



ANGELA GONDOLINI

FORLÌ (ITALY), 03/09/1985

CONTACTS

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Via Granarolo, 64 Faenza (RA),
48018, Italy

LANGUAGE SKILLS

Written and spoken English: good

EXPERIENCE ABROAD

Sept 2013- Feb 2014: Visiting researcher at the German Aerospace Centre (DLR), Stuttgart (Germany) on the topic "Metal Supported Solid Oxide Fuel Cell"

PAPERS & CONGRESSES

ORCID: [0000-0003-1750-9690](https://orcid.org/0000-0003-1750-9690)

Author of more than 40 scientific papers. 1 book chapter.

More than 65 international congress works: 14 Oral, 4 Invited Speeches.

TUTORING

Tutoring of 1 bachelor's and 4 master's degree student (Bologna University), 2 second year trainees (Chimie Paris Tech), 3 research fellow.

WORK EXPERIENCE

PERMANENT RESEARCHER, ISSMC-CNR, (FAENZA)

FROM 27TH DEC 2018

Designing and development of devices for energy application, catalysis, and hydrogen economy, scientific responsible of projects, SOFC/SOEC activity and "Hydrogen Economy" research activity.

FIXED-TERM RESEARCHER, ISTECC-CNR (FAENZA)

FROM 20TH APR 2015 TO 26TH DEC 2018

Activity "Development of innovative Solid Oxide Fuel Cell (SOFC) supported on metallic membrane".

RESEARCH FELLOW, ISTECC-CNR (FAENZA)

FROM 15TH OCT 2009 TO 19TH APR 2015

Activity "Development of material and devices for SOFC and energy applications".

EDUCATION AND TRAINING

PHD IN INDUSTRIAL CHEMISTRY, UNIVERSITY OF BOLOGNA

APRIL 2013

Thesis: "Solid oxide cells for high temperature electrolysis applications (SOEC)"

MASTER'S DEGREE IN PRODUCTS, MATERIALS AND PROCESSES FOR INDUSTRIAL CHEMISTRY

JULY 2009

Thesis: "Microwave assisted synthesis of: $Ce_{1-x}Gd_xO_{2-d}$ for energetics", marks 110/110.

WORKING ACTIVITY

Awards

Young Investigator Award 2018, DSCTM-CNR, Prize for the young research activity on Renewable Energy.

2012 - Winner of the competition "Frontier of Research" (young researchers of the European Ceramic Society).

Grants

2024-2029 MSCA-Staff Exchange "Integration of Advanced Experiments, Computation and Data for innovation in Freeze Casting and Advanced Porous Structures – ice-Link" CNR Scientific Resp.

2023-2025 PRIN-MUR "Nanocomposite multi-ionic Ceria Carbonate Electrodes for New reversible Electrolysis" CNR Scientific Resp.

2022-2025 European Union – NextGeneration EU from the Italian Ministry of Environment and Energy Security POR H₂ AdP "Hydrogen research and development" Scientific Responsible: 2 activities lines.

2024-2026 PR FESR 2021-2027 Emilia Romagna "H₂-Synergy - Green hydrogen and syngas from circular economy obtained by high temperature electrolysis in synergy with gasification of biomass and plastic residues" CNR Scientific Resp.

2019 – 2011 System for the Decontamination and Development of Energy from WATER (SOS-WATER), Ministry of Defence Project - PNMR 2019. Role: Scientific coordinator of the ISTECC-energy section.

2012-2013 - Metallic Sponge Integrated Solid Oxide Fuel Cell (SPICE), Call "Frontier of Research" JECS Trust. Role: Principal Investigator.

ANGELA GONDOLINI

RESEARCHER

OTHER RELEVANT INFORMATION

Member of the working group “hydrogen energy vector” of the GreenTech Cluster of Emilia-Romagna (from 2019).

Member of the working group for the establishment of a potential “Value Chain Off-Shore Electric & HYDROGEN - OSEH” Partnership in the field of “Off-shore Electric & Hydrogen Renewables”.

Referee for international peer-reviewed journals on materials chemistry and ceramic processing.

Member of the organizing committee of the International Conference “Ceramics for Energy” for the years 2015 and 2017.

