

June 2024

Marcello Berto

Ricercatore a tempo determinato lettera a
Dipartimento di Scienze della Vita

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EDUCATION and TRAINING

- Bachelor degree in Chemistry (104/110), University of Modena and Reggio Emilia, October 28, 2010.
“Spectroscopic study of the pH-dependent conformational equilibria on cytochrome c mutants from *Saccharomyces cerevisiae*”, supervisor prof. G. Battistuzzi.
- Master degree in Chemical Sciences (110/110), University of Modena and Reggio Emilia, December 20, 2012.
“Study of the physical-chemical properties of functionalized surfaces by means of self-assembled monolayers of aromatic oligomers”, supervisor prof. M. Borsari.
- PhD in Molecular and Regenerative Medicine, University of Modena and Reggio Emilia, March 10, 2017.
“Organic Electronic Biosensors for the detection of pathology-relevant biomarkers”, supervisor prof. F. Biscarini.

RESEARCH EXPERIENCE ABROAD

- Visiting student, Laboratory of Organic Electronics (LOE), Linköping University, Sweden, June 01-30, 2015 and November 14-24, 2016.
Project title: “Biosensors based on Electrolyte Gated Organic Field-Effect Transistors for the Detection of Inflammatory Biomarkers”, Host prof. Daniel T. Simon.
- Visiting researcher, BioSensor Technologies Group, Austrian Institute of Technology, Austria, February – March 2019.
Project title: “Coupling Optical and Electronic platform for biosensing” Host Prof. Wolfgang Knoll.

FUNDED PROJECTS

- Project title: **Detection of Fluorinated Pollutants through Organic Electronic Devices (DeFOE)**. *Funding agency*: Fondo di Ateneo per la Ricerca (FAR) 2021 Dipartimento di Scienze della Vita – Università di Modena e Reggio Emilia (Coordinator). The objective of the DeFOE project is to fabricate, optimize and

validate a new sensor for PolyFluoroAlkyl substances (PFAS) based on electrolyte-gated organic transistor (EGOT) architecture.

TALKS AT CONFERENCES

- 12th International Conference on Organic Electronics (ICOE2016), Bratislava (Slovak Republic), June 13-15, 2016.
(Title: “Electrolyte Gated Organic Field-Effect Transistor biosensor for detection of cytokines in bodily fluids”).
- Winterschool on Biophotonics and Bioelectronics, Darmstädter Haus Hirschegg (Austria), February 18-24, 2018.
(Title: “EGOFET biosensors for biomarkers and pathogens”).
- Invited speaker at Nanoinnovation 2018, Roma (Italy), September 11-14, 2018.
(Title: “Biosensing with organic electronic transistors”).
- 4th OrbItaly – Organic Bioelectronics Italy, Milano (Italy), October 17-19, 2018.
(Title: “Electrolyte Gated Organic Transistors for Biosensing Across Different Lengthscales”).
- 2nd Materials.it, Bologna (Italy), October 22-26, 2018
(Title: “Organic Transistor Biosensors for biomarkers and pathogens”).
- 2019 VBST Joint Seminar on Soft Materials, Darmstädter Haus Hirschegg (Austria), February 10-15, 2019.
(Title: “EGOFET biosensors based on protein/carbon Nanotubes hybrids”).
- Nano-DAY IV, Milano (Italy), December 11-14, 2019.
(Title: “Carbon nanotubes/proteins hybrid for Organic Electronics”).
- NiFty workshop on New-Generation Nanostructured Fluorinated Materials for 19F-MRI and their Biophysicochemical Interactions, Modena (Italy), September 24, 2021 (Title: “Electrolyte-gated organic transistor with polymeric electrodes for the detection of fluorinated molecules”) and Trieste (Italy), March 30-31, 2023 (Title: “Chemical sensing without a specific recognition unit: the PEDOT:X case”).
- Invited speaker at Nanoinnovation 2023, Roma (Italy), September 18-22, 2023.
(Title: “Organic Electronics for health monitoring”).

