

MASSIMILIANO DELFERRO, Ph.D.

CONTACT INFORMATION

Name: Massimiliano Delferro

Date of Birth: 01/28/1981

Place of Birth: Parma (Italy)

Citizenship: Italian

Email: m-delferro@northwestern.edu

EDUCATION

High School: **1995-2000**, ITIS “Leonardo da Vinci”, Parma (Italy).

University:

- **Bachelor Degree: 2000-2003**, University of Parma (Italy), Inorganic Chemistry: vote: 105/110, Title: “*Synthesis and characterization of Copper(I) complexes with 1,2,4-triazolinic ligands*”, Advisor Prof. Maurizio Lanfranchi and Dr. Luciano Marchiò.
- **Research Master of Science: 2003-2005**, University of Parma (Italy), Inorganic and Organometallic Chemistry: vote: 110/110 *summa cum laude*, Title: “*Synthesis, structural characterization and solution chemistry of ruthenium(III) triazole-thiadiazine complexes*”, Advisor Prof. Maurizio Lanfranchi and Dr. Luciano Marchiò
- **Graduate School: 2006-2008**, University of Parma (Italy), Title: “*Synthesis and Characterization of Zwitterionic Metallates and Molecular Clusters*”, Advisor Prof. Daniele Cauzzi and Prof. Antonio Tiripicchio.
- **Visiting Scholar: July-December 2007**, Northwestern University (Evanston, IL, USA), Title: “*Neutral Bimetallic Transition Metal Phenoxyiminato Catalysts and Related Polymerization Methods*”, Advisor Prof. Tobin J. Marks.

Post-Doctoral Training: **2009-2010**, Northwestern University (Evanston, IL, USA), Title: “*Nuclearity Effects in Olefin Polymerization catalysts*”, Advisor Prof. Tobin J. Marks.

PROFESSIONAL QUALIFICATIONS

“Advance NMR”, University of Parma/Bruker BioSpin (Italy), **2008**.

“IX School of Chemistry of Inorganic Materials”, Univeristy of Calabria, Cosenza (Italy), **2006**.
Mac and Windows operation systems, Internet, e-Mail, Microsoft Office (Word, Power Point, Excel), NMR software (Bruker, Varian, iNMR, MestreNova), WinGX package (programs for solving, refining and analysing single crystal X-ray diffraction data for small molecules), Cambridge Crystallographic Data Centre (CDCC: Mercury, Encifer, ConQuest), EndNote, Papers (Mac), ChemBioDraw, File Transfer Protocol, VPN.

PROFESSIONAL AND TECNICAL SKILLS

Solid background in Inorganic and Organometallic chemistry, High pressure/vacuum line, NMR (1D ^1H , ^{13}C , ^nX ; 2D COSY, NOESY, DOESY, HETCOR), UV-Vis (microcostants and kinetic), FT-IR, GC-MS, ESI-MS, MALDI, GPC, XRD Bruker APEX-II

PATENTS

Tobin J Marks, Brandon A Rodriguez, Massimiliano Delferro “Neutral Bimetallic Transition Metal Phenoxyiminato Catalysts and Related Polymerization Methods.” US Patent, **2009**, 61,105,116.

PUBLICATIONS

Massimiliano Delferro, Jennifer P. McInnis, Tobin J Marks “Ethylene polymerization characteristics of an electron-deficient nickel(II) phenoxyiminato catalyst modulated by non-innocent intramolecular hydrogen-bonding.” *Organometallics* **2010**, submitted.

Massimiliano Delferro, Claudia Graiff, Lisa Elviri, Giovanni Predieri “Self-Assembly of Polyoxoselenitopalladate Nanostars $[\text{Pd}_{15}(\mu_3\text{-SeO}_3)_{10}(\mu_3\text{-O})_{10}\text{Na}]^9$ and their Supramolecular Pairing in the Solid State.” *Dalton Trans.* **2010**, 39, 4479-4481.

Massimiliano Delferro, Michael P. Weberski Jr., Brandon A. Rodriguez, Tobin J. Marks "Tetraaquabis{2,7-bis[(2,6-diisopropylphenyl)iminomethyl]naphthalene-1,8-diolato}di- μ^3 -hydroxido-di- μ^2 -hydroxido bis(trimethylphosphine oxide)tetranickel(II)-trimethylphosphine oxide-ethyl ether-water (1/2/2/2)." *Acta Cryst.* **2010**, E66, m258.

Daniele Cauzzi, Massimiliano Delferro, Claudia Graiff, Roberto Pattacini, Giovanni Predieri and Antonio Tiripicchio “Coordination properties of the multifunctional *S,N,S* zwitterionic ligand $\text{EtNHC(S)Ph}_2\text{P=NPh}_2\text{C(S)NEt}$.” *Coord. Chem. Rev.* **2010**, 254 (5-6), 753-764.

Massimiliano Delferro, Luciano Marchio, Matteo Tegoni, Saverio Tardito, Renata Franchi-Gazzola, Maurizio Lanfranchi “Synthesis, structural characterisation and solution chemistry of ruthenium(III) triazole-thiadiazine complexes.” *Dalton Trans.* **2009**, 19, 3766-3773.

Massimiliano Delferro, Matteo Tegoni, Vincenzo Verdolino, Daniele Cauzzi, Claudia Graiff, Antonio Tiripicchio “Oxidative Addition of Iodomethane to Charge-Tuned Rhodium(I) Complexes.” *Organometallics* **2009**, 28 (7), 2062-2071.

