

Nitrogen + Syngas 2023

Sagrada Familia,
Barcelona
at night.

CRU Events will host the 2023 Nitrogen + Syngas conference and exhibition at the Hyatt Regency Barcelona Tower in Barcelona, 6-8 March.

CRU has recently announced the agenda for CRU's 36th Nitrogen + Syngas conference and exhibition which will be held as a live, in-person event in Barcelona on 6-8 March 2023. This highly respected annual technical event for the global nitrogen and syngas community provides an important platform for technical professionals from across the nitrogen and syngas industries to connect, do business and learn about the latest developments in operations, technology, process and equipment. The meeting attracts a truly global audience of producers, licensors and materials and equipment providers from around the world, facilitating business networking and peer-to-peer knowledge sharing.

The extensive technical agenda showcases the latest technology, process, materials and equipment developments that are driving operational efficiency, sustainability and reliability for nitrogen and syngas producers. The 2023 agenda will feature three content tracks with a record 63 technical papers and will have a significant focus on energy efficiency, low-emission technologies and sustainability, in particular the role nitrogen and syngas will play in the energy transition.

For the first time, the event will include a dedicated content track on innovations in sustainability and decarbonisation. Additional tracks will continue the conference's long tradition of sharing operational experience and lessons learned from operators working in ammonia, urea and nitrates facilities.

The conference will open with a series of technical showcase presentations, which give short, informative product updates, before moving into the opening keynote session which provides crucial "big-picture" insights into the major market forces shaping the nitrogen and syngas industries. Opening the session is the global nitrogen market outlook from CRU's Principal Nitrogen Analyst, Shruti Kashyap, which will provide essential context on supply, demand and pricing.

Attention will then turn to accelerating role of ammonia in the energy transition, starting with an overview of costs associated with the production of low emission ammonia, from CRU's Alex Amin; which will be followed by OCI's views as a producer on investing on low-emission ammonia capacity. Financing green projects will also be covered, as well as a presentation from Lloyd's Register Decarbonisation Hub on the opportunities and considerations for the use of ammonia as a marine fuel.

On the following two days the technical programme is split into three tracks. For more information about the event visit www.nitrogensyngas.com

TRACK 1

TUESDAY 7 MARCH

- Electrified steam methane reforming by eREACT™: Emissions-free syngas manufacturing *Topsoe A/S*
- Reducing CO₂ footprint and increasing ammonia production via injection of green hydrogen into existing ammonia plants *thyssenkrupp Industrial Solutions AG*
- Recuperative reforming – A key element for blue syngas production *Technip Energies, Clariant and Casale*
- Blue hydrogen production: Achieving minimum carbon footprint and minimum operating cost, comparing SMR and ATR *KT – Kinetics Technology SpA*
- Low carbon hydrogen: A climate silver bullet *BASF*
- How optimal integration of SOEC electrolysis and Topsoe ammonia technology can significantly impact plant economics *Topsoe A/S*
- The best of low carbon hydrogen technologies for ammonia *Air Liquide Engineering & Construction*
- Barents blue ammonia project: A landmark towards sustainability *Saipem*
- Blue ammonia for lower CO₂ emissions *thyssenkrupp Industrial Solutions AG*
- Blue NH₃ with HISORP CC: An adsorptive CO₂ removal process *Linde*
- KBR's blue ammonia technology: Mega-scale with proven technology *KBR Technology*
- Tangible solutions to face the challenge and implement a sustainable transition: Casale technologies for emission reduction in existing plants and newbuilds *Casale SA*

WEDNESDAY 8 MARCH

- TrueBlue Methanol™ – A low carbon emission methanol production process *BD Energy Systems LLC*
- KBR ammonia cracking technology: A roadmap from renewable energy source to green hydrogen supply where it is needed the most *KBR*
- Contribution to materialize economical clean fuel ammonia value chain *Toyo Engineering Corporation and JGC Holdings Corporation*
- Turbomachinery technologies for decarbonisation: Ammonia/hydrogen burning gas turbines *Baker Hughes*
- Duplex stainless steel for use in alkaline electrolyzers with demand on extreme service life – green hydrogen *Alleima*
- Improving sustainability of steam reformers *Schmidt + Clemens Group*
- Syngas processing in waste-to-renewable energy technology with reduction of CO₂ footprint *Siemens Process Systems Engineering Ltd.*
- Eurome® G5 new generation: The green and energy saving melamine technology *Eurotecnica Contractors and Engineers*
- Innovative technology to recover nitrogen and produce a climate friendly fertilizer *EasyMining Services Sweden*

