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ICB PhD public presentations

MULTI-SCALE MODELING AND OPTIMIZATION OF SUSTAINABLE CARBON CAPTURE AND UTILIZATION INTEGRATED TECHNOLOGIES

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ETH Hönggerberg, HCI H 8.1 and on Zoom:
https://ethz.zoom.us/j/68371625955

Project Summary: The Paris Agreement aims to mitigate climate change effectively. This aim triggered the interest of academia, industry, and policymaking to identify actions to satisfy the rising demand for goods and services sustainably. Currently, the chemical sector, a pivotal pillar of our modern world, relies on fossil-based raw materials and consumes a significant share of Earth's finite resources. This, in turn, leads to a copious release of greenhouse gases. In this talk, I will start by motivating the need for green transition strategies in the chemical sector—focusing on carbon capture and utilization, an appealing framework to turn CO2 emissions into chemicals. I will then focus on relevant applications and identify potential bottlenecks using economic and life cycle assessment metrics. I will finally discuss how to identify, via process systems engineering tools, optimal designs of chemical and power networks according to specific criteria.

CV. Iasonas graduated from the University of Patras with a Diploma in Chemical Engineering in 2017. He continued his studies at ETH Zürich with a full scholarship, obtaining an MSc in Process Engineering in 2019. He joined the group of Prof. Guillén-Gosálbez at the Institute of Chemical and Bioengineering at ETH Zürich in 2019 as a PhD student.