

10 OCTOBER 2024

| Auditorium 1 | | | Meeting Room 1.6 | | | Meeting Room 1.4 | | |
|--------------|---------------------------|---|------------------|--|--|------------------|---|--|
| Time | Begin | End | Time | Begin | End | Time | Begin | End |
| | 07:30 | 08:30 | | 07:30 | 08:30 | | 07:30 | 08:30 |
| | Tea (Foyer Auditorium 1) | | | Tea (Foyer Auditorium 1) | | | Tea (Foyer Auditorium 1) | |
| | Session 29: Energy | | | Session 30: Process Engineering and Fundamentals | | | Session 31: Environmental Engineering | |
| 08:30 | 08:50 | Talk 29.1 Commercial-scale trial feeding waste activated sludge to a Sasol fixed bed dry bottom gasifier (Andrei Koekemoer) | 08:30 | 09:10 | Talk 30.1 Invited Talk | 08:30 | 09:10 | Keynote 31.1 Advances in Ion Exchange to Mitigate Climate (Ed Hardwick) Invited Keynote Environmental |
| 08:50 | 09:10 | Talk 29.2 Beneficiation of Coal Preparation Plant Tailings by Froth Flotation (Puja Hansdah, Herman Potgieter) | 09:10 | 09:30 | Talk 30.2 On Bubble Deformation and Breakup in Liquids Containing Surface Active Agents (Maria Zednikova, Tereza Semlerova, Sandra Orvalho, Jaromir Havlicka, Jaroslav Tihon) | 09:10 | 09:30 | Talk 31.2 A novel approach to model the environmental impact of wastewater treatment processes: a case study of hydrometallurgical recycling of lithium-ion batteries (Roelof Maritz, Guven Akdogan, Christie Dorfling) |
| 09:10 | 09:30 | Talk 29.3 The effect of UV/H ₂ O ₂ pre-treatment on the solubilization of bituminous coal fines waste for the biogenic production of methane gas (Ntombifuthi Hlatshwayo, Peter O Osifo, Tumisang Seodigeng) | 09:30 | 09:50 | Talk 30.3 The Potential of Unconventional Statistical Methods in Chemical Engineering (Cla Botha, Frikkie Conradie, Frikkie Van der Merwe) | 09:30 | 09:50 | Talk 31.3 Effects of nano- and micro-chemicals used in sanitisers and disinfectants in the South African market on the freshwater snail, Physa acuta (Lenah Motaung, Ndeke Musee, Michael Daramola) |
| 09:30 | 09:50 | Talk 29.4 An investigation into the Flocculation and Settling Behaviour of Coal Preparation Plant Tailings (Puja Hansdah, Herman Potgieter) | 09:50 | 10:10 | Talk 30.4 Advancing the Understanding of Wet Ball Mill Loads: A Comprehensive Numerical Simulation Framework (Fortune Nkomo, Francois Mulenga) | 09:50 | 10:10 | Talk 31.4 A comparison of economic feasibility and environmental performance of biochemicals, biofuels, biomaterials and food-products as diversification options for the sugar industry (Jeanne Louw, Janus Louw, Johann Gorgens) |
| 09:50 | 10:10 | Talk 29.5 Combustion of mixed waste fuel (Milan Carsky, Olga Solcova, Karel Soukup, Stanislav Honus, Marek Jadlovec, David Lokhat) | 10:10 | 10:15 | Tea (Foyer Auditorium 1) | 10:10 | 10:15 | Tea (Foyer Auditorium 1) |
| 10:10 | 10:15 | Tea (Foyer Auditorium 1) | 10:15 | 10:45 | Tea (Foyer Auditorium 1) | 10:15 | 10:45 | Tea (Foyer Auditorium 1) |
| 10:15 | 10:45 | Session 32: Water | 10:15 | 10:45 | Session 33: Chemical & Biochemical Production | 10:15 | 10:45 | Session 34: Operational Excellence & Control |
| 10:45 | 11:10 | Keynote 32.1 Assessing the water impact of carbon capture technologies (Prebantha Moodley, Kevin Harding, Thomas Alan Adams II) | 10:45 | 11:10 | Keynote 33.1 Biorefineries for the production of biochemicals, biofuels, biomaterials and food-products as viable diversification options for the sugar cane industry (Johann Gorgens, Jeanne Louw, Johannes Louw, Amir Behrouzifar) | 10:45 | 11:10 | Keynote 34.1 TBA |
| 11:10 | 11:30 | Talk 32.2 Developing a theoretical predictive fouling model for a Polyethersulfone (PES) Ultrafiltration membrane for wastewater treatment. (Emmanuel Kasese, Kevin Harding, Keneiloe Sikhivhilu, Diane Hildebrandt) | 11:10 | 11:30 | Talk 33.2 The efficient microbial production of cellobiose lipids (CBLs) as novel antifungal agents (Andre Valkenburg, Robert Pott, Eugene van Rensburg, George Teke) | 11:10 | 11:30 | Talk 34.2 TBA |
| 11:30 | 11:50 | Talk 32.3 Anticipating Environmental Risks: Harnessing Predictive Water Balances for Sustainable Power Generation at Kusile Power Station (Amelia Meyer, Hendrik Brink) | 11:30 | 11:50 | Talk 33.3 The Effect of Reaction Temperature, catalyst Concentration and Alcohol ratio in the Production of Biodiesel from Raw and Purified Castor oil (Sandile Brendon Masango, Peterson Thokozani Ngema, Olusegun Ayodeji Olangunju, Suresh Ramsuroop) | 11:30 | 11:50 | Talk 34.3 TBA |
