



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA



South African
**Nanoscience and
Nanotechnology**
Summer School



UNIVERSITY of the
WESTERN CAPE

The 5th South African Nanoscience and Nanotechnology Summer School 25-29 November 2019

From Research to Application, Innovation and Commercialization

Day 1: Monday, 25 November 2019

08:00 - 09:00	Registration	Tea, coffee and snacks
09:00 - 09:05	Welcome	<i>Dean: Natural Science (UWC): Prof M Davies-Coleman</i>
09:05 - 09:15	Introduction of Keynote Speaker	<i>DVC Academic (UWC): Prof V Lawack</i>
09:15 - 09:45	Keynote Address	<i>Honourable Deputy Minister Buti Manamela</i>
09:45 - 10:00	Vote of thanks	<i>TBC</i>
10:00 - 10:30	TEA BREAK	
TOPIC: NANOSCIENCE		
Chairperson: Prof D Knoesen		
10:30 - 11:10	Nanostructured Thin Films for Multibandgap Silicon Tandem and Triple-stacked Solar Cells	Prof R Schropp Extraordinary Professor: Department of Physics and Astronomy (UWC)
11:10 - 11:50	Nanostructured Thin Films for Multibandgap Silicon Tandem and Triple-stacked Solar Cells	
11:50 - 12:30	Nanostructured Thin Films for Multibandgap Silicon Tandem and Triple-stacked Solar Cells	
12:30 - 13:15	LUNCH	
13:15 - 13:25	Photo	
13:30 - 14:10	Nano-biophysics: The new thriving discipline	Dr T Kruger: UP
14:10 - 14:50	Nano for water purification	Prof L Petrik: UWC
14:50 - 15:20	TEA BREAK	
15:20 - 16:00	Solid-State Quantum technology development in South Africa	Prof S Bhattacharyya: WITS
16:00 - 16:40	Challenges in the preparation of nanomaterials; Bottom up self-assembly of nanomaterials	Prof N Revaprasadu : UniZulu
16:40 - 17:00	Controlling the dimensionality of nanomaterials	



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Day 2: Tuesday, 26 November 2019

TOPIC: NANOMATERIALS

Chairperson: Prof C Arendse

08:30 –09:10	Nanotechnology commercialization era, and sustainability imperatives	Dr N Musee: UP
09:10 - 09:50	Ethics in nanoscience and technologies	Prof M Gulumian : NIOH
09:50 - 10:30	Nano Diagnostics	Dr N Mhlanga: Mintek
10:30 - 11:00	TEA BREAK	
11:00 - 11:40	Hybrid Organic/Inorganic Photodetectors	Prof S Guha : Department of Physics and Astronomy University of Missouri, Columbia
11:40 - 12:20	Metal Halide Perovskites for Next Generation Displays and Solar Cells	
12:20 - 13:00	Metal Halide Perovskites for Next Generation Displays and Solar Cells	
13:00 -14:00	LUNCH	
Chairperson: Prof M Meyer		
14:00 - 14:40	Implants for the trapping of glioblastoma cells	Prof F Boury: Université d'Angers, Angers, France
14:40 - 15:20	Protein Encapsulation using Pressurized CO ₂ -based Processes: Challenges and Perspectives	
15:20 - 15:50	TEA BREAK	
15:50 - 17:00	Summary and Panel Discussion	Panel members



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Day 3: Wednesday, 27 November 2019

TOPIC: NANOTECHNOLOGY

Chairperson: Prof L Petrik

08:30 - 09:10	Next generation batteries and supercapacitors	Prof B Bladergroen : UWC
09:10 - 09:50	The design and development of nanomedicines for infectious diseases	Prof A Dube : UWC
09:50 - 10:30	Development of electrocatalysts for polymer electrolyte fuel cells	Dr L Khotseng : UWC
10:30 - 11:00	TEA BREAK	
11:00 - 11:40	Functional thin films and track etched membranes	Dr A Rossouw : Flerov Laboratory of Nuclear Reactions, JINR, Dubna, Russia
11:40 - 12:20	Functional thin films and track etched membranes	
12:20 - 12:40	Functional thin films and track etched membranes	
12:45 - 17:00	Packed Lunch: Excursion to industry using/applying nanotechnology	
19:00 - 22:00	Gala Dinner: Master of Ceremony - Mr Douglas Petersen	



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Day 4: Thursday, 28 November 2019

TOPIC: COMMERCIALIZATION

Chairperson: Prof D Knoesen

08:30 - 9:10	Challenges in the commercialisation of nanomaterials	Dr M Scriba : CSIR
09:10 - 9:50	Strategies to nanotechnology commercialization in South Africa	Dr S Mufamadi : Nabio Consulting Ltd
09:50 - 10:30	Nano-products and Materials at CSIR	Prof R Suprakas : CSIR

10:30 - 11:00 TEA BREAK

Chairperson: Dr M Scriba

11:00 - 11:40	An overview of Medical Diagnostech (Pty) Ltd outlining company, personnel, and product profiles, venturing into industry, comparative analysis between academia and industry, and an industrial overview.	Mr A Uys: Medical Diagnostech (Pty) Ltd
11:40 - 12:00	The role of science communication in advancing engaged research and public acceptance of nanotechnology innovations	Mr S Khoza: SAASTA
12:00 - 12:20	Highs and lows of starting up: A tale of research, innovation and commercialization from 2014-2019.	Mr A Mutombwera: Nanoscience Platform Graduate
12:20 - 13:00	The Role of Intellectual Property and Technology Transfer at universities	Ms M Heystek: Technology Transfer Office (UWC)

13:00 - 14:00 LUNCH

14:00 - 15:20	Technology Entrepreneurship - Am I ready?	Dr A Casanueva: Technology Transfer Office (UWC)
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15:20 - 15:50 TEA BREAK

15:50 - 17:00	Summary and Panel Discussion	Panel members
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Day 5: Friday, 29 November 2019

TOPIC: APPLICATIONS (HEALTH, MEDICATION, WATER, POWER, ENERGY)

Chairperson: Prof E Iwuoha

08:30 - 09:10	Novel Strategies for Designing ZSM-5 Zeolite Catalysts: The Methanol-To-Olefins Paradox?	Dr B Louis: University of Strasbourg
09:10 - 90:50	The role of nanoscale science and technology in hydrogen storage: Materials-based storage option	Dr N Musyoka : HySA Infrastructure Centre of Competence, Energy Centre (CSIR)
09:50 - 10:10	TEA BREAK	
10:10 - 10:50	Biosensors: From the LAB to upscaling/commercialization	Dr O Arotiba : UJ
10:50 - 11:20	Opportunities for Nanotechnology in Therapeutics and Medical Devices	Mr M Burgess : AfriSky Medical
11:20 - 12:00	School evaluation	DSI/OC
12:00 - 13:00	Closing and Certificate Collection	Prof J Frantz: DVC- Research & Innovation (UWC)
13:00 - 14:00	LUNCH AND DEPARTURE	

uel: Nanoscience Platform – University of the Western Cape