

ALESSANDRO BONETTO CV

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AFFILIATION:
Department of Environmental Sciences,
Informatic and Statistics, DAIS,
University Ca' Foscari of Venice,
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Education:

September 2015- March 2019 – Ph.D. at University Ca' Foscari of Venice, Title of the project: "Human and environmental exposure to copper based engineered nanomaterials (Cu-ENMs) transformation and toxicological effects" Supervisors Prof. A. Marcomini.

February 2013 – “Laurea Magistrale” Master's Degree in Industrial Chemistry (110/110 and honours) at the University Ca' Foscari of Venice. Title of thesis: "Synthesis of new chiral molecules for the development of supramolecular architectures". Supervisor: Prof. O. De Lucchi.

June 2010 – “Laurea Triennale” Bachelor Degree in Industrial Chemistry (110/110 and honours), University Ca' Foscari of Venice. Title of thesis: "Synthesis and reactivity of hexachlorotrinitrobornadiene". Supervisor: Prof. V. Lucchini.

July 2006 – “Diploma” Liceo Scientifico Tecnologico, Istituto Cavanis, Possagno (TV) (89/100)

Project involved:

April 2019 – since now Venezia 20/21 National project

April 2019 – since now Riskgone Grant agreement N° 814425

April 2016 – ECONANOSORB Grant agreement N° 295260

November 2015 – November 2018 – NanoRestart Grant agreement N° 646063

October 2015 – 2019 – NanoFASE Grant agreement N° 646002

September 2015 – February 2017- SUN Grant agreement N° 604305

Professional experience:

May 2021 - since now: Administrator of the Cà Foscari CSA (Faculty Instrumentation Center) reservation platform (QReserve);

February - March 2021: Teaching for 18h "Atmospheric chemistry and environmental impacts of climate change" for the master's degree program in Environmental Science;

November 2020 - since now: Member of the Emergency Team (First Aid, Firefighting, Safety and Health at work: High Risk);

July 2020 - since now: Representative of the Environmental Department (DAIS) technical staff;

December 2021 - since now: Scientific and technical contact for the environmental department (DAIS) for the supervision and maintenance of complex equipment;

March 2019: Teaching for 8h at the master MAGAM Title "PFAS e PFOS: Sostanze Perfluoroalchiliche nelle acque";

November 2018 - since now: Technician at University Ca' Foscari of Venice;

April 2016: ECONANOSORB Visiting researcher at Voronezh State University, Russia;

March 2015: COST STSM at Universitat Jaume I of Castellò d la Plana (ES), COST ACTION CM1005 "Synthesis of new Metallo Organo and/or Hydrogels";

October 2014: Laboratory Assistant at University of Padua, Department of Chemical Sciences. Course: Laboratory of Organic Chemistry 2 for bachelor's degree program in Chemistry;

February 2014: Laboratory Assistant at University of Padua, Department of Chemical Sciences. Course: Laboratory of Preparation e Characterization of Material 2 for master's degree program in Material Science;

March 2013: Scholarship at University of Padova, Title of the project: "A catalytically fuelled molecular machine" Supervisors Prof. G. Licini and Dr. C.Zonta.

Scientific Activity:

In 2010 as an undergraduate student in the research group of Prof. V. Lucchini (University of Venice) he developed the basic insights in the field of organic synthesis. This gave him the opportunity to study new fields of research mainly concerning the synthesis of new molecular architectures. In the following Master's Degree in the research group of Prof. O. De Lucchi (Venice) he improved his synthetic skill in the field of organic chemistry and supramolecular chemistry. The study was mainly directed toward the development of new supramolecular dyes and pigments.

After the Master's Degree he move to Padova and, under the supervision of Prof. G. Licini and Dr. C. Zonta, he started to work on the synthesis of a new molecular motor. This gave him the opportunity to further extend his knowledge in synthesis and supramolecular chemistry.

In September 2015 he starts his PhD activity in the research group of Antonio Marcomini, studying the release and behaviour of nanomaterials and emerging pollutants in the environment. During these research activities, he improve his instrument handling skill, in particular he learn to process organic and inorganic sample from various sources and to investigate the presence of emerging pollutants (nanoparticles, pharmaceutical products, pesticides, etc..) in different media (e.g. environmental, biological matrix). The experience gained inside the group in European project writing, give him the opportunity to be involved in European projects (e.g. SUN, NanoFASE, ECONANOSORB, NanoRestart, Riskgone) and collaborate with the international community.

Contact person for the instruments:

Bruker LC-qTOF Compact
Thermo py-GC-MS Trace1300+ISQ 7000
Thermo-Teledyne LA-ICP-MS
PerkinElmer-ESI ICP-MS Nexion 350X coupled with seaFAST
Agilent GC-MS 6890N
Agilent HPLC 1100 series
Nicomp DLS
Malvern Mastersizer3000

Scientific Publications:

- 1) Rigodanza, F., Marino, N., Bonetto, A., Marcomini, A., Bonchio, M., Natali, M., Sartorel, A., "Water-Assisted Concerted Proton-Electron Transfer at Co(II)-Aquo Sites in Polyoxotungstates With Photogenerated RuIII(bpy)₃³⁺ Oxidant", *ChemPhysChem*, 22 (12), pp. 1208-1218.
- 2) Gosens, I., Costa, P.M., Olsson, M., Stone, V., Costa, A.L., Brunelli, A., Badetti, E., Bonetto, A., Bokkers, B.G.H., de Jong, W.H., Williams, A., Halappanavar, S., Fadeel, B., Cassee, F.R., "Pulmonary toxicity and gene expression changes after short-term inhalation exposure to surface-modified copper oxide nanoparticles", *NanoImpact*, 22, art. no. 100313.
- 3) Calgaro, L., Contessi, S., Bonetto, A., Badetti, E., Ferrari, G., Artioli, G., Marcomini, A., "Calcium aluminate cement as an alternative to ordinary Portland cement for the remediation of heavy metals contaminated soil: mechanisms and performance", *Journal of Soils and Sediments*, 21 (4), pp. 1755-1768.
- 4) Cámara-Torres, M., Duarte, S., Sinha, R., Egizabal, A., Álvarez, N., Bastianini, M., Sisani, M., Scopece, P., Scatto, M., Bonetto, A., Marcomini, A., Sanchez, A., Patelli, A., Mota, C., Moroni, L., "3D additive manufactured composite scaffolds with antibiotic-loaded lamellar fillers for bone infection prevention and tissue regeneration", *Bioactive Materials*, 6 (4), pp. 1073-1082.
- 5) Scarponi, P., Bonetto, A., Bolzonella, D., Astals, S., Cavinato, C., "Anaerobic co-digestion effluent as substrate for *Chlorella vulgaris* and *Scenedesmus obliquus* cultivation", *Energies*, 13 (18), 4880.
- 6) Volpato, G.A., Marasi, M., Gobbato, T., Valentini, F., Sabuzi, F., Gagliardi, V., Bonetto, A., Marcomini, A., Berardi, S., Conte, V., Bonchio, M., Caramori, S., Galloni, P., Sartorel, A., "Photoanodes for water oxidation with visible light based on a pentacyclic quinoid organic dye enabling proton-coupled electron transfer", *Chemical Communications*, 56 (15), pp. 2248-2251.
- 7) Battistin, M., Dissette, V., Bonetto, A., Durini, E., Manfredini, S., Marcomini, A., Casagrande, E., Brunetta, A., Ziosi, P., Molesini, S., Gavioli, R., Nicoli, F., Vertuani, S., Baldisserotto, A., "A new approach to UV protection by direct surface functionalization of TiO₂ with the antioxidant polyphenol dihydroxyphenyl benzimidazole carboxylic acid", *Nanomaterials*, 10 (2), art. no. 231.
- 8) Contessi, S., Calgaro, L., Dalconi, M.C., Bonetto, A., Bellotto, M.P., Ferrari, G., Marcomini, A., Artioli, G., "Stabilization of lead contaminated soil with traditional and alternative binders", *Journal of Hazardous Materials*, 382, art. no. 120990.
- 9) Battistin, M., Durini, E., Dissette, V., Bonetto, A., Marcomini, A., Casagrande, E., Brunetta, A., Ziosi, P., Molesini, S., Gavioli, R., Nicoli, F., Manfredini, S., Vertuani, S., Baldisserotto, A., "Synthesis and characterization of new multifunctional self-boosted filters for UV protection: ZnO complex with dihydroxyphenyl benzimidazole carboxylic acid", *Molecules*, 24 (24), art. no. 4546.
- 10) Calgaro, L., Badetti, E., Bonetto, A., Contessi, S., Pelay, R., Ferrari, G., Artioli, G., Marcomini, A., "Consecutive thermal and wet conditioning treatments of sedimentary stabilized cementitious materials from HPSS® technology: Effects on leaching and microstructure", *Journal of Environmental Management*, 250, art. no. 109503.
- 11) Badetti, E., Calgaro, L., Falchi, L., Bonetto, A., Bettiol, C., Leonetti, B., Ambrosi, E., Zendri, E., Marcomini, A., "Interaction between copper oxide nanoparticles and amino acids: Influence on the antibacterial activity", *Nanomaterials*, 9 (5), art. no. 792.
- 12) De Jong, W.H., De Rijk, E., Bonetto, A., Wohlleben, W., Stone, V., Brunelli, A., Badetti, E., Marcomini, A., Gosens, I., Cassee, F.R., "Toxicity of copper oxide and basic copper carbonate nanoparticles after short-term oral exposure in rats", *Nanotoxicology*, 13 (1), pp. 50-72.
- 13) Volpato, G.A., Bonetto, A., Marcomini, A., Mialane, P., Bonchio, M., Natali, M., Sartorel, A., "Proton coupled electron transfer from Co₃O₄ nanoparticles to photogenerated Ru(bpy)₃³⁺: Base catalysis and buffer effect", *Sustainable Energy and Fuels*, 2 (9), pp. 1951-1956.
- 14) Badetti, E., Bonetto, A., Romano, F., Marchiò, L., Zonta, C., Licini, G., "Synthesis, Characterization and Catalytic Activity of a Tungsten(VI) Amino Triphenolate Complex", *Catalysis Letters*, 147 (9), pp. 2313-2318.

- 15) Ortelli, S., Costa, A.L., Blosi, M., Brunelli, A., Badetti, E., Bonetto, A., Hristozov, D., Marcomini, A., "Colloidal characterization of CuO nanoparticles in biological and environmental media", *Environmental Science: Nano*, 4 (6), pp. 1264-1272.

References:

Prof. Antonio Marcomini

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