| 11:50 | 12:10 | Talk 32.4 TBA | 11:50 | 12:10 | Talk 33.4 Eggshell-Derived Catalysts for Enhancing Biodiesel Synthesis from Waste Cooking Oil (Lebohang Machetti, Linda Jewell) | 11:50 | 12:10 | Talk 34.4 TBA |
| 12:15 | 13:30 | Lunch (Collection - Foyer Auditorium 1) | 12:15 | 13:30 | Lunch (Collection - Foyer Auditorium 1) | 12:15 | 13:30 | Lunch (Collection - Foyer Auditorium 1) |
| | Session 35: Energy | | | Session 36: Chemical & Biochemical Production | | | Session 37: Other Topics for Sustainability and Beyond | |
| 13:30 | 14:10 | Keynote 35.1 TBA | 13:30 | 13:50 | Talk 36.1 Process Development for Ethanol Production from Cellulose-Rich Furfural Residues Annexed to a Typical South African Sugar Mill (Godrick Bunga, Johann Gorgens, Eugene van Rensburg) | 13:30 | 14:10 | Keynote 37.1 TBA |
| 14:10 | 14:30 | Talk 35.2 In-situ Biogas Upgrading for Lignocellulosic Biomass (Vetiver Grass): Attainable Region Theory (Charmain Thoko Maghiza, Mmabiyiswa Rebecca Sebola, Baraka Celestine Sempunga) | 13:50 | 14:10 | Talk 36.2 The Culturability of Five South African Vaginal Probiotic Lactobacilli in a Low-Cost, Plant-Based Soytone Growth Medium (Obakeng Jona, Marijke Fagan-Endres, Anna-Ursula Happel, Brian Kullin, Jo-Ann Passmore, Sue Harrison) | 14:10 | 14:30 | Talk 37.2 Novel application of biochar to improve hydrophilicity and the permeability of aramid nanofiber hybrid membrane (Klenga Sumbu Eloge, David Lokhat) |
| 14:30 | 14:50 | Talk 35.3 Study of the thermodynamic behaviour of integrated carbon capture and utilization (CCU) process using CAO-based dual functional material (DFM) (Nkosilamanda Moyo, Yao Yali, Baraka Celestine) | 14:10 | 14:30 | Talk 36.3 Environmental and Economic Benefits from Strain and Bioprocess Improvements for Sustainable Production of 3-Hydroxypropanoic in a Sugarcane Biorefinery (Manasseh Sikazwe, Johannes Malherbe, Jeanne Louw, Johann Gorgens) | 14:30 | 14:50 | Talk 37.3 Effect of ethanol as a solvent for surfactants in cassiterite ore flotation (Moekeetsi Khomo, Henry Simonsen, Lizelle Van Dyk, Herman Potgieter) |
| 14:50 | 15:10 | Talk 35.4 TBA | 14:30 | 14:50 | Talk 36.4 Sustainable acrylic acid and propylene glycol production in a sugarcane biorefinery: A Techno-economic and environmental analysis (Mensah Brobbey, Jeanne Louw, Johann Gorgens) | 14:50 | 15:10 | Talk 37.4 A review of Carbon dioxide adsorption and transportation in a South African context (Makhanama Nkhawu, Lucey Mavhungu, Okuranti Agboola) |
| 15:10 | 15:40 | Tea & Poster Session (Foyer Auditorium 1) | 14:50 | 15:10 | Talk 36.5 Effect of corn cob hydrolysate on yield and productivity during fermentation by Lactobacillus cereus (Nhlamulo Sibya, Hendrik Brink, Evans Chiwa, Michael Daramola) | 15:10 | 15:40 | Tea & Poster Session (Foyer Auditorium 1) |
| | Session 38: Water | | | Session 39: Materials and Corrosion | | | Session 40: AI & 4th Industrial Revolution | |
| 15:40 | 16:00 | Talk 38.1 Inclusion of nano-silver compounds in RO membranes as solutions to fouling by microbes and natural organic matter during seawater desalination (Obakeng Nchoe, Nosiho Moloto, Keneiloe Sikhivhilu, Phumani Tetyana) (Water Paper 221) | 15:40 | 16:00 | Talk 39.1 Characterization of corrosion products formed on carbon steel after exposure to a bacterial consortia from a cooling tower (Alicia Pritthiraj, Shepherd Tichapondwa, Evans Chiwa) | 15:40 | 16:20 | Keynote 40.1 Evaluation of the water treatment plant performance using process capability assessment (Esper Jacobeth Ncube, Muzi Simon Sibya, Evans Chiwa) |
| 16:00 | 16:20 | Talk 38.2 Treating Persistent Pollutants, Pesticides, PFAS, with FILTRASORB® Granular Activated Carbon (Julien Terrematte, Alberto Barral) Water (Paper 227 Abstract Submission Invited) | 16:00 | 16:20 | Talk 39.2 Physicochemical properties of cellulose nanocrystals (CNCs) extracted from post-consumer cotton/polyester blended fabrics. (Rivalani Baloyi, Bruce Sithole, Viren Chuniwall) | 16:20 | 16:40 | Talk 40.2 Revolutionizing Engineering Education: A Critical Examination of AI Chatbots for Personalized, Interactive, and Real-time Learning Support (Nomcebo Mthombeni, Fuluhele Nemavhola, Rendani Maladzhi) |
| 16:20 | 16:40 | Talk 38.3 A comparison between powdered activated carbon (PAC) and granular activated carbon (GAC) for water treatment (Wesley Rolfe, Jennifer Falconer, Edmund Hardwick) Water (Paper 228 Abstract Submission Invited) | 16:20 | 16:40 | Talk 39.3 Perspective on Metal-organic Frameworks-based Atmospheric Water Harvesting Systems Towards Universal Adoption (Jianwei Ren, Tonderal Manyimo) | | | |