




ISSCT Factory Commission Webinar

The International Society of Sugar Cane Technologists (ISSCT) is pleased to invite you to the Factory Commission webinar which will take place on

Tuesday 17 November 2026 from 11 am to 1 pm GMT

Session 1: Processing

The session will be chaired by Juan Gabriel Rodríguez, Chair of ISSCT Processing Section, with the following presentations:

Presenter / Country / Organisation	Presentation Title
Dr Stephanía Imbachi, USA, Audubon Sugar Institute	Innovative Applications of NIR Spectroscopy for Trash Measurement in Sugar Cane
Dr Steve Davis and Dr Kim Booysen, South Africa / SMRI	NIR Applications in Sugar Factories and Perspectives for the Future of South African Sugar Industry

Session 2: Engineering

The session will be chaired by Harjeet Sing Bola, Chair of ISSCT Engineering Section, with the following presentations:

Presenter / Country / Organisation	Presentation Title
Orlando Parra Ruiz, Germany, Piller Blowers	The Role of Mechanical Vapor Recompression (MVR) Technology in Optimizing Energy Consumption in the Sugar Industry
Maria Alejandra Gómez, Colombia / Cenicaña	Managing Sugar cane Quality in a Changing Harvesting and Climate Landscape

The presentations will focus on the emerging opportunities offered by the wide application of technologies for measurements and decision making to address climate variability and changing conditions affecting sugar cane quality.

Format of the webinar:

- Each presentation will last 20 minutes
- 5 minutes will be allocated to questions after each presentation
- After the final presentation, a 20-minute panel discussion will be held with all speakers
- Total duration of the webinar will be up to 2 hours.

The programme, together with a short biodata of the presenters and synopses of the presentations are given below.

The facilitators/organizers are:

- Dr. Gillian Eggleston, Audubon Sugar Institute, USA
- Harjeet Singh Bola, IPROINDIA, India
- Juan Gabriel Rodríguez, Cenicaña, Colombia
- and members from the Factory Commission

Language
The Webinar will be conducted in English.

Registration
The Registration Form for the Webinar may be accessed through the following link:
https://us06web.zoom.us/meeting/register/oGPGPWD7T8ewaTRd0UC3bQ#/registration

The Webinar is open to ISSCT compliant members as well as to non-members.

Compliant Members
Compliant members are those who have already settled their membership dues for the period 2025-2028. For those who have not yet done so, they may settle their dues of USD 150 through the following link:
https://members.issct.org/appform/issct_guatemala_2028.aspx

Non-Members
If a participant wishes to register for ONLY the webinar in Factory, he/she should settle a registration fee of USD 50 through the following link:
https://members.issct.org/webinar/overview.aspx

After having settled either your ISSCT membership dues or only the registration fee for the webinar, an e-mail with the meeting details (Username and Password to access the Webinar), will be sent to you.

Further information
For further information, please contact the ISSCT **Factory Commissioner –** Gillian Eggleston GEggleston@agcenter.lsu.edu or the ISSCT Secretariat at issctsecretariat@gmail.com / issct@intnet.mu

ISSCT Factory Commission Webinar

Programme

Tuesday 17 November 2026
11 am to 1 pm GMT

Chair: Juan Gabriel Rodriguez

Speaker 1: 11 am GMT – 11:20 am GMT

Dr Stephanía Imbachi (Audubon Sugar Institute, Louisiana, USA)

Biodata

Stephania Imbachi-Ordonez is a Research Instructor at Audubon Sugar Institute (Louisiana State University). She received her B.Sc. in Chemical Engineering in 2013 in Colombia and a Ph.D. in Chemical Engineering at Louisiana State University. She has over 12 years of experience in the sugar industry, including 4 years as a researcher at the Colombian Sugarcane Research Center (Cenicaña), 2 years as a process engineer in two Colombian sugar factories, and 6 years as a Research Instructor at Audubon Sugar Institute. In 2024, she received the International Society of Sugar Cane Technologists (ISSCT) Factory Commission Early Career Scientist Award in recognition of her presentations and research contributions.

Innovative Applications of NIR Spectroscopy for Trash Measurement in Sugarcane

NIR spectroscopy calibrations were developed to rapidly quantify extraneous matter components, including leaf material and soil, in shredded sugarcane. The study demonstrated the potential of NIR as a high-throughput alternative to conventional trash analysis methods. Additional modelling approaches, including functional regression, SVR, XGBoost, and ANN, were explored to enhance prediction accuracy, with functional regression showing the most promising results.

Speaker 2: 11:25 am GMT – 11:45 pm GMT

Dr Steve Davis and Dr Kim Booysen (SMRI, South Africa)

Biodata

Steve Davis is the Head: Sugar Technology at the Sugar Milling Research Institute NPC (SMRI) in Durban, South Africa. A professional chemical engineer, he holds an MSc degree in Engineering from the University of Natal and joined SMRI in 1994. He leads the institute's Sugar Technology division, suporting the sugar processing industry in improving the efficiency and recovery through enhanced processing technologies, including Industry 4.0 approaches, while advancing the transsition towards an integrated biorefinery model to enhance sustainability. He has presented numerous papers at the South African Sugar Technologists' Association (SASTA) congresses and ISSCT congresses and workshops. He is a member of the SASTA Council and the ISSCT Processing Section Committee.

