Curriculum Vitae

PERSONAL INFORMATION

Family name, First name: Pasquini, Luca

Researcher unique identifier(s): ORCID 0000-0001-8939-2204; ResearcherID: U-1826-2017

Date of birth: 16/05/1970

Nationality: Italian

URL for web site: https://www.unibo.it/sitoweb/luca.pasquini/en

- **EDUCATION**

1999 PhD in Physics
Department of Physics, University of Bologna, Italy

1994 Master Degree in Physics
Department of Physics, University of Bologna, Italy

- **CURRENT POSITION(S)**

2016 – Associate Professor
Department of Physics and Astronomy, University of Bologna, Italy

2011 – Group leader – Nanostructured Materials for Energy Conversion and Storage
Department of Physics and Astronomy, University of Bologna, Italy

- **PREVIOUS POSITIONS**

2008 – 2015 Assistant Professor (permanent staff member)
Department of Physics and Astronomy, University of Bologna, Italy

2007 – 2008 Research technician
Department of Physics, University of Bologna, Italy

- **FELLOWSHIPS**

2019 – 2019 Visiting researcher (2 months) at the Institute of Nanotechnology, Karlsruhe Institute of Technology, Germany

2000 – 2004 Post-doctoral fellow, Department of Physics, University of Bologna, Italy

2001 – 2001 Visiting scientist at the European Synchrotron Radiation Facility (4 months), France

2000 – 2000 Post-doctoral fellow, Istituto Nazionale per la Fisica della Materia, Unit of Bologna, Italy

1999 – 1999 Post-doctoral fellow, Institut für Theoretische und Angewandte Physik, University of Stuttgart, Germany

- **TEACHING ACTIVITIES**

2020 – Responsible of the course "Structure of Matter", for the Bachelor Degree in Astronomy, University of Bologna, Italy

2016 – 2020 Responsible of the course "Physics", for the Bachelor Degree in Engineering and Science of Computing, University of Bologna, Italy

2017 – Responsible of the course "Microscopic Kinetics and Thermodynamics" (in English) for the Master Degree in Physics, University of Bologna, Italy

2012 – Teaching module within the course "Laboratory of Electromagnetism and Optics" for the Bachelor Degree in Physics, University of Bologna, Italy

2010 – 2016 Responsible of the course "Physics of Materials" for the Master Degree in Physics, University of Bologna, Italy

2010 – Supervisor of 19 Bachelor thesis in Physics, 18 Master Thesis in Physics, and 3 Ph.D. thesis in Physics

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2019 Chairman, Symposium Q of the E-MRS Fall Meeting 2019, Warsaw, Poland

2018 Chairman, Symposium L of the E-MRS Fall Meeting 2018, Warsaw, Poland

2015 Chairman, Symposium C of the E-MRS Fall Meeting 2015, Warsaw, Poland

2011 – 2015 Co-organizer of 6 Scientific Meetings (countries: Italy, Serbia, Czech Republic, Poland, France, Turkey) during the period as Grant Holder of the COST Action MP1103 "Nanostructured materials for Solid-State Hydrogen Storage"

- **INSTITUTIONAL RESPONSIBILITIES**

2017 – Member of the Board of Teachers, Doctoral School in "Nanoscience for Medicine and Environment", Univ. Bologna

2017 – Member of the Athenaeum Advisory Board for Energy Research, Univ. Bologna, Italy

2016 – Member of the Final Evaluation Committee, Bachelor Degree in Physics, Univ. Bologna

2012 – 2015 Member of the Steering Committee, Dept. Physics and Astronomy, Univ. Bologna, Italy

2012 – 2015 Member of the Steering Committee, Faculty of Science, Univ. Bologna, Italy

- **COMMISSIONS OF TRUST**

2018 – Expert member of Task 40 "Energy Storage and Conversion Based on Hydrogen", Hydrogen Technology Collaboration Programme, International Energy Agency

2014 – Member of the Steering Committee of the Joint Programme "Advanced Materials and Processes for Energy Applications (AMPEA)" of the European Energy Research Alliance

2011 – 2015 Member of the Management Committee, COST Action MP1103 "Nanostructured Materials for Solid State Hydrogen Storage"

2000 – Reviewer for several scientific journals in condensed matter physics, physical chemistry, nanoscience and materials science, mainly edited by American Physical Society, American Chemical Society, Royal Society of Chemistry, Elsevier

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

2016 – Member, Italian Physical Society, Italy

2009 – Member, Materials Research Society, US

2010 – Member, Italian Society for Synchrotron Radiation, Italy

- **PREVIOUS AND ONGOING GRANTS**

2020 Work Package Leader and Responsible of the DIFA research unit in the H2020 Project "CONDOR: COmbined suN-Driven Oxidation and CO2 Reduction for renewable energy storage"

2011 – 2015 Grant Holder of COST Action MP1103 "Nanostructured Materials for Solid State Hydrogen Storage"

2011 – 2015 Responsible of the DIFA research unit within the ERC Advanced Grant "CoralWarm"

- **SCIENTIFIC LEADERSHIP PROFILE**

Luca Pasquini has been fascinated by the physics of nanomaterials, in particular nanoparticles (NPs) and nanocrystalline solids, since the beginning of his Ph.D. He has always gone deep into the investigated subjects with the aim to discover and understand exciting phenomena related to the peculiar atomic structure of interfaces and to size-dependent physics and chemistry, with emphasis on structure-property relationships and applicative issues.

Since 2011, he is leader of the group "Nanostructured Materials for Energy Conversion and Storage" at the Department of Physics and Astronomy of the University of Bologna. He has been a core promoter of the COST Action MP1103 "Nanostructured materials for solid-state hydrogen storage" (2011-2015) for which he served as Grant Holder, steering group member and task leader, coordinating the network activities of over 200 scientists across Europe. In this period, his group has carried out innovative studies on the hydrogen sorption kinetics and thermodynamics of Mg-based NPs. In the last years, he has developed two novel methodologies: i) the reactive gas phase condensation for the direct synthesis of hydride and oxide NPs or metal-oxide core-shell NPs, and ii) the simultaneous use of two vapour sources under gas flow, able to produce nanoalloys even from strongly immiscible elements (Calizzi et al, *Phys. Chem. Chem. Phys.* 2016). By combining these two methods, his group has just achieved record-breaking hydrogen sorption kinetics in MgH_2-TiH_2 composite NPs (Patelli et al, *J. Phys. Chem. C* 2017, Patelli et al, *Nano Energy* 2020).

In the last years, his research interests expanded to include nanomaterials for photo(electro)chemical energy conversion. He has conducted novel experiments to unravel the mechanisms of visible light absorption and photocatalysis in V-doped TiO2 NPs and thin films (Rossi et al, *Appl. Catalysis* B 2018; Piccioni et al, *J. Phys. Chem C* 2020) and Ti-doped hematite nanostructures (Berardi et al, *ACS Appl. Mat. Interfaces* 2020). In this field, he has been active member of a consortium that has prepared and submitted the H2020 project "CONDOR", selected for funding (about 4 million Euros) by the EU Commission and kick-started on November 2020.

Total number of publications: 112 articles in international peer-reviewed journals or conference proceedings, 3 book chapters, ~45 presentations to international/national conferences/meetings, of which 14 invited. *h*-index: 30 (Google scholar); 25 (Scopus).