Enrico Boccaleri

Curriculum vitae

PERSONAL DATA

Born in Alessandria, Italy, on January, 31st, 1973

Living in Alessandria

BIO AND EDUCATION

1991 Scientific High School Degree at the Liceo Scientifico "G. Galilei "of Alessandria

December 1996 Degree in Chemistry - Materials Chemistry cum laude with the experimental thesis entitled "Solid-gas Reactivity of organometallic complexes of transition metals" - Supervisors prof. Roberto Gobetto and Prof. Enrico Sappa.

March 2001 PhD in Chemical Sciences at the University of Turin, Department of Inorganic, Physical and Materials Chemistry. PhD Thesis "Correlation spectroscopic properties-structure: vibrational patterns applied to polyatomic systems" - Supervisor Prof. P.L. Stanghellini.

Teaching in several University courses and in the Master Course on "Materials for Energy and Environment"

(co-)supervisor of 32 bachelor and master theses and three PhD theses.

Co-author of 58 articles in international scientific journals, 1 chapter in scientific volumes, 2 European patents, one patent and one Italian national patent application

h-index = 19

UNIVERSITY CAREER

1996	Degree in Chemistry at the University of Turin cum laude
2001	Phylosophy doctorate in Chemical Sciences at the University of Turin
2001 – 2016	Researcher in General and Inorganic Chemistry - Università del Piemonte Orientale
2013/14	Eligible for the role of Associate Professor by the ASN (Abilitazione Scientifica Nazionale) committee in the 03/B1 e 03/A2 areas
2016-	Associate Professor in General and Inorganic Chemistry - Università del Piemonte Orientale

UNIVERSITY POSITIONS

2016-	Technical Scientific committee representative in the ITS foundation "Professionalità per lo Sviluppo dei Sistemi Energetici Ecosostenibili"
Settembre 2015	Università del Piemonte Orientale delegate for the Solvay Solexis "Fabbriche

	Aperte 2015" event - Spinetta Marengo
2001-2012	High-school interaction and addressing advisory referee for the Chemistry degree course
2012	Encharged organiser of the "Notte dei Ricercatori" 2012 event - Alessandria
2010	Referee for the Università del Piemonte Orientale in the IFTS course "Tecnico superiore per la conduzione del cantiere riqualificazione energetica edilizia storica"

SCIENTIFIC POSITIONS

2014-	Member of the Directory Board of the Italian Chemical Society - Piemonte and Val d'Aosta section
2009-2013	Didactic coordinator for the Master course "Materiali per Energia e Ambiente"

MAIN FIELDS OF INTEREST

1. Nanostructured materials
2. Layered materials
3. Functional materials
4. Cement and Concrete
5. Spectroscopic characterisation

CURRENT ISSUES OF RESEARCH

1. Development of basic and applied knowledge in the field of cementitious materials:

Investigation of the hydration processes at the molecular / local level with innovative techniques (SS-NMR, Raman spectroscopy and UV-Vis-NIR, X-ray tomography and time-resolved diffraction), study of the environmental degradation, development of functional additives (photocatalytic systems, self-cleaning materials, self-repairing agents), energy and environmental impact reduction of the cement using alternative feedstocks or recycled fractions.

2. Synthesis of nanostructured layered materials

Development of synthetic materials with clay and hydrotalcite structure with controlled composition by hydrothermal and mechanochemical processes, in -synthesis and post-synthesis modification with intercalated modifiers for applications as functional additives in the field of polymeric nanocomposites

3. Chemical functionalization of carbon nanostructures

functionalization processes of Elementary carbonaceous materials with different structures (graphite and graphene, carbon nanotubes, fullerenes, amorphous carbon), characterization and analysis of the properties

4. synthesis, functionalization and characterization of molecular organosiliceous systems based on polyhedral oligomeric silsesquioxanes (POSS)

Development of fully condensed cage, open-cage and metal containing (V, Ti, Al, W, lanthanides) materials and their application in the field of nanostructured functional additives for polymers and for hierarchical systems with high porosity

6. **Analytical methods Development**

   Development of advanced methodologies for the in situ simultaneous characterization of materials based on the use of X-ray diffraction and Raman spectroscopy, of innovative characterization methods for cementitious materials, use and development of spectroscopic, microscopic and X-ray diffraction characterization techniques for the study of the structure and properties of nanomaterials, application of characterization methods to cultural heritage

TOP FIVE PAPERS

1. Gianotti V., Favaro G., Bonandini L., Palin L., Croce G., Boccaleri E., Artuso E., Van Beek W., Barolo C., Milanesio M., "Rationalization of dye uptake on titania slides for dye-sensitized solar cells by a combined chemometric and structural approach",ChemSusChem, 2014, 7 (11), 3039-3052, total citations 2, IF 7,657
2. Carniato F., Bisio C., Gatti G., Boccaleri E., Bertinetti L., Coluccia S., Monticelli O., Marchese L., "Titanosilsesquioxanes embedded in synthetic clay as a hybrid material for polymer science", Angewandte Chemie - International Edition, 2009, 48 (33), 6059-6061, total citations 28, IF 11,829
3. Utracki L.A., Sepehr M., Boccaleri E. "Synthetic, layered nanoparticles for polymeric nanocomposites (PNCs)", Polymers for Advanced Technologies, 2007, 18 (1), 1-37, total citations 247, IF 1,504
4. Sanchez Del RIo M., Boccaleri E., Milanesio M., Croce G., Van Beek W., Tsiantos C., Chyssikos G.D., Gionis V., Kacandes G.H., Suarez M., Garcia-Romero E., "A combined synchrotron powder diffraction and vibrational study of the thermal treatment of palygorskite-indigo to produce Maya blue", Journal of Materials Science, 2009, 44(20), 5524-5536, total citations 49, IF 1,471
5. Fina, A .,Tabuani, D., Frache, A., Boccaleri, E., Camino, G., "Octaisobutyl POSS thermal degradation", chapter in the book "Fire Retardancy of Polymers: New Applications of Mineral Fillers", 2005, pagg. 202-220, Royal Society of Chemistry ISBN 978-0-85404-582-2

AWARDS

"Best Chemistry degree thesis - II Facoltà di Scienze MFN" Turin University, academic Year 1995-96