



## Europass Curriculum Vitae

### Personal information

First name(s) / Surname(s) **Davide BONIFAZI**

Address(es)

Telephone(s)

E-mail

Nationality

Date of birth

Gender

**Actual Occupation** **Chair Professor in Supramolecular Organic Chemistry  
University of Cardiff (UK)**

### Work experience

2012-2015 **University of Namur (UNamur), Namur (Belgium)**  
**Academie de Louvain**  
Department of Chemistry  
Professor in Organic Chemistry  
1<sup>st</sup> Fellow Member of the Namur Research College (NARC)

09/2006-2012 **University of Namur (UNamur), Namur (Belgium)**  
**Academie de Louvain**  
Department of Chemistry  
Junior Professor in Organic Chemistry

2009-07/2016 **Università degli Studi di Trieste (Italy)**  
Department of Pharmaceutical and Chemical Sciences  
Part-time Professor at the Department of Chemical and Pharmaceutical Sciences

### Education and training

09/2004-2006 **Università degli Studi di Trieste (Italy)**  
Post-Doctorate, Prof. Dr. Maurizio Prato  
*"Organic Functionalization of Single-walled Carbon Nanotubes"*

- 2005 **Foundation of Research and Technology Hellas, FORTH, Patras (Greece)**  
 (1 month) Visiting Scientist, Prof. Dr. Stelios Couris in coll. with Prof. Dr. Maurizio Prato  
 "NLO properties of [60]Fullerene-donors Conjugates"
- 2004 **ETH Zürich (Switzerland)**  
 (4 months) Post-Doctorate, Prof. Dr. François Diederich  
 "Modification of surfaces with [60]Fullerenes for Molecular Electronics Applications"
- 2000-2004 **ETH Zürich (Switzerland)**  
 Ph.D. Organic Chemistry, Prof. Dr. François Diederich  
 "From Solution to Surfaces: Synthesis, Physical Properties, and Materials Applications of [60]Fullerene and Porphyrins Derivatives"
- 2001, 2003, 2004 **Weizmann Institute of Science, Rehovot (Israel)**  
 (10 months) Visiting Ph.D. student in the Group of Prof. Dr. David Cahen  
 "Tuning Electronic Properties of Semiconductor-based Devices by Adsorption of [60]Fullerene Derivatives"
- 1998-1999 **Università degli Studi di Parma (Italy)**  
 Diploma Work, Prof. Dr. Enrico Dalcanale  
 "Complexation Properties of Cavitands Functionalized at the Lower Rim with Pyridine Moieties"
- 1994-1999 **Università degli Studi di Parma (Italy)**  
 Diploma Studies in Industrial Chemistry.  
 Laurea in Industrial Chemistry with *Honoris*

#### Awards

- 2018 **Visiting Professor** at Department of Chemistry, University of Parma.
- 2012 **"Young Investigator Lectureship"** at the ISCHIA School of Organic Chemistry.
- 2011 **"ERC Starting Grant"** awarded by the European Research Council within the FP7 framework.
- 2010 **"G. Ciamician Medal"** awarded by the Italian Chemical Society (prize given to young emerging researchers with age below 35 for outstanding contributions to the field of Organic Chemistry).
- 2010 **Selected by the Belgian Royal Chemical Society** for the EUCHEM Organic Division Young Investigator's Workshop in Regensburg, Germany, 27-29th/08/2010.
- 2006 **"Junior Scientist"** award for the participation to the 41<sup>st</sup> EUCHEM Bürgenstock Conference, Switzerland.
- 2005 **"ETH Silver Medallion"** from the Swiss Federal Institute of Technology for the doctoral dissertation.
- 2004 **"EU Marie Curie Young Researcher RTN Fellowship"** (WONDERFULL, 2004-2005).
- 2004 **"NCCR Postdoctoral Fellowship"** Swiss National Centers of Competence in Research.

**Track Record** Since its establishment in 2006 the *Bonifazi's* group focused on the design and development of novel **synthetic strategies for the preparation of organic molecular structures that, through the exploitation of their peculiar physical and structural properties, can contribute to the demonstration of key functions or basic concepts in highly interdisciplinary fields at the frontiers between organic chemistry,**

**physics, materials science and biology.** The current scientific production includes **138 articles** (H-index: **34**) published in prestigious peer-reviewed journals and **5 patents** (for the details see relevant doc file). The expertise in the different domains has been also recognized by **45 invitations** in the last five years as a speaker at international conferences/meetings and research centers/universities. Author of four invited book chapters: i) "Functionalization Chemistry of [60]Fullerenes" in *Carbon Nanotechnology: Recent Developments in Chemistry, Physics, Materials Science and Device Applications*, L. Dai, ed.; Elsevier, 2006; ii) "Synthesis and Design of p-Conjugated Organic Architectures Doped with Heteroatoms" in *Functional Supramolecular Architectures for Organic Electronics and Nanotechnology*, P. Samori and F. Cacialli, eds.; Wiley, 2010; iii) "Supramolecular Chemistry of Fullerenes and Carbon Nanotubes at Interfaces" in *Supramolecular Chemistry of Fullerenes and Carbon Nanotubes* N. Martin and J. F. Nierengarten, eds.; Wiley, 2010; iv) "Selfassembly and Self-organization of p-Conjugated Organic Molecules on Surfaces" in "Organic Molecular Engineering" M. B. Nielsen, eds; Wiley, 2013. Editor-in-chief of a forthcoming contributed book entitled "Surface Organic Chemistry" for the Wiley series to be published by the end of 2015. Guest editor for a dedicated special issue (2009) in *Eur. J. Org. Chem.* and a thematic issue (2011) on "Materials for sustainable energy and environment" in *ChemSusChem*. In addition, he has organized three international NARC symposiums (*Chemistry, a Crossway Towards Interdisciplinary Science: A joint IOCD-NARC Symposium* in Namur, 150 participants / Chair / Belgium), involving contemporary leaders in chemical disciplines and several noble prizes in chemistry (Prof. J. M. Lehn, Prof. R. Noyori and Prof. A. Yonath). Three summer schools have been also organized in the frame of previous ITN projects.

