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SHORT BIO:

Prof. Alessio CARAVELLA is currently Associate Professor in Chemical Engineering at the Department of Computer Engineering, Modelling, Electronics and Systems Engineering (DIMES) of the University of Calabria (UNICAL, Rende, ITALY) as well as external Associate Researcher at the Institute on Membrane Technology “*Enrico Drioli*”, National Research Council (CNR-ITM, Rende, ITALY). Prof. CARAVELLA have chaired the course of Thermodynamics for seven years (2016-2022), the course of Chemical and Biochemical Reactors for 13 years (2014-2026) and that of Kinetics and Reaction Engineering for 4 years (2023-2026). During his Ph.D. courses, he had been working as a Research Scientist for more than four years at both UNICAL and CNR-ITM. After getting his Ph.D. in 2009, he spent four years conducting his research as a *Post-doctoral Research Scientist* (2009-2011, two years) and *Independent Fellow* (2011-2013, two years) at the National Institute of Advanced Industrial Science and Technology (AIST, Tsukuba, JAPAN). The main research activities of Prof. CARAVELLA deals with:

1. Membrane technology for purification of hydrogen and other light gases;
2. Morphological characterization of hierarchical catalytic structures by CFD techniques;
3. Development of innovative multifunctional chemical reactors for process intensification;
4. Multicomponent adsorption on heterogeneous surfaces;
5. Computational fluid dynamics of supersonic flows from high-pressure gas release.