TRACK 2

TUESDAY 7 MARCH

- Toyo's new urea process "ACES21-LP" provides great benefits to urea plant owners in cost and energy savings
Toyo Engineering Corporation
- Application of technology features in a large-scale urea granulation plant
thyssenkrupp Fertilizer Technology GmbH
- Latest developments and projects in fluidized bed granulation
Green Granulation Ltd/Casale
- Upgrading salty by-product of acidic scrubber
Stamicarbon
- Superior mechanical reliability of urea plants through post-EPC assistance
Toyo Engineering Corp.
- A blocked leak detection system: What to do?
UreaKnowHow.com
- Use of Safurex® thin foils for pressure, level and flow transmitters
Stamicarbon
- Improving the performance of the HP synthesis and wastewater treatment sections of IFFCO Kalol
IFFCO Kalol
- Optimizing explosive mixture in a vintage urea plant to enhance production capacity and energy efficiency for sustainable operation
Engro Fertilizers Limited
- Lessons learned from replacing a HP stripper and HP scrubber during turnaround
Abu Qir
- Carbamate solution carryover during urea plant start-up
Petrokimia Gresik
- Sustainable urea plant operation during stripper ferrules (liquid dividers) unavailability and in-house repair of stripper ferrules
Fatima Fertilizer Company Limited

WEDNESDAY 8 MARCH

- Optimized FTC flex gauze packs for catalysis of ammonia oxidation
Heraeus Deutschland GmbH & Co. KG
- Optimization of ammonia oxidation by CFD modelling and experiments. Role of mass transfer on product selectivity
Umicore
- Start me up – improved activation can improve gauze performance
Johnson Matthey
- Latest Improvements in the Uhde EnviNOx® Process for N₂O abatement
thyssenkrupp Industrial Solutions
- Emission monitoring & reporting from nitric acid production – A moving target
SICK AG
- Effective reduction of nitrogen oxide and ammonia emissions by utilizing environmentally compliant technologies
Mitsubishi Heavy Industries Engineering, Ltd and Navoiyazot JSC
- Stami nitric acid
Stamicarbon
- Safety of nitric acid and ammonium nitrate plants
KBR
- Predicting precious metal recoveries from nitric acid plant cleaning
PGM Technologies

TRACK 3

TUESDAY 7 MARCH

- First commercial references of the new award-winning ammonia synthesis catalyst AmoMax-Casale®
Casale and Clariant
- Case study: Decreasing energy consumption during turn-around
PT Pupuk Kalimantan Timur
- Syngas plant feedstock conversion – Utilising alternatives to natural gas
Johnson Matthey
- LTS catalyst ShiftMax217® has generated significant monetary benefits through increased energy efficiency
Clariant
- Process integration & optimization of HyCO plant with H₂ purification & CO₂ reforming
Sahara International Petrochemical Company (Sipchem)
- Seeing inside the box: REFORM CMS innovation in reforming monitoring and optimisation
Johnson Matthey and OnPoint Digital Solutions, LLC
- MegaZonE™ – First commercial reference of novel methanol synthesis technology
Clariant
- Creep life assessment of non-standard materials: Reformer tubes and outlet manifolds
Quest Integrity
- Pressure equipment failures on ammonia and nitric acid plants from stress relaxation cracking
Becht
- Understanding amine activated hot-pot systems
Optimized Gas Treating
- Fatima Fertilizer's Plant Site – A Guinness world record holder site in safety
Fatima Fertilizer Company Limited
- How Enhanced Reality technology speeds up the onboarding of operators and reduces plant downtime related to operational errors
Voovio Technologies SL

WEDNESDAY 8 MARCH

- Benfield system revamp experience at Yara plant
Kinetics Process Improvements Inc (KPI) and Yara Belle Plaines Inc
- Lessons learned from restarting a mothballed ammonia plant
Matix Fertilizers
- Process and efficiency improvement through ammonia front end pressure drop reduction
Engro
- Experience with repair and replacement of the second ammonia converter (R-0502) in the ammonia plant-1A of Pupuk Kaltim Fertilizer
Pupuk Kaltim
- Case study: Ammonia converter troubleshooting
Misr fertilizers production Co. (MOPCO)
- The subsequent effect of leakage found in ammonia converter effluent on ammonia, urea, and utility plant
Petrokimia Gresik and Pupuk Indonesia Holding Company
- Boosting reliability of ammonia plants by switching outdated 101CA/B and 102C boilers with a proven and reliable design
SCHMIDTSCHKE SCHACK | ARVOS and Casale
- Application of CFD for optimization of waste heat boilers
Steinmüller Engineering GmbH
- Reducing fired heater CO₂ emissions and fuel consumption
Tube Tech