## Research Collaborations

As some of the research objectives require specialized skills or particular infrastructural facilities not available on-site, complementary niche expertise is necessary to move forward in interdisciplinary research programs. We have thus established strong scientific collaborations with international leading research groups (from USA and EU) in the field of computational chemistry, electrochemistry, spectroscopy, microscopy, and surface science. Major collaborations:

### STM under UHV:

- Low-temperature self-assembly on surfaces mediated by coordinative interactions: Prof. J. Barth, Technical University of Munich, Munich, Germany; Self-assembly on surfaces mediated by H-bonding interactions: Dr. M. Sthoer, Zernike Institute for Advanced Materials, University of Groningen, The Netherlands;
- Molecular-surfaces interactions and charging effect (by means of UPS and STS) along with studies about covalent chemistry on surfaces: Prof. G. Costantini, University of Warwick, UK.

### Theoretical and computational studies:

- Theoretical simulations of the structural and electronic properties of supramolecular systems on metal surfaces through long-range corrected or dispersion-corrected DFT functionals and time-dependent DFT: Prof. A. De Vita, King's College London (UK);
- Molecular modelling of CNT hybrids with Molecular Dynamic approaches: Prof. R. Lazzaroni, Dr. J. Cornil, Dr. D. Beljonne, University of Mons & MATERIANOVA (BE);
- Molecular modelling via Molecular Dynamics of CNT-biomolecules hybrids: Dr. A. Magistrato, International School for Advanced Studies (SISSA/ISAS), Trieste, (IT).

**Polymer Chemistry:**

- Synthesis of active polymers for composite materials: Prof. P. Dubois, University of Mons (BE).

**Electrochemistry:**

- Prof. F. Paolucci, Dipartimento di Chimica, Università degli studi di Bologna, (IT).

**Photophysics/Photochemistry:**

- UV-VIS-NIR transient and steady-state emission and adsorption studies: Dr. N. Armaroli and Dr. A. Barbieri, Italian National Research Council in Bologna.
- Measurements of the third-order NLO properties (optical-Kerr effect and optical limiting): Prof. S. Couris, Foundation of Research and Technology Hellas (FORTH), Patras, (GR).
- Characterization of electrochromic devices: Prof. J. Parola and C. Laia, Faculdade de Ciências e Tecnologia Quinta da Torre, Monte da Caparica, Lisbon (PT).

**Crystallography:**

- Single-crystal and powder X-ray diffraction: Dr. Nicola Demitri, ELETTRA, Synchrotron Trieste (IT).
- Powder X-ray diffraction: Prof. K. Harris, Cardiff University (UK).

**Biology:**

- Biology of cancer cells: Prof. C. Michiels, Department of Biology, University of Namur (BE).
- Molecular genetics: Dr. D. Hermand, Department of Medicine, University of Namur (BE).

**Industrial Collaborations  
Concluded**

In the frame of the European Networks, our group collaborated with **BASF** (Dr. T. Breiner, self-assembly on surfaces of optically-active materials, Strasbourg, FR), **Philips** (Dr. P. Backmann, surface-template synthesis of carbon nanotubes, Aachen, DE), **Nanocyl** (Dr. J. Amadou, synthesis of carbon nanotubes, Namur, BE), functionalization of carbon-based surfaces for anchoring natural reaction centers for water splitting and H<sub>2</sub> production in collaboration with **H2-WIN** (Dr. T. Lorge, Namur, BE).

**Industrial Collaborations  
On-going**

Preparation of supramolecular blended materials composed of CNTs for ultrafast and responsive flexible electrochromic devices in collaboration with **Ynvisible** (Dr. C. Pinheiro Baptista, Lisbon, PT); development of BN-based materials for OFET applications with **BASF** (Dr. O. Enger, Basel, CH), development of UV-vis photoactive chromophores for organocatalytic transformations (Dr. A. Carlone, Chirotech Technology Centre, Cambridge, UK) and development of new luminophores for antibody targeting with **UNISENSOR** and **CER Group** (Dr. R. Marega, Namur, BE).

**Research Group**

Since the start of his independent career, Prof. Bonifazi successfully supervised 30 master students, 22 PhD students and 13 Post-docs. He is now leading an international research group composed of 12 PhD students: 5 Italians, 2 Belgians, 1 Portuguese, 1 Greek, 1 British, and 1 Ukrainian; 7 Post-doc fellows: 3 Italians, 2 French, 1 Croatian, and 1 Russian.

Mother tongue(s) **Italian**

Other language(s) **English (fluent)**  
**French (fluent)**

Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 - Codice in materia di protezione dei dati personali".

Data 07/01/2019