

Filippo Agresti – Curriculum Vitae

Born in 1980, Filippo Agresti obtained his Ph.D. in 2010 in Materials Science and Engineering at the University of Padova (Italy). During his Ph.D. he got experience on synthesis, structural and functional characterization of nano-crystalline materials and mechano-chemical synthesis of alloys and compounds containing metal elements, especially for hydrogen storage applications. He also got experience on the kinetics and thermodynamics of solid-gas reactions and equilibria.

He has been a postdoctoral research fellow at the Institute of Energetics and Interphases (IENI-CNR), now merged in the Institute of Condensed Matter Chemistry and of Technologies for Energy – National Research Council of Italy (ICMATE-CNR at Padova). He has been involved in a research program on nanofluids and colloidal systems for applications in the field of energy, and more specifically in the fields of heat transfer, heat storage, lubrication and volumetric solar absorption.

Since 2011, he is a permanent research scientist at ICMATE. So far, his research has been focused on the preparation and characterisation of nanomaterials and colloids based on several kinds of nanostructures like metals, oxides, carbon nanostructures for applications in the field of energy. His activity on materials characterization includes X-ray diffraction techniques.

Up to date he authored and co-authored about 70 papers published on ISI journals on the fields of materials science and energy, with an h-index of 25 (Scopus, 2023). Some selected publications are listed hereafter.

Selected publications

- [1] F. Agresti, D. Cabaleiro, L. Fedele, S. Rossi, S. Barison, PMMA nano-encapsulated phase change material colloids for heat management applications, *J. Mol. Liq.* 377 (2023) 121576. <https://doi.org/10.1016/J.MOLLIQ.2023.121576>.
- [2] S. Fasolin, S. Barison, F. Agresti, S. Battiston, S. Fiameni, J. Isopi, L. Armelao, New Sustainable Multilayered Membranes Based on ZrVTi for Hydrogen Purification, *Membr.* 2022, Vol. 12, Page 722. 12 (2022) 722. <https://doi.org/10.3390/MEMBRANES12070722>.
- [3] D. Cabaleiro, F. Agresti, L. Fedele, S. Barison, C. Hermida-Merino, S. Losada-Barreiro, S. Bobbo, M.M. Piñeiro, Review on phase change material emulsions for advanced thermal management: Design, characterization and thermal performance, *Renew. Sustain. Energy Rev.* 159 (2022) 112238. <https://doi.org/10.1016/J.RSER.2022.112238>.
- [4] S. Barison, D. Cabaleiro, S. Rossi, A. Kovtun, M. Melucci, F. Agresti, Paraffin–graphene oxide hybrid nano emulsions for thermal management systems, *Colloids Surfaces A Physicochem. Eng. Asp.* 627 (2021) 127132. <https://doi.org/10.1016/J.COLSURFA.2021.127132>.
- [5] S. Burylov, D. Petrov, V. Lacková, K. Zakutanská, N. Burylova, A. Voroshilov, V. Skosar, F. Agresti, P. Kopčanský, N. Tomašovičová, Ferromagnetic and antiferromagnetic liquid crystal suspensions: Experiment and theory, *J. Mol. Liq.* 321 (2021) 114467. <https://doi.org/10.1016/j.molliq.2020.114467>.
- [6] A. Gimeno-Furio, L. Hernandez, S. Barison, F. Agresti, G. Bottaro, D. Cabaleiro, L. Doretti,

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- [7] A. Gimeno-Furio, L. Hernandez, S. Barison, F. Agresti, D. Cabaleiro, S. Mancin, Optical characterisation of oxidised carbon nanohorn nanofluids for direct solar energy absorption applications, *Sol. Energy*. 191 (2019) 323–331.
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- [8] D. Cabaleiro, F. Agresti, S. Barison, M.A. Marcos, J.I. Prado, S. Rossi, S. Bobbo, L. Fedele, Development of paraffinic phase change material nanoemulsions for thermal energy storage and transport in low-temperature applications, *Appl. Therm. Eng.* 159 (2019) 113868.
<https://doi.org/10.1016/J.APPLTHERMALENG.2019.113868>.
- [9] F. Agresti, L. Fedele, S. Rossi, D. Cabaleiro, S. Bobbo, G. Ischia, S. Barison, Nano-encapsulated PCM emulsions prepared by a solvent-assisted method for solar applications, *Sol. Energy Mater. Sol. Cells*. 194 (2019) 268–275.
<https://doi.org/10.1016/j.solmat.2019.02.021>.
- [10] F. Agresti, S. Barison, A. Famengo, C. Pagura, L. Fedele, S. Rossi, S. Bobbo, M. Rancan, M. Fabrizio, Surface oxidation of single wall carbon nanohorns for the production of surfactant free water-based colloids, *J. Colloid Interface Sci.* 514 (2018) 528–533.
<https://doi.org/10.1016/j.jcis.2017.12.058>.
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- [12] F. Agresti, V. Zin, S. Barison, E. Sani, M. Meucci, L. Mercatelli, L. Nodari, S. Rossi, S. Bobbo, M. Fabrizio, NIR transmittance tuneability under a magnetic field of colloidal suspensions of goethite (α -FeOOH) nanorods, *RSC Adv.* 7 (2017) 12429–12436.
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- [13] F. Agresti, A. Ferrario, S. Boldrini, A. Miozzo, F. Montagner, S. Barison, C. Pagura, M. Fabrizio, Temperature controlled photoacoustic device for thermal diffusivity measurements of liquids and nanofluids, *Thermochim. Acta.* 619 (2015) 48–52.
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- [19] G. Principi, F. Agresti, A. Maddalena, S. Lo Russo, The problem of solid state hydrogen storage, *Energy*. 34 (2009) 2087–2091. <https://doi.org/10.1016/j.energy.2008.08.027>.