Review Editor di Frontiers in Ceramics – Ceramics Applications (from 2023)

RESPONSABILITY

ISSMC responsible for SPOKE 2 “ECOSYSTEM for sustainable transition in Emilia-Romagna”, Project financed by the European Community as part of the National Recovery and Resilience Plan (PNRR) - Next Generation EU - Mission 4, Component 2, investment 1.4, ECS Id. Code 00000033, CUP B89122000650001. Start date: 1 October 2022. Duration: 36 months.

TECHNICAL AND SCIENTIFIC SKILLS

Design and engineering of ceramic-based devices and systems for energy applications: solid oxide fuel and electrolysis cells (SOFC/SOEC), gas separation membranes (Oxygen, Hydrogen), membrane reactors. Development of porous supports for catalytic application. Synthesis of micro and nano ceramic and metallic powders for energetics and solar conversion.

PROJECTS

PI of 3 research contracts. Key personnel in 4 EU projects, 2 Regional, 13 National Projects, 8 Projects with Industries.

TEACHING & DISSEMINATION

Lecturer for the PhD Course in “Industrial Chemistry” – University of Bologna (2022-2021). Lecturer for the bachelor’s degree Course in “Chemistry and Technologies for the Environment and Materials” (2021-2022/2023-2024). High school lecturer in the frame of the project “Towards the future” with the course on “Nanomaterials for Renewable energy” (2019-2022). Member of the Défense committee of Dr Pedro Javier Lloreda Jurado, University of Sevilla (2022)

SCIENTIFIC PAPERS

The name with * is the corresponding author.

1. S. Casadio, A. Gondolini*, E. Mercadelli*, A. Sanson, “Advances and prospects in manufacturing of ceramic oxygen and hydrogen separation membranes” Renewable and Sustainable Energy Reviews, in press.
2. S. Mantovani, A. Pintus, A. Kovtun, A. Gondolini, S. Casadio, A. Sanson, T. D. Marforio, M. Calvaresi, M. Rancan, L. Armelao, G. Bertuzzi, M. Melucci*, M. Bandini*, “Graphene Oxide-Arginine Composites: Efficient Dual Function Materials for Integrated CO₂ Capture and Conversion”, ChemSusChem 2024, e202301673.
3. S. Casadio, M. C. Diaz Lacharme, Alessandro Donazzi*, Angela Gondolini*, “Role of carbonate amount and synthesis procedure in the conductivity of SDC-Na₂CO₃ composite electrolytes for solid oxide cells applications”, International Journal of Hydrogen Energy 58 (2024) 1324–1331.
4. A. Bartoletti*, A. Sangiorgi*, E. Mercadelli, C. Melandri, A. Gondolini, S. García-González, L. Ortiz-Membrado, M. Morales, E. Jimenez-Pique, A. Sanson, “3D microextrusion of eco-friendly water based cer-cer composite pastes for hydrogen separation”, Open Ceramics 16, (2023), 100504.
5. A. Gondolini, A. Bartoletti, E. Mercadelli*, P. Gramazio, A. Fasolini, F. Basile*, A. Sanson., “Development and hydrogen permeation of freeze-cast ceramic membrane”, Journal of Membrane Science 684, (2023), 121865.