Brandon A Rodriguez, Massimiliano Delferro, Tobin J Marks “Bimetallic Effects for Enhanced Polar Comonomer Enchainment Selectivity in Catalytic Ethylene Polymerization.” *J. Am. Chem. Soc.* **2009**, 131 (16), 5902-5919.

Massimiliano Delferro, Roberto Pattacini, Daniele Cauzzi, Claudia Graiff, Mattia Terenghi, Giovanni Predieri, Antonio Tiripicchio “Reactivity of the zwitterionic ligand $\text{EtNHC(S)Ph}_2\text{P=NPh}_2\text{C(S)NEt}$ towards $[\text{Ru}_3(\text{CO})_{12}]$. Sulfur transfer and ligand fragmentation leading to the methideylamide $[-\text{N}(\text{Et})\text{-CH}(\text{R})\text{-}]$ μ_3 -bridging moiety.” *Dalton Trans.* **2009**, 3, 544-549.

Massimiliano Delferro, Daniele Cauzzi, Roberto Pattacini, Matteo Tegoni, Claudia Graiff, Antonio Tiripicchio “A study on the coordinative versatility of the zwitterionic *S,N,S* ligand $\text{EtNHC(S)Ph}_2\text{P=NPh}_2\text{C(S)NEt}$ in its anionic, neutral and cationic forms - Determination of absolute $\text{p}K_a$ values in CH_2Cl_2 of Rh(I) complexes.” *Eur. J. Inorg. Chem.* **2008**, 14, 2302-2312.

Brandon A Rodriguez, Massimiliano Delferro, Tobin J Marks “Neutral bimetallic nickel(II) phenoxyiminato catalysts for highly branched polyethylenes and ethylene-norbornene copolymerizations.” *Organometallics* **2008**, *27*, 2166–2168.

CONFERENCE

Oral communications:

Massimiliano Delferro, Brandon A. Rodriguez, Michael P. Weberski, Jr., and Tobin J. Marks, “*Nuclearity Effects in Olefin Polymerization Catalysis*”, Advances in Polyolefins 2009, Santa Rosa (CA, USA), 09/20-23 **2009**, invited speaker.

Massimiliano Delferro, Matteo Tegoni, Vincenzo Verdolino, Daniele Cauzzi “*Electronic Effects on the Kinetics of the CH₃I Oxidative Addition to Charge-tuned Rh^I Complexes*” 2nd European Chemistry Congress, Torin (Italy), 09/16-20 **2008**.

Massimiliano Delferro, Matteo Tegoni, Vincenzo Verdolino, Daniele Cauzzi, Claudia Graiff, Antonio Tiripicchio “*Oxidative Addition of Iodomethane to Charge-Tuned Rhodium(I) Complexes.*” XXXVI Italian Conference on Inorganic Chemistry, Lecce (Italy), 09/01-05 **2008**.

Massimiliano Delferro, Daniele Cauzzi, Claudia Graiff, Antonio Tiripicchio “*Synthesis, Characterization and Reactivity of Zwitterionic Metalates of Palladium(II)*” VIII Italian Conference of Organometallic Chemistry (CoGICO 2008), Perugia, 06/25-28 **2008**.

Daniele Cauzzi, Massimiliano Delferro, Claudia Graiff, Tegoni Matteo, Antonio Tiripicchio “Rh(I) complexes with the zwitterionic ligand EtNHC(S)Ph₂P=NPh₂C(S)Net. Coordinative versatility and acid-base properties.” XXV Italian Conference on Inorganic Chemistry, Milan (Italy), 09/03-07 **2007**.

Massimiliano Delferro, Daniele Cauzzi, Claudia Graiff, Antonio Tiripicchio “*Zwitterionic Metalates of Rh(I)*”, Interuniversity Consortium Chemical Reactivity and Catalysis, Perugia (Italy), 02/23-24 **2007**.

Poster presentation:

Massimiliano Delferro, Daniele Cauzzi, Claudia Graiff, Giovanni Predieri, Antonio Tiripicchio “*Reactivity of the zwitterionic ligand EtNHC(S)Ph₂P=NPh₂C(S)NEt towards [Ru₃(CO)₁₂]. Sulfur transfer and ligand fragmentation leading to the methideylamide [-N(Et)-CH(R)-] μ₃-bridging moiety.*” VIII Italian Conference of Organometallic Chemistry (CoGICO 2008), Perugia (Italy), 06/25-28 **2008**.

Massimiliano Delferro, Daniele Cauzzi, Claudia Graiff, Giovanni Predieri, Antonio Tiripicchio, “*Zwitterionic Metalates of Pd(II) with the ligand EtNHC(S)PPh₂NPh₂C(S)NEt*” 1st European Chemistry Congress, Budapest (Hungary), 08/27-31 **2006**.

Lorenzo Barbieri, Daniele Cauzzi, Massimiliano Del Ferro, Claudia Graiff, Maurizio Lanfranchi, Roberto Pattacini, Alessandro Stercoli, Antonio Tiripicchio “*A new class of zwitterionic metallates*” 1st European Chemistry Congress, Budapest (Hungary), 08/27-31 **2006**.

Massimiliano Delferro, Daniele Cauzzi, Claudia Graiff, Antonio Tiripicchio “*Synthesis, Characterization and Reactivity of Zwitterionic Metalates of Palladium(II)*” VII Italian Conference of Organometallic Chemistry (CoGICO 2008), Parma (Italy), 07/09-12 **2006**.

PROFESSIONAL MEMBERSHIPS

Italian Chemical Society (SCI)

American Chemical Society (ACS)