OTHER ATTENDED CONFERENCES AND SCHOOLS

- International Workshop on Protein Electron Transfer: from Fundamentals to Applications for Health, University of Modena and Reggio Emilia, Modena (Italy), October 29-30, 2013.
(poster: “Intra-molecular electron transfer of Azurin immobilized on aromatic self-assembled monolayers”).

- 1st International Winter School on Bio-Electronics (Bio-El2014), Kirchberg in Tirol (Austria), February 22 – March 01, 2014.
- 10th International Conference on Organic Electronics (ICOE2014), Modena (Italy), June 11-13, 2014.
- Workshop “From Cells to Biomaterials”, Modena (Italy), October 20, 2014.
- 14a Giornata della Chimica Emilia-Romagna, Parma (Italy), December 18, 2014. (poster: “Tuning Surface Properties of Polycrystalline Au for Bio-Sensing in Liquid and Digital μ -Fluidics”).
- 1st OrbItaly – Organic Bioelectronics in Italy: from Biosensors to Neuronal Interfaces, Modena (Italy), September 10-11, 2015. (poster: “Pentacene-based EGOFET Biosensor for Detection of TNFalpha”).
- 7th School on Organic Electronics - Lake Como School of Advanced Studies, Como (Italy), September 13-18, 2015. (poster: “Polycrystalline-Gold/Liquid Interfaces: Functionalization Techniques for Bio-Sensing and Digital Microfluidics”).
- 15a Giornata della Chimica Emilia-Romagna, Modena (Italy), December 18, 2015. (poster: “Pentacene-based EGOFET Biosensor for Detection of TNFalpha”).
- 12th International Conference on Organic Electronics (ICOE2016), Bratislava (Slovak Republic), June 13-15, 2016. (poster: “High performance bench-processed Electrolyte-Gated Field-Effect Transistors (EGOFET) based on soluble C8-BTBT-C8”).
- 3rd Workshop on Surfaces, Interfaces and Functionalization Processes in Organic Compounds and Applications (SINFO III), Napoli (Italy), June 27-29, 2016. (poster: “High performance bench-processed Electrolyte-Gated Field-Effect Transistors (EGOFET) based on soluble C8-BTBT-C8”).
- 16a Giornata della Chimica Emilia-Romagna, Ferrara (Italy), December 19, 2016. (poster: “Biorecognition in Organic Field-Effect Transistors Biosensors”).
- 1st Workshop on Organic Neuromorphic Devices, Italian Institute of Technology, Ferrara (Italy), June 12-14, 2019.
- 1st School of Supramolecular and Bio-Nanomaterials - Lake Como School of Advanced Studies, Como (Italia), 13-17 June 2022.
- Forum nazionale sulla medicina di precisione – Il modello HEAL ITALIA e il contributo della Ricerca al Sistema Sanitario del Futuro, Palermo (Italy), June 13-15, 2024. (poster: “Detection of extracellular vesicles with electrolyte-gated organic transistor biosensors”).

REVIEWING AND SCIENTIFIC COMMITTEES ORGANIZING ACTIVITIES

Serving as a reviewer for RSC (Royal Society of Chemistry) journals (Materials Horizon, Journal of Materials Chemistry A), IOP journals (Flexible and Printed Electronics), and MDPI (Multidisciplinary Digital Publishing Institute) journals (Sensors, Biosensors, Electronics, Micromachines, Materials, Crystals, Chemosensors).

Topic Editor for Electronics (MDPI) and Biosensors (MDPI).

Member of the Organizing Committee of 1st OrbItaly – Organic Bioelectronics in Italy: from Biosensors to Neuronal Interfaces, Modena (Italy), September 10-11, 2015

Member of the Organizing Committee of NiFty workshop on New-Generation Nanostructured Fluorinated Materials for ¹⁹F-MRI and their Biophysicochemical Interactions, Modena (Italy), September 24, 2021

External referee for PhD school in Physics of Politecnico of Turin.

STUDENTS TUTORING

Supervision of 2 bachelor thesis (Biotechnology) and 3 master thesis (Industrial Biotechnology).

Co-supervision of 5 master thesis (Industrial Biotechnology) and 3 bachelor thesis (Biotechnology), Department of Life Sciences, Università degli Studi di Modena e Reggio Emilia.