6. A. Bartoletti, A. Sangiorgi*, A. Gondolini, E. Mercadelli*, S. Casadio, S. García-González, M. Morales, E. Jimenez-Pique, A. Sanson, "Dispersant- and solvent-free pastes for UV-assisted micro-extrusion of porous proton conductive membrane supports *Journal of the European Ceramic Society*", *Journal of the European Ceramic Society* 43 [11], (2023), 4844-4853.
7. D. Cademartori, E. Mercadelli, A. Gondolini, A. Maria Asensio, A. Bertei, A. Sanson, M.P. Carpanese, "Fabrication and Electrochemical Modelling of 8YSZ and GDC10 Freeze Tape Cast Scaffolds for Solid Oxide Cells (SOCs)". *Journal of the European Ceramic Society* 43 [12], (2023), 5263-5278.
8. L. Bergamini, N. Sangiorgi*, A. Gondolini, M. Rancan, G. Bottaro, L. Armelao, A. Sanson, "CsPbBr₃/platinum and CsPbBr₃/graphite hybrid photoelectrodes for carbon dioxide conversion to oxalic acid". *Solar Energy* 254 (2023) 231-222.
9. A. Bartoletti, A. Gondolini*, N. Sangiorgi, M. Aramini, M. Ardit, M. Rancan, L. Armelao, S. Kondrat*, A. Sanson, "Identification of structural changes in CaCu₃Ti₄O₁₂ on high energy ball milling and their effect on photocatalytic performance". *Catalysis Science & Technology* 13 (2023) 1041.
10. S. Casadio, A. Gondolini, N. Sangiorgi, A. Candini, A. Sanson*. "Highly transparent Bi₄Ti₃O₁₂ thin-film electrodes for ferroelectric-enhanced photoelectrochemical processes". *Sustainable Energy & Fuels* 7 (2023), 1107.
11. E. Mercadelli, A. Gondolini*, M. Ardit, G. Cruciani, C. Melandri, S. Escolástico, J. M. Serra, A. Sanson, "Chemical and mechanical stability of BCZY-GDC membranes for hydrogen separation" *Separation and Purification Technology* 289, (2022), 12075.
12. A. Gondolini*, E. Mercadelli, S. Casadio, A. Sanson, "Freeze cast support for hydrogen separation membrane" *Journal of the European Ceramic Society* 42, (2022), 1053-1060.
13. A. Gondolini*, N. Sangiorgi, A. Sangiorgi, A. Sanson, "Photoelectrochemical Hydrogen Production by Screen-Printed Copper Oxide Electrodes" *Energies* 14, (2021), 2942.
14. E. Mercadelli, A. Gondolini, D. Montaleone, P. Pinasco, A. Sanson "Innovative strategy for designing proton conducting ceramic tapes and multilayers for energy applications" *Journal of the European Ceramic Society* 41, (2021), 488-496.
15. A. Gondolini*, A. Fasolini, E. Mercadelli, F. Basile, A. Sanson "Freeze cast porous membrane catalyst for hydrogen production via oxy-reforming" *Fuel Processing Technology* 213, (2021), 106658.
16. L. Bergamini, N. Sangiorgi, A. Gondolini, A. Sanson "CsPbBr₃ for photoelectrochemical cells" *Solar Energy* 212, (2020), 62-72.
17. A. Gondolini*, E. Mercadelli, V. Zin, S. Barison, A. Sanson "Easy preparation method of stable copper-based nanoparticle suspensions in lubricant engine oil" *Lubrication Science* 32 [5] (2020) 1–13.
18. E. Mercadelli, A. Gondolini, D. Montaleone, P. Pinasco, S. Escolástico, J. M. Serra, A. Sanson "Production strategies of asymmetric BaCe_{0.65}Zr_{0.20}Y_{0.15}O_{3-δ}-Ce_{0.8}Gd_{0.2}O_{2-δ} membrane for hydrogen separation" *International Journal of Hydrogen Energy* 45 [12] (2020) 7468-7478.
19. D. Montaleone, E. Mercadelli, A. Gondolini, M. Ardit, P. Pinasco, A. Sanson "Role of the sintering atmosphere in the densification and phase composition of asymmetric BCZY-GDC composite membrane" *Journal of the European Ceramic Society* 39 [1] (2019), 21-29.
20. D. Montaleone, E. Mercadelli, S. Escolástico, A. Gondolini, J.M. Serra, A. Sanson "All-ceramic asymmetric membranes with superior hydrogen permeation" *Journal of Material Chemistry A* 6 (2018) 15718-15727.

