FASTER and CAIPIRINH3A at the 5th Symposium on Ammonia Energy and 3rd LATAM Meeting on Green Ammonia and Power-to-X in Santiago, Chile

BRINGING THE AMMONIA RESEARCH COMMUNITY TOGETHER

The 5th Symposium on Ammonia Energy and 3rd LATAM Meeting on Green Ammonia and Power-to-X, held in Santiago, Chile, brought together academic and industrial stakeholders working on ammonia to share research, experience and knowledge, and address the multidisciplinary challenges associated with this molecule.

Representing the **FASTER** and **CAIPIRINH3A** projects, **Dr. Alberto Roldan** (Cardiff University), **Dr. Hilbert Keestra** (University of Twente) and **Prof. Agustin Valera-Medina** (Cardiff University) actively contributed to the event. These projects aim, respectively, to improve ammonia production and minimise emissions associated with its use, supporting the development of more sustainable ammonia technologies.

They played an active role throughout the symposium, delivering scientific presentations and keynote talks, chairing technical sessions, organising several panels, and engaging with key stakeholders in the field.

EXPLORING ADVANCES IN AMMONIA TECHNOLOGIES

The symposium provided a comprehensive overview of the latest developments in **ammonia synthesis, combustion and energy applications, with particular attention to the growing interest in ammonia cracking**, an increasingly prominent topic in both scientific literature and industrial applications.

Discussions highlighted emerging catalytic technologies, including high-entropy materials, alongside strategies to maximise energy harvesting and improve conversion efficiency from ammonia.

The combustion sessions explored a wide range of innovative approaches, including advanced physical processes such as plasma-assisted combustion, liquid injection of ammonia-based blends, and potential aerospace applications. These discussions broadened the scope of the conference and demonstrated the versatility of ammonia as an energy carrier across different technological sectors.

BRIDGING RESEARCH, INNOVATION AND INDUSTRIAL IMPLEMENTATION

A key theme throughout the symposium was the importance of **connecting fundamental research with technological innovation and industrial implementation** to accelerate the energy transition.

The project representatives engaged in valuable discussions with industrial representatives and international research consortia, including the Global Nitrogen Innovation Center for Clean Energy and the Environment (NICCEE). These exchanges helped establish opportunities for future collaborative research and technology development within multidisciplinary frameworks encompassing policy, chemistry, engineering, environmental sciences and fundamental research.

STRENGTHENING INTERNATIONAL COLLABORATIONS

Participation in the International Ammonia Energy Institute meeting further **strengthened international connections** and helped **identify potential avenues** for future joint initiatives in sustainable ammonia technologies.

Overall, the participation of Dr. Alberto Roldan, Dr. Hilbert Keestra and Prof. Agustin Valera-Medina represented a **valuable contribution to the activities and expected outcomes of FASTER and CAIPIRINH3A**, reinforcing their engagement with the international ammonia community and supporting the development of collaborative solutions to the scientific, technological and environmental challenges associated with ammonia as an energy vector.



