

# Roberto Spotorno

Associate professor

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## Education and training

2015

### PhD in Chemical Sciences and Technologies

Development of Stack Components for New Generation Solid Oxide Fuel Cells

University of Genoa - Genoa - IT

2011

### Master degree in Materials Science and Engineering

Development of Cathodes for Solid Oxide Fuel Cells by Suspension Spraying and Sintering - 110/110 cum laude

University of Genoa - Genoa - IT

## Professional history

2025 - ONGOING

### Associate professor

Teaching Metallurgy I and Metallurgy of non-ferrous alloys

Research in the fields of Metallurgy, Corrosion and Electrochemistry

University of Genoa - Genoa - IT

2018 - 2025

### Researcher

Teaching Metallurgy I and Metallurgy of non-ferrous alloys

Research in the fields of Corrosion and Materials science

University of Genoa - Genoa - IT

2016 - 2018

### Post-doctoral fellow

Characterization of materials for Solid Oxide Fuel Cells - Study of wet and high-temperature corrosion mechanisms - CAD design - Teaching activity

University of Genoa - Genoa - IT

2015 - 2016

### Post-doctoral fellow

Development of ceramic materials for Solid Oxide Fuel Cells -Electrical and structural characterization of metallic and ceramic materials.

National Council of Research - Genoa - IT

## Experience

### MAIN SEMINARS

#### **2025 Giornate Nazionali sulla Corrosione e Protezione, 25-27/06/2025, Ancona**

Oral presentation: R. Spotorno, F. Boragina, M. Pedemonte, C. Criaco, P. Piccardo, Misure di corrosione non invasive su manufatti di interesse storico-artistico.

#### **2024 Copper Alloys 2024, 9-9/10/2024, Stockholm, Sweden**

Oral presentation: R. Spotorno, F. Boragina, C. Criaco, P. Piccardo, J. Tabolli, A. Salvi, V. Basilissi, L. Rivaroli, Timeless corrosion: modern understandings applied to the diagnosis of cultural heritage artefacts

#### **2024 Sofia Electrochemical Days 2024, 2-6/7/2024, Varna, Bulgaria**

Oral presentation: Presentazione orale: R. Spotorno, P. Piccardo, Unveiling time constant profiles in electrochemistry: principle and applications of differential impedance analysis

#### **2024 55th Heyrovsky Discussions & 13th International Zdravko Stoyanov Symposium on Electrochemical Impedance Analysis, 9-13/06/2024, Castle Trest, Repubblica Ceca**

Introductory lecture: R. Spotorno, D. Vladikova, P. Piccardo, Rotating Fourier Transform Applied to Electrochemical Impedance Spectroscopy: New Opportunities for Low-Frequency Measurements

#### **2024 SPRING MEETING of the European Materials Research Society (E-MRS), 27-31/5/ 2024, Strasbourg (Francia)**

Oral presentation: R. Spotorno, F. Boragina, C. Criaco, J. Tabolli, P. Piccardo, Electrochemical probe for localized corrosion measurements on cultural heritage artefacts.

### SCIENTIFIC RESPONSIBILITY FOR RESEARCH PROJECTS ACCEPTED FOR FUNDING ON THE BASIS OF COMPETITIVE CALLS INVOLVING PEER REVIEW

#### **2019-2021 Principal investigator of the project DECODER - Development of a test rig for enhanced desalination/concentration batteries optimized with energy recovery**

The objective of this project was to develop a setup to test metal electrodes or oxides for electrochemical desalination batteries. The activity involved the design, implementation of the measurement system, together with the preparation and characterization of a choice of electrodes based on Ag, Ti, Mn.

**2018-2022 Responsible of unit in the european project AD ASTRA - HArnessing Degradation mechanisms to prescribe Accelerated Stress Tests for the Realization of SOC lifetime prediction Algorithms**

This project aims to define Accelerated Stress Testing (AST) protocols deduced from a systematic understanding of degradation mechanisms of aged components in solid oxide cell (SOC) stacks, operating in both fuel cell and electrolysis modes. In particular, fuel and oxygen electrode issues and interconnect contact loss will be tackled.

**2014-2017 Scientific manager of the european project ENDURANCE -ENhanced DURability materials for Advanced stacks of New solid oxide fuel CELls**

The focus of the project was the understanding of the sources and mechanisms of degradation and failure in stacks of solid oxide fuel cells operated in real conditions. This in order to enhance and extend the reliability by applying adequate investigation protocols and efficient solutions to mitigate risks and troubles.

**EDITORSHIP OR PARTICIPATION IN EDITORIAL BOARDS OF JOURNALS, PUBLISHING SERIES, ENCYCLOPAEDIAS AND TREATISES**

**2025 Guest Editor for the journal Heritage**

Special issue dal titolo "Heritage Materials Matter: Recent Perspectives in Diagnostics and Conservation".

**2020 Guest Editor for the journal Metals**

Special issue dal titolo "High-Temperature Corrosion and Protection of Alloys".

**PRIZES AND ACCOLADES FOR SCIENTIFIC ACTIVITY, INCLUDING MEMBERSHIP OF ACADEMIES**

**2017 Young Scientist Grant of the European Energy Research Alliance**

Awarded for the contribution: "Characterization of Glass-Ceramic Materials for Sealing Application at SOFC Operating Conditions by Electrochemical Impedance Spectroscopy" presented at the "11th International Symposium on Electrochemical Impedance Analysis", 6-10 novembre 2017, Camogli, Italy

**2017 Best Young Scientist Oral Presentation award**

Awarded for the contribution: "Influence of Working Parameters on Anode-Supported Cells studied by Electrochemical Impedance Spectroscopy" presented at the "5th Regional Symposium on Electrochemistry South-East Europe", 07-11/06/2015, Pravets (BG)

**PARTICIPATION IN THE CREATION OF NEW BUSINESS ENTITIES (SPIN-OFFS),  
DEVELOPMENT, USE AND COMMERCIALISATION OF ACADEMIC PATENTS**

**2020 International patent application**

“Electrochemical process for restoring the capacity of one or more lithium batteries” WO2020230078A1, inventors M. Venturini, P. Piccardo, R. Spotorno, M. Smerieri