21. P. Hoang Hoa, W. de Nolf, F. Ospitali, A. Gondolini, G. Fornasari, E. Scavetta, D. Tonelli, A. Vaccari, P. Benito "Coprecipitated-like hydrotalcite-derived coatings on open-cell metallic foams by electrodeposition: Rh nanoparticles on oxide layers stable under harsh reaction conditions" *Applied Catalysis A: General* 560 (2018) 12-20.
22. A. Gondolini*, E. Mercadelli, G. Constantin, L. Dessemond, V. Yurkiv, R. Costa, A. Sanson "On the manufacturing of low temperature activated $\text{Sr}_{0.9}\text{La}_{0.1}\text{TiO}_{3-\delta}\text{-Ce}_{1-x}\text{Gd}_x\text{O}_{2-\delta}$ anodes for solid oxide fuel cell" *Journal of the European Ceramic Society* 38 [1] (2018) 153-161.
23. D. Montaleone, E. Mercadelli, A. Gondolini, P. Pinasco, A. Sanson "On the compatibility of dual phase $\text{BaCe}_{0.65}\text{Zr}_{0.2}\text{Y}_{0.15}\text{O}_{3-\delta}$ -based membrane for hydrogen separation application" *Ceramics International* 43 [13] (2017) 10151-10157.
24. E. Mercadelli, D. Montaleone, A. Gondolini, P. Pinasco, A. Sanson "Tape-cast asymmetric membranes for hydrogen separation" *Ceramics International* 43 [11] (2017) 8010-8017.
25. E. Mercadelli, A.S. Aricò, A. Gondolini, S. Siracusano, M. Ferraro, V. Antonucci, A. Sanson "Influence of powders thermal activation process on the production of planar β -alumina ceramic membranes" *Journal of Alloys and Compounds* 696 1080-1089, 2017.
26. A. Gondolini*, E. Mercadelli, A. Sangiorgi, A. Sanson "Integration of Ni-GDC layer on a NiCrAl metal foam for SOFC application" *Journal of the European Ceramic Society* 37 1023-1030, 2017. ISSN 0955-2219.
27. E. Mercadelli, A. Gondolini, P. Pinasco, A. Sanson "Stainless Steel Porous Substrates Produced by Tape Casting" *Metals and Materials International* 23 184-192, 2017.
28. A. Lanzini, C. Guerra, P. Leone, M. Santarelli, F. Smeacetto, S. Fiorilli, A. Gondolini, E. Mercadelli, A. Sanson, N.P. Brandon "Influence of the microstructure on the catalytic properties of SOFC anodes under dry reforming of methane" *Materials Letters* 164 (2016) 312-315.
29. M.P. Carpanese, A. Giuliano, M. Panizza, E. Mercadelli, A. Sanson, A. Gondolini, A. Bertei, A. Barbucci "Experimental approach for the study of SOFC cathodes" *Bulgarian Chemical Communications*, 48, Special Issue B, (2016) 23-29.
30. A. Gondolini*, E. Mercadelli, A. Sanson "Single step anode-supported Solid Oxide Electrolyzer Cell", *Journal of the European Ceramic Society* 35 [16] (2015) 4617-4621.
31. V. Yurkiv, G. Constantin, A. Hornes, A. Gondolini, E. Mercadelli, A. Sanson, L. Dessemond, R. Costa "Towards Understanding Surface Chemistry and Electrochemistry of $\text{La}_{0.1}\text{Sr}_{0.9}\text{TiO}_{3-\alpha}$ based Solid Oxide Fuel Cell Anodes" *Journal of Power Sources* 287 (2015) 58-67.
32. A. Gondolini*, E. Mercadelli, S. Albonetti, A. Sanson "Role of Different Solvents on the Purification of As-Synthesized Nano- $\text{Ce}_{1-x}\text{Gd}_x\text{O}_{2-d}$ Powders" *Journal of Nanoscience and Nanotechnology*, 15[5] (2015) 3636-3640(5).
33. V. Zin, F. Agresti, S. Barison, L. Colla, A. Gondolini, M. Fabrizio "The Synthesis and Effect of Copper Nanoparticles on the Tribological Properties of Lubricant Oils" *IEEE Transactions on Nanotechnology* 12 [5] (2013) 751-759.
34. A. Gondolini*, E. Mercadelli, A. Sanson, S. Albonetti, L. Doubova, S. Boldrini, "Effect of the microwave heating on the properties of gadolinium-doped cerium oxide prepared by polyol method" *Journal of the European Ceramic Society* 33 (2013) 67-77.
35. A. Gondolini*, E. Mercadelli, C. Zanelli, C. Melandri, A. Sanson "Alternative production route for supporting $\text{La}_{0.8}\text{Sr}_{0.2}\text{MnO}_{3-\delta}\text{-Ce}_{0.8}\text{Gd}_{0.2}\text{O}_{2-\delta}$ (LSM-GDC)" *International Journal of Hydrogen Energy* 37 [10] (2012) 8572-8581.
36. A. Gondolini*, E. Mercadelli, A. Sanson, S. Albonetti, L. Doubova, S. Boldrini "Microwave-assisted synthesis of gadolinia-doped ceria powders for solid oxide fuel cells", *Ceramics International* 37 (2011) 1423-1426. ISSN 0272-8842.