CoSAami
CONFERENCE OF THE SOUTH AFRICAN ADVANCED MATERIALS INITIATIVE

PRE-CONFERENCE SEMINAR ON COMPUTATIONAL & DATA-DRIVEN MODELLING

MINTEK
A global leader in mineral and metallurgical innovation

Tuesday 27 October 2026
ROSE ROOM
9:00 to 15:00

science, technology & innovation
Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA

Hosted by MINTEK,
Supported by the Department of Science, Technology and Innovation

PROGRAMME

Programme Director: Dr Ramogohlo Diale-Boshielo

8:30 – 9:00	**Registration**	
9:00 – 9:10	Welcoming Address	Dr Ramogohlo Diale-Boshielo
9:10 – 9:40	Opening Address	**Prof Krishna Govender**
9:40 – 10:00	Effect of $TiCl_4$ medium on Ti_{13} cluster: a molecular dynamics study	**Andile Mazibuko** and Hasani Chauke
10:00 – 10:20	Computational mechanical behaviour in high entropy alloys	**Abidemi Adeyoye**, Patricia Popoola, Olawale Popoola, Samson Adeosun and Modupeola Dada
10:20 – 10: 40	Numerical simulation of Fano resonant electromagnetic split ring resonators	**Realeboga Dikole** and Edwin Magidimisha
10:40 – 11:10	**Tea**	
11:10 – 11:30	A comparison of classical machine learning and vision language models for TB diagnostics	**Kelvin Mpofu,** Nkgaphe Tsebesebe and Sello Manoto
11:30 – 11:50	A comparative analysis of classical planning algorithms for MAV navigation in dynamic subterranean environments	**Trymore Aloni,** Makhosazana Moyo and Turgay Celik
11:50 – 12:10	Design and characterization of Si-Ge compounds for enhanced silicon-based anodes in advanced battery applications	**Samson Singo,** Katlego Phoshoko, Tshidi Mogashoa, Phuti Ngoepe and Raesibe Ledwaba
12:10 – 12:30	Adsorption properties of Fe and Cr modified GaN monolayer for CH2O detection	**Malesela Walter Makgoba,** Mokete Abram Mahladisa, Malili Matshaba, Moshibudi Ramoshaba and Thuto Mosuang
12:30 – 12:50	Effect of Ta on the magnetic and mechanical properties of $Fe_{50}Co_{43.75}Ni_{6.25}$ alloy	**Dineo Maepa,** Tshegofatso Phaahla, Ramogohlo Diale-Boshielo, and Hasani Chauke
13:00 – 14:00	**Lunch**	
14:00 – 14:20	Gaussian process regression versus response surface methodology for laser powder bed fusion process qualification in dimensionless coordinates	**Michael Thomson** and Thorsten Becker
14:30	Closure	
15:00	**Coffee**	