Workshop: Innovation trends in Solar to X technologies and the EIC pathfinder challenge 2024 on solar to X

Prof Christos N. Markides

Head of Clean Energy Processes Laboratory
Department of Chemical Engineering, Imperial College London; c.markides@imperial.ac.uk

Prof Antonio M Pantaleo

Program Manager for energy systems and cleantech
European Innovation Council, Antonio.pantaleo@ec.europea.eu

July 22nd 2024 – 16.30

Spazio Oplà 1, c/o Politecnico of Bari, Via Orabona 4, Bari

Welcome
Prof. Francesco Cupertino, Rector, Polytechnic University of Bari

Discussion and conclusions
Prof Sergio Camporeale, Polytechnic University of Bari

Abstract

By 2050, solar technologies are projected to deliver the majority of the world's electricity. Although solar energy can be used to provide either heat or electrical power, most solar panels are designed for only one of these purposes. Many breakthroughs solar technologies are addressing the possibility to produce, potentially also in combination to energy, other added value products, such as fresh water, chemicals, hydrogen, energy carriers and other molecules with the combined capture of CO2, with the so called *solar to x* approach. The workshop presents the research trends pursued by the research group of Prof Markides at the Clean Energy processes laboratory and overviews the innovative technologies supported in the field of *solar to x* by Prof Pantaleo, program managers at the European Innovation Council, with focus on the strategies adopted to transform these technologies into products, and on the new pathfinder challenge on this topic launched in the EIC WP 2024.

Biography. Christos Markides is Professor of Clean Energy Technologies, Head of the Clean Energy Processes Laboratory, and leads the Experimental Multiphase Flow Laboratory, which is the largest experimental space of its kind at Imperial College London. He is also, amongst other, Editor-in-Chief of the journal Applied Thermal Engineering, a member of the UK National Heat Transfer Committee, and on the Scientific Board of the UK Energy Storage SUPERGEN Hub. He specialized in applied thermodynamics, fluid flow and heat/mass transfer processes as applied to high-performance devices, technologies and systems for thermal- energy recovery, utilization, conversion or storage. His research interests include heating, cooling and power, and in particular, solar energy and waste heat recovery and conversion in heat-intensive industrial applications. He has published about 300 journal and >350 conference papers on these topics. He won IMechE's 'Donald J. Groen' outstanding paper prize in 2016, IChemE's 'Global Award for Best Research Project' in 2018, the Engineers without Borders 'Chill Challenge' in 2020, and received Imperial College President's Awards for Teaching in 2016 and Research Excellence in 2017.

Biography. Antonio Marco Pantaleo is Associate professor of Energy systems at University of Bari, research fellow at the Department of Chemical engineering, Imperial College London, and program manager for energy systems and cleantech at the European Innovatin Council since sept 2020 and until sept 2024. He specialises in thermoeconomic optimization of technologies and systems for thermal- energy recovery, utilization, conversion or storage. His research interests include heating, cooling and power. He has published about 100 journal papers on these topics.

The webinar will take place on the Teams platform, using the following link: https://teams.microsoft.com/l/meetup-join/19%3ameeting_YWMzMDBjYzMtNmU1Ni00ZDE0LWE1YmYtNDc1OTRiMmMzZDhi%40thread.v2/0?context=%7b%22Tid%22%3a%225b406aab-a1f1-4f13-a7aa-dd573da3d332%22%2c%22Oid%22%3a%2276368107-126d-48f2-aae6-917163b1afe0%22%7d