



CALL FOR PAPERS
SPECIAL SESSION ON
Decarbonisation of industry through prediction and monitoring tools
for ICCAD 2025
July 1st-3rd, 2025, Barcelona, Spain

Session Co-Chairs:

- Maria DI MASCOLO, G-SCOP, France, Maria.Di-Mascolo@grenoble-inp.fr
- Eric GASCARD, G-SCOP, France, Eric.Gascard@grenoble-inp.fr
- Julien GORNAY, IFPEN, France, julien.gornay@ifpen.fr

Within French National Research (ANR) Program and Equipment for Industry Decarbonisation [PEPR SPLEEN](#)

Session description:

This special session deals with the problem of reducing CO₂ emissions in the industrial sector through prediction and monitoring tools. Industrial CO₂ emissions, driven by energy use and production processes, reached 8.4 Gt globally in 2020. Chemicals, steel, and cement industries contribute to nearly 60% of industrial energy consumption and about 70% of CO₂ emissions in the sector.

The Net Zero roadmap by 2050¹—a roadmap for the global energy sector— set-up by the IEA (International Energy Agency) in 2020, aims to reduce heavy industry emissions by 20% by 2030 and 93% by 2050, recommending efficiency improvements, adoption of advanced technologies, and better material use. Achieving zero-carbon industry by 2050 requires transformative innovations, as incremental changes will not suffice. Therefore, research must focus on breakthrough decarbonization technologies for the future.

The goal of this session is to provide metrics and tools to support decarbonizing industrial processes while minimizing environmental impact, both proactively and in real time. This requires real-time data from sensors that are low-cost, energy-efficient, and tailored for industrial use. Processed with AI, this data will allow diagnostics and optimization to reduce CO₂ emissions by improving energy and material efficiency.

The topics of interest include, but are not limited to:

- Real time monitoring of process emissions and environmental impacts
- Evaluation and prediction of emissions and environmental impacts in industrial systems
- Life Cycle analysis metrics to support industrial decarbonization and reduce environmental impacts

SUBMISSION

Papers must be submitted electronically for peer review by: **January 31th, 2025**

<https://www.iccad-conf.com/submission/>

All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double column format).

¹ [Net Zero by 2050 – Analysis - IEA](#)