

Clara Comuzzi

Dipartimento di Scienze Agro Alimentari, Ambientali e Animali

Doctor in Chemistry

Scientific skills

Organic chemistry
Photochemistry
Lanthanides chemistry
Chemical kinetics
Coordination chemistry
Environmental chemistry

Technical skills

Organic Synthesis
NMR
Spectrophotometry
Labeled Molecules Synthesis.
Environmental analysis
Potentiometry
Calorimetry

Professional experience

2005-present Researcher/Assistant Professor at the University of Udine-Principal investigator

- Structural characterization of biomacromolecules (polysaccharides) and evaluation of their modification during biological processes
- Design and synthesis of new polymers from renewable resources.
- Design and synthesis of new photo-antimicrobial materials.
- Design and synthesis of new functionalized and core-modified expanded porphyrins as potential sensitizers in photodynamic therapy and luminescent molecular probes.
- Design and synthesis of innovative electroactive monomers for the molecularly imprinted sensor.
- Studies on innovative processes for mercury removal from sludge in collaboration with Prof. D. Goi.

**2003-2004 Visiting Researcher in Prof. J. H. van Boom lab at the Leiden University
Leiden, Netherlands**

- Design and synthesis of new expanded porphyrins as potential sensitizers in photodynamic therapy.

- Design and synthesis of a new two-thiol reactive lanthanide-DOTA chelate as a paramagnetic probe for protein structure determination

1999-2002 Researcher/Assistant Professor at the University of Udine (Prof. R. Portanova)

- Studies on dioxygen carriers in nonaqueous media. Determination of thermodynamic functions of Co(II) complexation with linear and cyclic polyamines in polar aprotic solvents. Thermodynamic and kinetic investigations on their dioxygen uptake. Test on the catalytic performance of these oxygenated complexes in oxygen insertion reactions on organic substrates.
- Determination of thermodynamic function of complexation of Fe(III) with of a new poly-cathecol ligand (Strenecat) at physiological condition.
- Set-up of a new NMR method for the determination of constants related to proteins' local folding/ unfolding.

1998 Confirmed in tenure.

**1997-1999 Post Doc. in Prof. G.R. Choppin lab at the Florida State University
Tallahassee, FL, USA
Research in f-Elements**

- Thermodynamic and kinetic studies on complexation of Gd(III) with **MS-325** a new molecule to be used as MRI contrast agent. The potential toxicity of the complex in vitro has been determined by evaluating Gd(III) release owing to transmetallation with endogenous metal ions(Ca(II), Cu(II), Zn(II), and Fe(III)).

**1995-1997 Winner of a competitive examination for qualified candidates for Assistant
Professor position at the University of Udine under Prof. R. Portanova.**

- Thermodynamic study on the complexation of Ln(III) and Ag(I) with nitrogen donor ligands and phosphorous donor ligands in a non-aqueous solvent.

**1993-1995 Winner of a competitive examination for qualified candidates for Ph. D. position at the
University of Udine – Major Prof. G. Dolcetti**

- Thermolysis and microstructural rearrangement of the Wells-Dawson $K_6P_2W_{18}O_{62} \cdot 10H_2O$ heteropolyanion.

1993 Laurea (Doctor degree) at the University of Padova – Major Prof. G. Scorrano.

- Thesis Title: Determination of Ionization Sites in Polyfunctional Acids and Bases by NMR Relaxation Rate Measurements

Manuscript Revision

- Journal of Organic Chemistry (ACS)
 - Journal of Inorganic Chemistry (ACS)
 - European Polymer Journal (Elsevier)
 - European Journal of Medicinal Chemistry (Elsevier)
 - Tetrahedron (Elsevier)
 - Medicinal Chemistry Communications (RSC)
 - Soil and Sediment Contamination An International Journal (TF)
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Grant

- Short-Term Mobility Program of CNR-2003
 - Project D4 “Development of human resources in the field of research and technology”-
Project B4 “Specialization in foreign research institutes”-2003/04;
 - Grant FVG 2005;
 - Grant FVG 2007;
 - PRIN 2007;
 - Progetto PRISMA (INSTM) (2008-2009)
 - Progetto SISTER - Liaison Office-Consortio per l'AREA di Ricerca Scientifica e
Tecnologica di Trieste (2009-2010)
 - FVG-R2B 2012
 - PoCN (2014)
 - *HeAD* (2017)
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Teaching Experience

- Advances Spectroscopic Techniques (2018-23)** Laurea Magistrale in Food sciences and technologies
- General Chemistry** : (2006/23) Laurea in Civil Engineering, Economical Engineering and Mechanic Engineering
- General Chemistry** : (20018/23) Laurea in Medicine,
- Organic Chemistry**: (2005/06, 2006/07) Laurea in Environmental Engineering at University of Udine
- Environmental Physical Chemistry** – (2002/03) Master in Environmental Engineering at University of Udine

Graduated/Undergraduate student Supervision Experience

- Master and Ph.D. thesis supervisor.
- Post Doc technical training.

Education

2001-National School : “Modeling and Nuclear Magnetic Resonance: macromolecules and ligands interaction”. Verona, Italy.

Scientific Committee: H. Molinari, N. Niccolai, A. Tramontano

1996-European School : “Metal Complexes in Biomedical Research”. Penne (PE) Italy.

School director : Prof. V. Carunchio, University “ La Sapienza” Roma (Italy).

School President : Prof. A. Braibanti, University of Parma (Italy).

1993-Ph.D. position Major Prof. G. Dolcetti -University of Udine.

1993-Laurea (Doctor degree) in Chemistry. Major Prof. G. Scorrano- University of Padova

Thesis : Determination of Ionization Sites in Polyfunctional Acids and Bases

Languages :

Fluent English

Reading knowledge of French

Publications

She is co-authoring ca. 90 publications in international peer-reviewed journals, patents, and contributions in conference proceedings.