

**The 6th South African Nanoscience and Nanotechnology Summer School
23-25 October 2022**

From Basics to Integrated Systems, Applications and Big Dreams

Day 1: Sunday 23 October 2022

Chairperson: Prof R Lindsay

08:00 - 09:00	Registration	Tea, coffee and snacks
09:00 - 09:20	Welcome and Opening	<i>TO BE CONFIRMED – DSI representative.</i>
09:20 - 09:25	Introduction of Keynote Speaker	Robbie Lindsay
09:25 - 10:05	Keynote Address	Ashley Uys -Founder and CEO of Medical Diagnostech
10:05 - 10:10	Vote of thanks	
10:05 - 10:30	TEA BREAK	

TOPIC: Basics and Introduction

Chairperson: Prof R Lindsay

10:30 - 11:10	Skills which Nano scientists have	Dr Janke Nel
11:10 - 11:50	History of Nanoscience	Prof Thembela Hillie (CSIR)
11:50 - 12:30	Nano in Nature	Prof Dirk Knoesen
12:30 - 13:15	LUNCH	

Chairperson: Prof H Swart

13:15 - 13:45	Quantum theory	Prof Carsten Ullrich (Missouri)
13:45 - 14:25	Modern Physics	Prof Carsten Ullrich (Missouri)
14:25 - 15:05	Functional Nanomaterials from Precursors: A step by step approach to synthesis, characterisation and energy applications	Prof Neerish Revaprasau (Unizulu)
15:05 - 15:20	TEA BREAK	
15:20 - 16:00	How Nano materials are made	Prof Chris Arendse (UWC)
16:00 - 16:40	Wet chemistry synthesis of Nanomaterials	Prof Vernon Somerset (CPUT)
16:40 - 17:20	Safety of nanomaterials: integrated approach	Prof Ndeke Musee (UP)

Day 2: Monday, 24 October 2022**TOPIC: Characterisation of Nano Materials****Chairperson: Prof A Madiehe**

08:30 –09:10	Characterisation through Electron Microscopy	Prof Jacques O’Connel (NMU)
09:10 - 09:50	Structural and surface properties	Prof Hendrik Swart (UFS)
09:50 - 10:30	How nanotechnology and nanoscience can contribute to water harvesting, analysis, treatment, and safe storage	Prof Patrick Ndungu (UP)
10:30 - 11:00	TEA BREAK	
11:00 - 11:40	The role of Physics in nano science	Prof Paul van Loosdrecht (Cologne)
11:40 - 12:20	Toxicity of Nanomaterials	Dr Charlene Andraos (NIOH)
12:20 - 13:00	Manufacturing Covid-19 vaccines	Dr Abdessamad Tahiri-Alaoui (Hutano)
13:00 -14:00	LUNCH	

TOPIC: Entrepreneurship and Nano Companies**Chairperson: Prof R Lindsay**

14:00 - 14:40	Intellectual Property	Ms Monique Heystek (UWC)
14:40 - 15:20	Technology Entrepreneurship	Luan Africa (UWC)
15:20 - 15:50	TEA BREAK	
15:50 – 17:00	Companies presentations followed by questions and discussion.	Dr Abdessamad Tahiri-Alaoui (Hutano – UK) Prof Sabelo Mhlanga (Sabinano) Dr Eugene Smit (Stellenbosch Nanofibers)

Day 3: Tuesday, 25 October 2022

TOPIC: Applications

Chairperson: Prof S Roux

08:30 –09:10	Introduction to Nanoparticles in Health	Prof Admire Dube (UWC)
09:10 - 09:50	New applications/trends in nanoparticles and health	Prof Steven Mufamadi (NMU)
09:50 - 10:30	Nanoparticle research and development within the NIC biolabels node	Prof Mervin Meyer (UWC)
10:30 - 11:00	TEA BREAK	
11:00 - 11:40	Development of nanomaterials for fuel cell applications	Prof Lindiwe Khotseng (UWC)
11:40 - 12:20	Energy - Photo Voltaics	Prof Francois Cummings (UWC)
12:20 - 13:00	Development of unsupported metal oxide catalysts for the OER in PEM water electrolysis	Dr Cecil Felix (UWC)
13:00 -14:00	LUNCH	

Chairperson: Prof C Arendse

14:00-14:40	Nanobiophysics: A new thriving discipline	Prof Tjaart Krüger(UP)
14:40 - 15:20	Beyond silicon – the next generation electronics	Prof Suchi Guha (Missouri)
15:20 - 15:50	TEA BREAK	
15:50 – 16:30	Nano Manufacturing	Dr Manfred Scriba (CSIR)
16:30-17:10	Sensors (Via Zoom or recording)	Prof Priscilla Baker (UWC)
17:10	<p align="center">Panel Discussion on FUTURE DIRECTIONS</p> <p>Some Possible Topics 2D materials (Graphene applications, Mxenes etc) Health – New Tech – Admire Dube and Steven Mufamadi Characterisation – Metrology Government involvement – Suchi Guha – Next Gen commercialisation Paul v Loosdrecht – New ideas</p>	
19:00	EVENING – Cocktail Function	