Dr Kim Booysen is a Senior Research Officer at the SMRI, with a PhD in Chemistry from the Nelson Mandela Metropolitan University in South Africa. Kim is the SMRI's NIRS champion, and is responsible for foresighting, development and adoption of various NIRS technologies among the SMRI's member factories.

NIR applications in sugar factories and perspectives for the future of South African Sugar Industry

Transmission-based NIRS has long been routinely used in the South and southern Africa sugar cane processing industry in factory and SMRI laboratories, providing rapid and cost-effective analytical results. However, the potential for NIR technology extends well beyond this, and the SMRI is actively investigating

other uses, such as hand-held NIRS devices for assessing cane quality and extent of cane deterioration, reflectance techniques for at-line measurement of raw sugar properties and on-line NIRS instruments for process control. This presentation will describe current and future work in this area being undertaken by the SMRI.

Chair: Harjeet Singh Bola

Speaker 3: 11:50 pm GMT – 12:10 pm GMT

Orlando Parra Ruiz (Pillar Blowers, Germany)

Biodata

With over 15 years of international experience, Orlando Parra Ruiz is a rotating equipment specialist committed to advancing energy-efficient technologies in the process industry. His expertise spans turbomachinery applications in oil and gas, power generation, and industrial processes, with a strong focus on decarbonization and electrification technologies.

Currently leading business development in Piller Blowers and Compressors for heat pump systems based on Mechanical Vapor Recompression (MVR), Orlando focuses on advancing the use of MVR technology in industrial processes. His work centres on energy-intensive sectors such as sugar and ethanol, dairy, food and beverage, and chemicals, where MVR can significantly improve thermal efficiency and reduce dependence on fossil fuels.

Mechanical vapour recompression for decarbonization in cane sugar industry

Energy efficiency and steam optimization are key priorities for the sugar cane industry, as producers seek to reduce steam consumption, improve plant performance, and optimize bagasse utilization. Mechanical Vapor Recompression (MVR) is a proven technology that recovers and recompresses low-pressure vapor, significantly reducing the demand for fresh steam in sugar production and improving the overall energy balance of sugar mills.

This presentation will explore the application of MVR technology in sugar juice evaporation and crystallization, introducing its operating principles, technical characteristics, and key considerations for integration into existing and new sugar mills. Attention will be given to the role of centrifugal blowers and compressors, their operating capabilities, and the opportunities for optimizing steam distribution and utilization across the plant.

Real-world project examples will illustrate how MVR technology can be successfully implemented in sugar production, highlighting different process configurations, integration challenges, achievable energy savings, and operational benefits. The presentation will also discuss how reducing steam demand can lower bagasse consumption, increase the availability of surplus bagasse for alternative uses, and potentially free up steam for additional electricity generation.

The webinar aims to provide sugar producers, plant operators, and engineering professionals with practical insights into how MVR technology can improve plant steam efficiency, reduce energy costs, and enhance the competitiveness of sugar production.

Speaker 4: 12:15 GMT – 12:35 pm GMT

María Alejandra Gómez (Cenicaña, Colombia)

Biodata

María Alejandra Gómez holds a degree in Industrial Chemistry from the Technological University of Pereira in Colombia and a master's degree in engineering from Tecnológico de Monterrey. She is a Principal Researcher in Sugarcane Quality and coordinates the laboratory for the Factory Processes Program at

Cenicaña. She has more than 16 years of professional experience in quality and process improvement, including six years in Colombia's sugar industry.

She has led efforts to standardize methods for assessing raw material quality, characterize the physicochemical properties of sugarcane varieties, and improve laboratory analytical processes, including through the use of near-infrared (NIR) technology. She has also supported sugar mills in exploring NIR technologies for process monitoring. Her work has made her a technical reference for affiliated sugar mills in comprehensive quality management, from the field through processing.

Managing Sugarcane Quality in a Changing Harvesting and Climate Landscape

Over the past 12 years, Colombia's sugar industry has undergone a marked transition toward mechanized harvesting, with the share of mechanized harvesting increasing from 25% to 85%. This structural shift is compounded by growing climate variability, including changes in precipitation and temperature patterns, which directly affect the quality of the sugarcane delivered to the mills. In this context, access to timely measurements is critical to taking action to guarantee manufacturing process performance.

This presentation will outline the strategy developed to evaluate changes in sugarcane quality parameters, the joint coordination mechanisms established, and the specific initiatives implemented across field and mill operations. It will emphasize that, when it comes to sugarcane quality, a rigid solution is not enough; instead, a framework is needed that combines operational flexibility with analytical robustness.