

## Marco Bettinelli

### Narrative biography – February 2018



Born in 1957, Marco Bettinelli received his doctoral degree in Chemistry cum laude from the University of Parma, Italy, in 1981. He has been post-doc at Birkbeck College, University of London (UK), Assistant Professor at the University of Padova (1983-1992) and Associate Professor at the University of Salerno (1992-1993). In 1993 he moved to the University of Verona, Italy, where presently is Professor of Inorganic Chemistry in the Department of Biotechnology.

In 2008 he was awarded a doctorate honoris causa from Blaise Pascal University, Clermont-Ferrand, France. Marco Bettinelli has published 480 papers in the fields of Chemistry and Optical Spectroscopy of inorganic materials, and according to Scopus his h-index is currently 53. He has been a Visiting Professor in various universities (Université de Caen, France; Université Blaise Pascal, Clermont-Ferrand, France; Kyoto University, Japan; Boston College, USA; Chalmers University of Technology, Gothenburg, Sweden; Nanjing Tech, China) and invited speaker or organizer in many international conferences. Since May 2013 Marco Bettinelli is Editor-in-Chief of the Journal of Luminescence (Elsevier). His scientific interests deal with numerous aspects of luminescent materials, and in particular with the synthesis, characterisation and spectroscopic properties (absorption and luminescence) of crystalline, nanocrystalline and amorphous systems containing rare earth or transition metal ions.

## Resume – February 2018

### 1. Academic education

- 1981: Doctorate in Chemistry from University of Parma, Italy, cum laude.

### 2. Appointments

- 2002–present: Full Professor, Inorganic Chemistry, University of Verona, Italy.
- 1993–2002: Associate Professor, Inorganic Chemistry, University of Verona, Italy.
- 1992–1993: Associate Professor, Inorganic Chemistry, University of Salerno, Italy.
- 1983–1992: Assistant Professor, Inorganic Chemistry, University of Padova, Italy.

### 3. Awards and special commissions

- NATO post-doc fellow in the Department of Chemistry, Birkbeck College, University of London (1987-88).
- Doctorate honoris causa from Blaise Pascal University, Clermont-Ferrand, France (May 2008).
- Marco Polo Award for the scientific and technological collaboration between Italy and Japan in the field of Nanotechnology (November 2011).
- Fellow of the Royal Society of Chemistry (FRSC CChem).
- Visiting Professor at Université de Caen (France), Université Blaise Pascal, Clermont-Ferrand (France), Kyoto University (Japan), Chalmers University (Gothenburg, Sweden), Boston College (USA), Nanjing Tech (China).
- Editor-in-Chief of the Journal of Luminescence (Elsevier), 2013-date. Until May 1st 2013, Member of the Editorial Board and Associate Editor of the same journal (for seven years).
- Guest Editor of the Special Issue of the journal Optical Materials (Volume 33, Issue 7 pp. 979-1142 (May 2011), Rare earth doped materials for optical based technologies, Symposium K of the 2010 EMRS Spring Meeting, and of the Special Issue of the journal ECS Journal of Solid State Science and Technology (Volume 2, Issue 2 pp. R3001-R3176 (2013), JSS Special Issue on luminescent materials for solid state lighting).
- Co-chair of ICFE8, 8th International Conference on f-Elements, August 2012, Udine, Italy.
- Member of Organizing Committees of numerous international conferences.
- Reviewer for numerous international journals in Chemistry, Physics and Materials Science.
- Associate researcher with CNR-IFAC, Firenze, Italy (group of Prof. G. C. Righini) for five years.

- Member for six years of the Academic Senate of the University of Verona, and Vice-Dean of the Faculty of Science of the University of Verona (2003-2006).
- Responsible for various programs of scientific cooperation between Italy and Spain (Universidad Autonoma Madrid), Poland (Polish Academy of Science, Wroclaw), Japan (Kyoto Institute of Technology) and Mexico (Universidad Autonoma Metropolitana-Iztapalapa).
- Member of the Review College of EPSRC (Engineering and Physical Sciences Research Council), UK Government's leading funding agency.
- Member of the peer review panel Synthetic chemistry and materials (PE5), ERC Advanced Grant 2016.

