



ENGINEERING AND SCIENCE SHOWCASE

Friday, 10 June 2022 | 10:00 – 17:30 | Hilton Sandton Hotel



Stellenbosch

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forward together
sonke siya phambili
saam vorentoe

Friday,
10 June 2022

	SESSION 1 The 4th Industrial Revolution	SESSION 2 Technology and the World	SESSION 3 Biological Advances
09:30	Registration	Registration	Registration
10:00	Plenary: Faculty Overviews <i>Deans: Prof Wikus van Niekerk and Prof Louise Warnich</i>	Plenary: Faculty Overviews <i>Deans: Prof Louise Warnich and Prof Wikus van Niekerk</i>	
10:30	Machine Learning and Artificial Intelligence at Stellenbosch University <i>Prof Herman Kamper and Prof Willie Brink</i>	The energy transition and technology landscape; activities of the FIP-WEF@SU <i>Prof Wikus van Niekerk and Ms Karin Kritzinger</i>	100 million individuals with Long COVID, one patent for a diagnostic method <i>Prof Resia Pretorius</i>
10:50	Mitochondrial Analysis - From Deep Learning to Virtual Reality <i>Dr Rensu Theart</i>	Metal production from secondary resources in South Africa <i>Prof Steven Bradshaw and Prof Christie Dorfling</i>	Developing research and manufacturing capabilities for the Pharmaceutical and vaccines industry in Africa <i>Prof Siew Tai</i>
11:10	Quantum Technologies at Stellenbosch University <i>Prof Mark Tame</i>	Sustainable Water and Supply <i>Dr Adele Bosman</i>	Precision Medicine: Diagnostic market for oncology in Africa <i>Prof Anna-Mart Engelbrecht</i>
11:30	Towards the South African Industry 4.0 <i>Dr Karel Kruger</i>	Advantage disruptors: The engineering management premium <i>Prof Calie Pistorius</i>	Phagoflux - monitoring cell health and cell analysis software tools <i>Prof Ben Loos</i>
11:50	Autonomous Vehicles and Robotics Research at Stellenbosch University <i>Dr Japie Engelbrecht</i>	Water treatment technologies and the activities of the FIP-WEF@SU <i>Prof André Burger and Dr Ursula Schließmann</i>	Incorporating microbiome analysis in soil testing; the need for rapid and accurate testing <i>Prof Karin Jacobs</i>
12:10	Photonics solutions: Basic and applied <i>Dr Pieter Neethling</i>	Cape Town as a High-Tech Hub <i>Mr JP van der Merwe</i>	Biomedical Engineering Innovations for Africa <i>Prof Kristiaan Schreve</i>
12:30	Lunch & Exhibition	Lunch & Exhibition	Lunch & Exhibition

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	SESSION 4 IOT and Logistics	SESSION 5 Manufacturing and Materials
13:30	Municipalities and load shedding <i>Mr Christo Nicholls</i>	Navigating the Materials Engineering Tetrahedron at Stellenbosch University <i>Dr Melody Neaves</i>
13:50	Potential of the internet of things to revitalise the South African industry, government and economy <i>Prof Thinus Booysen and Prof Sara Grobbelaar</i>	Build your competitive capabilities in manufacturing through university cooperation – Focus on Metal Casting <i>Prof Nawaz Mahomed</i>
14:10	Smart Agriculture <i>Prof Riaan Wolhuter</i>	Developing high-frequency components for the 5G-world and beyond <i>Prof Petrie Meyer</i>
14:30	Intelligent Transport Systems <i>Mrs Megan Bruwer</i>	
14:50	Coffee/Tea and Exhibition	Coffee/Tea and Exhibition

	SESSION 6 The future of Energy	SESSION 7 Computational Methods
15:30	Future developments in the South African Renewable Energy Landscape <i>Prof Sampson Mamphweli</i>	The Discrete Element Method: a design tool for bulk materials handling <i>Prof Corné Coetzee</i>
15:50	Emerging electrical machine technologies and applications <i>Prof Maarten Kamper</i>	Material Characterization and Numerical Simulation of Complex Materials and Structures <i>Prof Gerhard Venter</i>
16:10	Integrating large amounts of renewable energy into the SA grid <i>Mr Ndamulelo Mararakanye</i>	Data-driven- and scientific-machine learning in thermal-fluids <i>Prof Ryno Laubscher</i>
16:30	Solar PV forecasting for both sides of the spectrum <i>Dr Arnold Rix</i>	The Application of Machine Learning in Cybersecurity and Anomaly Detection Systems <i>Dr Sydney Kasongo</i>
16:50	Thermal energy research at Stellenbosch University <i>Dr Mike Owen</i>	Machine Listening: Helping Africa listen to herself <i>Dr Emmanuel Dufourq</i>
17:10	Closing <i>Prof Wikus van Niekerk and Prof Louise Warnich</i>	
17:30	Cocktail and Alumni Function	Cocktail and Alumni Function

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<http://www.eng.sun.ac.za>

<http://www.sun.ac.za/english/faculty/science>

We hope you enjoy this showcase!