

Nitrogen + Syngas 2022 Conference & Exhibition

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Berlin cathedral.

As the world learns to live with Covid, industry professionals will once again have the opportunity to meet face-to-face, to network and to discover the latest technical developments driving sustainability, efficiency and operational improvements across the nitrogen and syngas industries.

With over 50 technical papers and a large exhibition, the conference offers an unparalleled opportunity for professional development and networking.

This year, CRU is making it even easier for delegates to make targeted connections with its new professional matchmaking and networking system: Grip.

Grip is a web- and app-based event platform that uses AI-powered technology to make personalised recommendations and to connect users with peers and experts with shared interests or required skills and solutions. The platform can be fully customised allowing delegates to chat with one another, view exhibitor profiles, schedule meetings and build a personalised agenda of conference sessions and meetings. The platform can also be used to access live streamed and on-demand content whether attending in person or virtually.

The 2022 conference agenda starts with technical showcase presentations – a series of shorter technical presentations on a variety of subjects. Key market updates are next on the agenda with CRU's global outlook for nitrogen and gas, presented by Shruti Kashyap, and an update from the Ammonia Energy Association, presented by Kevin Rouwenhorst. The main technical programme follows with parallel sessions on days 2 and 3 of the conference. ■

The CRU Nitrogen + Syngas Conference returns to Berlin for a live event from 28-30 March 2022. The conference will be run as a hybrid event giving participants the option to attend live in-person or online via the virtual platform.

2022 Nitrogen + Syngas Technical Programme

Latest developments in green ammonia production

- Production and conversion of green ammonia for current and future applications (Yawar Abbas Naqvi, Topsoe A/S)
- Casale flexible green ammonia plant, the economically viable green production (Giovanni Genova, CASALE SA)
- Green ammonia technology: Case studies and global developments (Akhil Nahar, KBR)
- Stami green ammonia to play a key role in decarbonising the fertilizer industry (Deepak Shetty, Stamicarbon)

Decarbonisation options for existing assets

- Decarbonising ammonia production (Klemens Wawrzinek, Linde GmbH)
- Green ammonia by Haldor Topsoe hybrid revamp of existing ammonia plants (Ameet Kakoti, Topsoe A/S)
- Decarbonisation options for syngas plants using green and blue hydrogen through benchmarking (Dan Barnett, BD Energy Systems)
- Economics of decarbonisation options in ammonia plants (Vinod Arora, Kinetics Process Improvements)

Low carbon and blue ammonia

- Making and breaking ammonia: Ammonia and its place in the low carbon economy (Julie Ashcroft, Johnson Matthey)
- Shaping the future of ammonia (Massimiliano Sala, Saipem)

Advances in the sustainable and efficient production of methanol

- IMC's energy efficiency enhancement project exceeding the target (Muhammad Adnan Tariq, Sahara International Petrochemicals)
- Advanced Methanol Amsterdam (AMA): robust technologies which become a successful path to a green methanol plant (Dennis Chafiã, G.I. Dynamics and Isabella Muscionico, Casale)
- How nanoscale discoveries can result in mega scale benefits for methanol producers (Jens Sehested, Topsøe AS)

Energy efficiency enhancements for ammonia plants

- Transition technology toward carbon footprint reduction and energy intensification of steam methane reformer in ammonia production (Olivier Bresseur, BD Energy Systems, LLC and Nenad Zecevic, PETROKEMIJA)
- Replacing vertical ammonia converters with optimised energy efficiency, increased capacity, safe and reliable ones (Mahesh Gandhi, KBR)

Improving the sustainability and efficiency of urea production

- Casale LEM™ improved process: Know-how and technology, the best mix to maximise environmental sustainability (Simone Gamba; Gabriele Di Carlo, CASALE SA)
- Toyo's latest innovations in urea synthesis technologies and sustainable urea production (Takahiro Yanagawa, Toyo Engineering Corporation)
- The efficiency of methylene urea (Massimo Gori; Svetoslav Valkov, Desmet Ballestra)

Optimising urea operations: Enhancing reliability

- Composite control valve (Paul Jorissen, Stamicarbon)
- Importance of high-quality service and how can this minimise the down time and increase the reliability of fertilizer plant (Filippo Colucci; Richard Jandl, Christof Group SBN)
- New superduplex material for application in high pressure synthesis of urea plant (Alberto Serrafiero, Saipem)
- Engro's 50+ years experience of effectively managing plant turnarounds (Narmeen Habib and Asad Khan, Engro Fertilizers Limited)

Urea plant monitoring solutions

- Leak detection system commissioning (Mohamed Kamal Mohamed Ibrahim and Fawzy Tayel, Abu Qir Fertilizers Company)
- Reliable, accurate continuous dust emission monitoring from urea and ammonium nitrate prilling towers and granulation plants (David Inward, SICK spol. s.r.o.)

