SHORT CURRICULUM VITAE OF LORENZO MALAVASI (website: malavasi.unipv.it)

Prof. Lorenzo Malavasi received his degree in Chemistry in 1999 and a PhD in Chemical Science in 2003. From 2003 to 2007 she was a post-doc student at Department of Physical Chemistry of the University of Pavia. From 2008 to 2014 he was an Assistant Professor in the same Department and since 2021 he is Full Professor at the Dept. of Chemistry-Division of Physical Chemistry of the University of Pavia and since 2008 he is lecturer in: i) Materials Chemistry; ii) Laboratory of Materials Chemistry; iii) Nanochemistry and Nanomaterials; iv) Chemistry (at the Engineering Faculty). He is member of the board of the PhD in Chemical Science of the Pavia University since 2013. He was member of the Academic Senate (2018-2021) and is actually Vice-Director of the Department of Chemistry of the University of Pavia (since 2018).

Lorenzo Malavasi is working in several areas of solid state chemistry with particular interest in the investigation of structure–properties correlation in different kinds of functional materials, such as materials for solid oxide fuel cells, photovoltaics, photocatalytic water splitting, and high-temperature superconductors. Structural investigation is carried out by advanced tools such as high resolution synchrotron and neutron diffraction and total scattering coupled to pair distribution function analysis (PDF). The final aim of this approach is to correlate the basic functional properties such as ionic transport and/or mixed conductivity and device performance with structural and defect chemistry properties by pushing the characterization tools as close as possible to the operando conditions of a material. In addition, strong efforts are directed towards the optimization of selected materials through chemical doping strategies and the development of innovative synthetic routes together with the use of combined experimental and theoretical studies in order to look for new materials.

Lorenzo Malavasi is author of more than 220 publications on international journals, 2 book chapters and many communications at both national and international conferences (with more than 20 invited lectures/plenaries and key notes). He has an h-Index of 43 (Google Scholar Source) and his publications have been cited more than 7200 times. He has been the Editor of "Novel Superconducting Materials" journal (De Gruyter) from 2014-2017. Since 2020 is Editor of Journal of Physics and Chemistry of Solids (Elsevier).

He was a member of various Research Units of the University of Pavia (UdR-UNIPV), CNR, INSTM, devoted to fundamental and applied research activities in the framework of both national and international Projects (Cariplo Projects, PRIN, FISR, FIRB), Astil Project Italy/Brazil Cooperation founded by Regione Lombardia). All these projects were focused on energy materials, such as SOFCs, catalyst materials and superconductors. He was the Principal Investigator (PI) of the following projects since it was appointed as permanent staff in the Department: 2013-2015 Cariplo Fundation project on “Carbon Based Superconductors”; 2013-2015 Lombardy Region project on “Nanostructured Oxides for Photocatalytic water splitting”; 2010-2012 Lombardy Region project on “Materials for Protonic Fuel Cells”; 2009-2012 Cariplo Fundation" project on Pnictide High-temperature superconductors, PRIN2015 “PERSEO” Project on “Lead-free hybrid perovskites”, PRIN2022 and PRIN2022 PNRR projects.

He has experiences as referee in several Journals, such as Advanced Energy Materials, Energy and Environmental Science, Journal of the American Chemical Society, Advanced Functional Materials, Journal of Materials Chemistry A, Nature Communications, Angewandte Chemie, Physical Review Letters, Chemistry of Materials (among the others). He is an expert for the evaluation of international projects such as HORIZON 2020, ERANETMED, Polish NCN, ERC Starting and Consolidator Grant, and EVAL-INCO calls. He was also involved in the peer reviews and evaluation of some projects funded by Italian Ministry of Research and University (PRIN, FIRB and SIR projects – MIUR) and in the VQR.

He was the recipient of the Young Scientist Award for outstanding work in the field of perovskites at the International Conference on Perovskites held in late 2005 in Zürich, of the “Alfredo di Braccio” Prize for Chemistry 2008 of Accademia Nazionale dei Lincei awarded to distinguished under 35-year-old chemists and contributed the Journal Materials Chemistry and Chemical Communications “Emerging Investigator” issues in 2010 and 2011. He received several invitations to contribute with papers and reviews by Journal of Materials Chemistry A and C, Chemical Communications and Chemical Society Reviews.

Five representative publications:

- 1) Romani L., Speltini A., Dibenedetto C. N., Listorti A., Ambrosio F., Mosconi E., Simbula A., Saba M., Profumo A., Quadrelli P., De Angelis F., Malavasi L, Experimental Strategy and Mechanistic View to Boost the Photocatalytic Activity of Cs3Bi2Br9 Lead-Free Perovskite Derivative by g-C3N4 Composite Engineering, (2021) Adv. Funct. Mater. 2104428. DOI: 10.1002/adfm.202104428
- 2) Romani, L, Speltini, A., Ambrosio, F., Mosconi, E., Profumo, A., Marelli, M., Margadonna, S., Milella, A., Fracassi, F., Listorti, A., De Angelis, F., Malavasi, L., Water-Stable DMASnBr3 Lead-Free Perovskite for Effective Solar-Driven Photocatalysis, (2021) Angew. Chem. Int. Ed., 60 (7), pp. 3611-3618. DOI: 10.1002/anie.2020075845
- 3) Chiara R., Morana M., Boiocchi M., Coduri M., Striccoli M., Fracassi F., Listorti A., Mahata A., Quadrelli P., Gaboardi M., Milanese C., Bindi L., De Angelis F., Malavasi L., Role of Spacer Cations and Structural Distortion in Two-Dimensional Germanium Halide Perovskites, (2021) J. Mater. Chem. C, 9, pp. 9899-9906. DOI: 10.1039/D1TC02394B
- 4) Corti, M., Chiara, R., Romani, L., Mannucci, B., Malavasi, L., Quadrelli, P., g-C3N4/metal halide perovskite composites as photocatalysts for singlet oxygen generation processes for the preparation of various oxidized synthons, (2021) Catal. Sci. Technol., 11, pp. 2292-2298. DOI: 10.1039/D0CY02352C
- 5) Drużbicki K., Lavén R., Armstrong J., Malavasi L., Fernandez-Alonso F., Karlsson M., Cation Dynamics and Structural Stabilization in Formamidinium Lead Iodide Perovskites, (2021) J. Phys. Chem. Lett., 12, pp. 3503-3508. DOI: 10.1021/acs.jpclett.1c00616

Pavia, 05.02.2024

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