the Paul Scherrer Institut (PSI).

MRC is the facility manager of the NMR instrument at the "Incubatore di Impresa dell'Università degli Studi di Torino - 2I3T"; executive board member of the Interdivisional Magnetic Resonance Group (GIRM) of the Italian Chemical Society (2012-2014); executive board member of the Italian Magnetic Resonance Group (GIDRM) (2014-2016); reviewer for MIUR (Italian Ministry of education, university and research) for the evaluation of research projects and products; referee for many international-reviewed journals (CrystEngComm, Journal of Molecular Structure, International Journal of spectroscopy, Physical Chemistry Chemical Physics).

He teaches "General and Inorganic Chemistry" and "Magnetic Resonances in Clinical and Forensic Chemistry" for the Corso di Laurea in Chemistry and "Solid-State NMR: Basics and Applications" for the PhD school of the University of Torino.

RESEARCH INTERESTS AND SKILLS

His main interest concerns the Crystal Engineering field with a supramolecular approach to rational design, synthesis and characterization of new crystal forms (polymorphs, co-crystals, salts...) of pharmaceutical and organometallic compounds with desired properties. He is also interested in the synthesis and characterization of coordination polymers and Metal-Organic-Frameworks (MOFs) with luminescent or gas storage properties. The synthetic approach is based on solvent free reactions (mechanochemical, solid-solid, solid-gas and hydrothermal techniques). Particular attention has been given to the characterization (detection, strength and network analysis) of weak interactions, mainly hydrogen and halogen bonds and π - π contacts. He is expert in the use of several 1D and 2D solid-state NMR (SS NMR) experiments combined with powder X-ray diffraction and quantum mechanical computations for the structure solution of

powdered microcrystalline samples. Whilst SS NMR has been the primary tool in these investigations, extensive use has been also made of IR and Raman spectroscopies and thermal methods.

MOST SIGNIFICATIVE PUBLICATIONS

1. Chierotti, M. R.; Rossin, A.; Gobetto, R.; Peruzzini, M.; *"Interaction between a Transition-Metal Fluoride and a Transition-Metal Hydride: Water-Mediated Hydrofluoric Acid Evolution Following Fluoride Solvation"*
INORGANIC CHEMISTRY **2013**, *52*, 12616-12623.
2. Franco, F.; Baricco, M.; Chierotti, M. R.; Gobetto, R.; Nervi, C.; *"Coupling Solid-State NMR with GIPAW ab Initio Calculations in Metal Hydrides and Borohydrides"*
JOURNAL OF PHYSICAL CHEMISTRY C **2013**, *117*, 9991-9998.
3. Baldrihi, M.; Cavallo, G.; Chierotti, M. R.; Gobetto, R.; Mentrangolo, P.; Pilati, T.; Resnati, G.; Terraneo, G.; *"Halogen Bonding and Pharmaceutical Cocrystals: The Case of a Widely Used Preservative"*
MOLECULAR PHARMACEUTICS **2013**, *10*, 1760-1772.
4. Chierotti, M. R.; Gobetto, R.; *"NMR crystallography: the use of dipolar interactions in polymorph and co-crystal investigation"*
CRYSTENGCOMM **2013**, *15*, 8599-8612.
5. Chierotti, M. R.; Gaglioti, K.; Gobetto, R.; Braga, D.; Grepioni, F.; Maini, L.; *"From molecular crystals to salt co-crystals of barbituric acid via the carbonate ion and an improvement of the solid state properties"*
CRYSTENGCOMM **2013**, *15*, 7598-7605.
6. Rossin, A.; Chierotti, M. R.; Giambastiani, G.; Gobetto, R.; Peruzzini M.; *"Amine-templated polymeric Mg formates: crystalline scaffolds exhibiting extensive hydrogen bonding"*
CRYSTENGCOMM **2012**, *14*, 4454-4460.
7. Tobbens, D. M.; Glinneman, J.; Chierotti, M. R.; van de Streek, J.; Sheptyakov, D.; *"On the high-temperature phase of barbituric acid"*
CRYSTENGCOMM **2012**, *14*, 3046-3055.
8. Diana, E.; Chierotti, M. R.; Marchese, E. M. C.; Croce, G.; Milanesio, M.; Stanghellini, P. L.; *"Blue and red shift hydrogen bonds in crystalline cobaltocinium complexes"*
NEW JOURNAL OF CHEMISTRY **2012**, *36*, 1099-1107.
9. Schmidt, M. U.; Brüning, J.; Glinnemann, J.; Hützler, M. W.; Mörschel, P.; Ivashevskaya, S. N.; van de Streek, J.; Braga, D.; Maini, L.; Chierotti, M. R.; Gobetto, R.; *"The Thermodynamically Stable Form of Solid Barbituric Acid: The Enol Tautomer"*
ANGEWANDTE CHEMIE INTERNATIONAL EDITION **2011**, *50*, 7924-7926. **CORRESPONDING AUTHOR**
10. Bacchi, A.; Cantoni, G.; Chierotti, M. R.; Girlando, A.; Gobetto, R.; Lapadula, G.; Pelagatti, P.; Sironi, A.; Zecchini, M.; *"Water vapour uptake and extrusion by a crystalline metallorganic solid based on half-sandwich Ru(II) building-blocks"*
CRYSTENGCOMM **2011**, *13*, 4365-4375.
11. Levina, V. A.; Rossin, A.; Belkova, N. V.; Chierotti, M. R.; Epstein, L. M.; Filippov, O. A.; Gobetto, R.; Gonsalvi, L.; Lledós, A.; Shubina, E. S.; Zanobini, F.; Peruzzini, M.; *"Acid-Base Interaction between Transition-Metal Hydrides: Dihydrogen Bonding and Dihydrogen Evolution"*
ANGEWANDTE CHEMIE INTERNATIONAL EDITION **2011**, *50*, 1367-1370.
12. Pettinari, R.; Pettinari, C.; Marchetti, F.; Gobetto, R.; Nervi, C.; Chierotti, M. R.; Chan, E. J.; Skelton, B. W.; White, A. H.; *"Solid-State N-15 CPMAS NMR and Computational Analysis of Ligand Hapticity in Rhodium(eta-diene) Poly(pyrazolyl)borate Complexes"*
INORGANIC CHEMISTRY **2010**, *49*, 11205-11215.
13. Braga, D.; Grepioni, F.; Maini, L.; Prosperi, S.; Gobetto, R.; Chierotti, M. R.; *"From unexpected reactions to a new family of ionic co-crystals: the case of barbituric acid with alkali bromides and caesium iodide"*
CHEMICAL COMMUNICATION **2010**, *46*, 7715-7717.
14. Braga, D.; Dichiarante, E.; Palladino, G.; Grepioni, F.; Chierotti, M. R.; Gobetto, R.; Pellegrino, L.; *"Remarkable reversal of melting point alternation by co-crystallization"*
CRYSTENGCOMM **2010**, *12*, 3534-3536.

15. Chierotti, M. R.; Ferrero, L.; Garino, N.; Gobetto, R.; Pellegrino L.; Braga, D.; Grepioni, F.; Maini, L.; *"The Richest Collection of Tautomeric Polymorphs: the case of 2-Thiobarbituric Acid"*
CHEMISTRY-A EUROPEAN JOURNAL **2010**, *16*, 4347-4358. **CORRESPONDING AUTHOR**
16. Chierotti, M. R.; Gobetto, R.; *"Solid-State NMR Studies Of Weak Interactions In Supramolecular Systems"*
CHEMICAL COMMUNICATION, **2008**, 1621-1634.