Syngas generation/gasification from waste sources

- Production of sustainable aviation fuel (SAF) from woody biomass by Gasification-FT Synthesis Technology – Successful demonstration to fly a commercial flight (Yasuhiko Kojima, Toyo Engineering Corporation)
- Green hydrogen and renewable natural gas from waste in a circular economy: Producing low-cost hydrogen and RNG with a negative CO₂ footprint from minimally prepared waste or biomass (Marc Bacon, OMNI Conversion Technologies)

Catalyst developments

- AmoMax® 10 Plus: From fundamental understanding to industrial application (Rene Eckert, Clariant)
- Getting the most \$ value from your nickel – Improved profitability and reduced emissions from sustainable reforming catalysts (Thomas Ithell, Johnson Matthey)

Digitalisation

- Clariant Service Portal – Next-generation digitalised catalyst support to enhance plant operation (Vaclav Jurcik; Maximilian Aigner, Clariant)
- Choosing and deploying a digital Energy Management Solution (Matthieu Poulain, METRON)
- Intelligent plant monitoring: Avoiding the costs of unplanned shutdowns (Flavio Fabbri and Lisa Krumpholz, Navigance GmbH)

Corrosion resistant materials

- Case study: Using field-sprayed metal alloys to prevent corrosion in syngas production (Vitaly Geraskin, Integrated Global Services)

- VDM® Alloy 699 XA: results after two years field application at metal dusting conditions (Tatiana Hentrich, VDM Metals International GmbH)
- Sandvik's innovative material developments avoid corrosion in nitric acid producing plants (Angela Philipp, Sandvik)

Ammonia operations: Reliability and performance improvements

- Engineering, modelling and layout considerations to obtain best combustion performance when revamping downfired reformers (Rene Becker and Ali Gueniche, Koch Engineered Solutions)
- Design vs maintenance of ammonia converter syngas boilers (Stefano Villa, Alfa Laval Olmi SpA)
- A novel idea to sustain plant operation (Qazi Wasif Ud Din, Engro Fertilizers Limited)
- Ammonia plant reliability assurance by improving process safety and engineering controls (Ali Haider, Fatima Fertilizer Company Limited)
- Exclusive experience of ammonia converter operation with leaked methanator feed/effluent exchanger (Muhammad umar Riaz and Muhammad Hashim, Fatima Fertilizer Company limited)

Emissions reduction from nitric acid plants

- Nitrous oxide emissions reduction from nitric acid manufacturing plants (Iain Hepplewhite, Johnson Matthey)
- Sustainable N₂O abatement technology for nitric acid plants (Partha Pratim Chowdhury, Rit Desai, KBR)
- Krastsvetmet solutions for emission reduction in nitric acid plants at capacity increase (Alexander Dyukov, JSC Krastsvetmet)

Optimising the performance of nitric acid & nitrate fertilizer plants

- Nitric acid plant: revamp case studies for process optimisation, capacity augmentation, and concentration enhancement (Piyush Agnihotri; Rit Desai, KBR)
- Sharing experience on implementing EPC contract for revamp of existing AK-72 nitric acid units: switching to low-temperature selective catalytic exhaust system along with capacity increase (Alexander Vasiliev, GIAP Group)
- Enhanced efficiency in nitrate fertilizer production by AI based soft sensors for real-time quality prediction (Kathrin Rodermond, thyssenkrupp Industrial Solutions)
- Project Green Salpeter: Towards a better understanding of Pt-catalyzed ammonia combustion (Artur Wiser, Umicore AG & Co. and Johannes Dammeier, thyssenkrupp Industrial Solutions AG)
- Make high use of low caloric heat of a nitric acid plant (Johannes Dammeier, thyssenkrupp Industrial Solutions AG)

Leak detection and monitoring

- From early warning to long term monitoring – A solution for detecting dangerous gas emissions of ammonia processing facilities (René Braun, Grandperspective GmbH)
- Return of experience on the efficacy and reliability of fiber optic ammonia leakage detection systems (Roberto Walder, Smartec SA)

Waste gas cleaning

- Challenges in waste gas cleaning of a fertilizer production (Martin Joksch, P&P Industries AG)