RABISSI Claudio, *PhD*, *Assistant professor*

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Academic and professional experience

Dr. Claudio Rabissi graduated in Energy Engineering at Politecnico di Milano in 2013 with an award-winning thesis work on DMFC technology, obtaining his PhD cum Laude in Energy at Politecnico di Milano in 2018 with the dissertation "Localized DMFC components optimization for technology durability improvement", developed in the frame of H2020 FP7 European project "Second ACT", which lead to a PCT patent filing. During the PhD, as a visiting researcher, he consolidated international cooperation with important institutions such as NPL (UK) and UCONN (USA), developing novel experimental techniques able to obtain insights on local operation of electrochemical devices.

After earning a post-doc position to research on electrochemical energy conversion and storage technology such as low-temperature fuel cells, redox flow batteries and lithium-ion battery, he is now Assistant Professor since 2019, full lecturer of Engineering Thermodynamics and Heat Transfer course for Management Engineering and full time researcher involved in a number of research activities, ranging from private and public funded research projects on the topic. Particularly, he is now coordinating the activities of the research group MRT Fuel Cell & Battery on lithium-ion battery technology, with a dedicated focus on investigating battery degradation by means of physical modelling and innovative experimental characterization. The main interest aims in the direction of a more effective exploitation of useful life of the devices, improving the understanding of performance degradation to enable a much-needed battery circular economy, comprising samples reutilization prior to recycling.

Scientific production

Author of 13 scientific peer-reviewed publications on electrochemical technologies and more than 12 international conference contributions, 1 invited seminar at an international workshop, titularity of 1 PCT patent (PCT/IT2017/000120 "Locally engineered PEM cells components with optimized operation for improved durability", priority date 19/6/2017, owned by Politecnico di Milano).

Bibliometric data (*Scopus, Nov 2021*)**:** Total number of citations: *>130*, H-index: *8*

Relevant contributions (ORCiD: orcid.org/0000-0002-2734-8432):

1. *Optimizing lithium-ion battery P2D model calibration through sensitivity analysis of physical parameters*, G. Sordi*, C. Rabissi, A. Innocenti, A. Casalegno, ModVal17 conference (2021)

2. *A Comprehensive Physical-Based Sensitivity Analysis of the Electrochemical Impedance Response of Lithium-Ion Batteries*, C. Rabissi, A. Innocenti*, G. Sordi, A. Casalegno, Energy Technology 9 (2021)

3. *A locally resolved investigation on direct methanol fuel cell uneven components fading: Local cathode catalyst layer tuning for homogeneous operation and reduced degradation rate*, C. Rabissi*, M. Zago, P. Gazdzicki, L. Guétaz, S. Escribano, L. Grahl-Madsen, A. Casalegno, Journal of Power Sources 404 (2018) 135–148

4. *A locally resolved investigation on direct methanol fuel cell uneven components fading: Steady state and degradation local analysis*, C. Rabissi*, P. Gazdzicki, L. Guétaz, S. Escribano, L. Grahl-Madsen, A. Baricci, A. Casalegno, Journal of Power Sources 397 (2018) 361–373

5. *In operando measurement of localised cathode potential to mitigate DMFC temporary degradation*, C. Rabissi*, E. Brightman, G. Hinds, A. Casalegno, International Journal of Hydrogen Energy 43 (2018) 9797-9802