#### **4. Summary of scientific production**

- 480 scientific documents, 12265 total citations by 8696 documents, h-index 53 (Scopus, 23 February 2018).

#### **5. Major publications in the past five years**

The number of publications in the years 2013-17 is 91. A selection of 5 major papers can be found below.

- Zhong, T., Kindem, J.M., Bartholomew, J.G., Rochman, J., Craiciu, I., Miyazono, E., Bettinelli, M., Cavalli, E., Verma, V., Nam, S.W., Marsili, F., Shaw, M.D., Beyer, A.D., Faraon, A., Nanophotonic rare-earth quantum memory with optically controlled retrieval, (2017) *Science*, 357 (6358), pp. 1392-1395.
- Qin, X., Liu, X., Huang, W., Bettinelli, M., Liu, X., Lanthanide-Activated Phosphors Based on 4f-5d Optical Transitions: Theoretical and Experimental Aspects, (2017) *Chemical Reviews*, 117 (5), pp. 4488-4527.
- Bettinelli, M., Carlos, L., Liu, X., Lanthanide-doped upconversion nanoparticles, (2015) *Physics Today*, 68 (9), pp. 38-44.
- Rodríguez-Sevilla, P., Rodríguez-Rodríguez, H., Pedroni, M., Speghini, A., Bettinelli, M., Solé, J.G., Jaque, D., Haro-González, P., Assessing Single Upconverting Nanoparticle Luminescence by Optical Tweezers (2015) *Nano Letters*, 15 (8), pp. 5068-5074.
- Bettinelli, M., Upconversion nanocrystals: Bright colours ahead (2015) *Nature Nanotechnology (News and Views)*, 10 (3), pp. 203-204.

#### **6. Major scientific projects and other funding**

- Numerous projects funded by the EU, the University of Verona, the Italian government and local institutions.

## 7. Invited talks in international conferences in the past five years

A short list of selected invited talks given in international conferences in the past five years is provided below.

- a. International Workshop on Photoluminescence in Rare Earths: Photonic Materials and Devices (PRE'17), November 30-December 2, 2017, Rome, Italy
- b. 18<sup>th</sup> International Conference on Luminescence and Optical Spectroscopy of Condensed Matter (ICL-2017) August 27-September 1, 2017, João Pessoa, Brazil.
- c. Phosphor Safari 2016 Hong Kong, Hong Kong International Symposium on Luminescence, Spectroscopy and Applications, 28 Nov - 1 Dec 2016.
- d. 6<sup>th</sup> International Conference on Excited States of Transitions Elements (ESTE 2016), 21-26 August, 2016 Polanica Zdrój, Poland.
- e. Workshop on Recent Advances in Luminescence Research, International School of Atomic and Molecular Spectroscopy: Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Italy, Aug 1-7, 2016.
- f. International Conference on Rare Earths 2016 in Sapporo, Sapporo, Japan, Jun 5-10, 2016.
- g. Phosphor Global Summit 2016, Newport Beach, USA, Mar 7-9, 2016.
- h. 4<sup>th</sup> International Conference on Rare Earth Materials (REMAT 2015), Zamek Topacz, Ślęza/Wrocław, Poland, Oct 26-28, 2015.
- i. The 5<sup>th</sup> International Workshop on Advanced Spectroscopy and Optical Materials (5<sup>th</sup> IWASOM), Gdańsk (Poland), Jul 19-24, 2015.
- j. 17<sup>th</sup> International Conference on Luminescence and Optical Spectroscopy of Condensed Matter (ICL'14) Wrocław, Poland, Jul 13-18, 2014.
- k. International Conference on Fluorescent Up-converting Nanoparticles: a Platform for Energy and Biomedical Applications, Torremolinos (Málaga), Spain, Jun 4-6, 2014.
- l. 18<sup>th</sup> International Conference on Dynamical Processes in Excited States of Solids (DPC'13), Fuzhou, China, Aug 4-9, 2013.
- m. Symposium J3, Luminescence and Display Materials - Fundamentals and Applications, 224<sup>th</sup> Electrochemical Society Meeting, San Francisco, USA, Oct 27-Nov 1, 2013.