



**DEPARTMENT OF CHEMICAL SCIENCES: POST GRADUATE RESEARCH  
SYMPOSIUM  
06 – 08 NOVEMBER 2019  
UNIVERSITY OF JOHANNESBURG, DOORNFONTEIN CAMPUS  
VENUE: PERSKOR BUILDING, ROOM G207**

**WEDNESDAY 6<sup>th</sup> NOVEMBER 2019**

08:30 – 08:55 Registration

*Chair: Dr Phumlani Msomi*

- 08:55 – 09:00 Welcome and opening remarks Profs' Ndungu and Ndinteh
- 09:00 – 09:30 Ms Olwethu Ngcobo – Lola and Co Organics (Bio at the end of the programme)
- 09:30 – 10:00 Alex Malapane – South African Weather Service and 4IR indaba: Leaping Forward with Industry 4.0 Entrepreneurs (Bio at the end of the programme)
- 10:00 – 10:20 Photocatalytic reduction of selenate and selenite using zirconium -based MOF –  
**M.K. Machabaphala**
- 10:20 – 10:40 Palladium-based nanoparticles supported on Boron-doped carbon nanodots for Electrooxidation of alcohols – **K.E. Raseruthe**
- 10:40 – 11:00 Tin Oxide-Graphene Oxide nanocomposite as an electrode material for Super-capacitor Applications – **P. Kganyago**
- 11:00 – 11:20 **TEA**
- Chair: Dr Maxakato*
- 11:20 – 11:40 Synthesis and Evaluation of Aminophosphines as ligands in Pd-Catalysed cross coupling reactions – **D.R. Lekgau**
- 11:40 – 12:00 Al-doped ZnO@2D-TiC Nanocomposite for Enhanced Thermoelectricity Generation – **S. Manyedi**
- 12:00 – 12:20 Inorganic perovskite-induced synergy on highly selective Pd catalyzed hydrogenation of cinnamaldehyde – **S. Bewana**

- 12:20 – 12:40 Synthesis Of Ulopterol and Meranzin Hydrate, Coumarins from Coleonema album and Murraya paniculata - **T.L. Motsoahae**
- 12:40 – 13:00 Fluorescence sensors for monitoring the emerging environmental contaminants in water – **R. Maluleke**
- 13:00 – 13:20 Application of metal oxides-carbon nanoparticles-cellulose acetate-based gas sensors for the detection of tuberculosis biomarkers – **L. Malepe**
- 13:20 – 14:30 **LUNCH**

**END OF DAY 1**

## THURSDAY 7<sup>th</sup> NOVEMBER 2019

**Chair:** *Prof Ndinteh*

09:00 – 09:45 Plenary – **Prof Meijboom**

09:45 – 10:05 A simple extraction method for arsenic from tuna fish using a choline chloride-malonic acid deep eutectic solvent for determination of total arsenic – **H. DuPlessis**

10:05 – 10:25 Miniaturisation of Catalysis: Heterogeneous catalyst screening on small scale – **R. Potgieter**

10:30 – 11:00 **TEA**

**Chair:** *Prof Pillay*

11:00 – 11:20 Synthesis and Characterization of Carbon Dots Coated Al<sub>2</sub>O<sub>3</sub> Nanofibers Nanocomposite for Pb<sup>2+</sup> ion Adsorption and Reuse for Latent Fingerprint Detection – **B. G. Fouda-Mbanga**

11:20 – 11:40 Design and fabrication of a monolith catalyst for continuous flow epoxidation of styrene in polypropylene printed flow reactor – **O.A. Alimi**

11:40 – 12:00 Synthesis and characterization of sodium ferrate for Water and Wastewater Treatment – **A. Munyengabe**

12:00 – 12:20 Green synthesis of silver nanoparticles using an African Combretum Sp leaves and their evaluation of cytotoxicity, antibacterial assays and photocatalytic properties – **O.T. Fanoro**

12:30 – 13:30 **LUNCH**

**Chair:** *Prof Muller*

13:30 – 13:55 Valorisation of biomass and biomass-derived chemicals – **N.K. Oklu**

13:55 – 14:15 Green synthesis of CuInS<sub>2</sub>/ZnS quantum dots for Selective Detection of Copper Ions – **J.R. Varghese**

14:15 – 14:35 Computational investigation of the binding characteristics of  $\beta$ -amyloid fibrils – **E.F. Marondedze**

14:35 – 14:55 Synthesis and characterisation of metal oxides and carbon nanoparticles and their application in gas sensors – **G Olifant**

15:00 – 15:30 Poster Judging

**END OF DAY 2**

## FRIDAY 8<sup>TH</sup> NOVEMBER 2019

*Chair:* **Dr Mmutlane**

- 09:00 – 09:45 Plenary – Prof Ramasami
- 09:45 – 10:05 High throughput electrochemical sensing of amoxicillin on hybrid 2D nanointerfaces – **A.O. Osikoya**
- 10:05 – 10:25 Synthesis and Characterization of Fluorescent Europium(III) Complex Coated on D-dextrose Composite Powder for Latent Fingerprint Detection with Powder Dusting Method - **E. Prabakaran,**
- 10:25 – 10:40 **TEA**
- 10:40 – 11:00 Synthesis of cadmium free Quantum dots for biological and fluorescence sensing applications – **S Parani**
- 11:00 – 11:20 Tuning the electronic structures, work functions, optical property and stability of bifunctional hybrid graphene oxide/V-doped NaNbO<sub>3</sub> type-II heterostructures: a promising photocatalyst for H<sub>2</sub> production – **F. Opoku**
- 11:20 – 11:40 T. Velempini
- 11:40 – 12:00 Adsorptive removal of major and trace metal ions from synthetic saline and real seawater samples onto magnetic zeolite nanocomposite: Application of multicomponent fixed-bed column adsorption – **D Ramutshatsha-Makhwedzha**
- 12:00 – 12:30 Prize Giving and Closing Remarks – Prof Govender
- 12:30 – **LUNCH**

**END OF DAY 3**

## Olwethu Ngcobo



Olwethu Ngcobo is currently the founder and chief formulator of Lola and Co Organics which is an organic unisex skin care brand. She is also an agriculturalist who has profound interest in the eco system and how human's extreme dependence on capitalism is disturbing the natural order of things. She also has a lifestyle You Tube channel that teaches the masses about sustainable living. Academically, she holds a National Diploma in organic skin care, Hydroponics and Conservation and foundations for farming.

Her interest for the agriculture started in her home town on Worcester where she used to mind a small garden in her grandmother's house. This memory stayed with her into her adult life until she could live her childhood dream again of minding her own garden in 2013. Her love for nature inspired a new found path which lead to her to Lola & Co Organics and gardening, which she will in the future turn to farming.

## Alex Malapane



Alex Malapane is the current General Conference Chair for the 4IR Indaba. He is as a Manager: Research Projects and Strategic Partnerships at South African Weather Service (SAWS). He is serving in both the Editorial Board and Conference Committee at the Institute of Research, Learning and Development, a panel responsible for managing international conferences held at Oxford, Cambridge and Harvard Universities. Alex has co-authored more than 20 peer-reviewed papers published internationally. Academically, he holds an Honors in Earth Science: Mine Surveying, B-Tech in Project Management and a Master of Business Administration (MBA). He is currently pursuing a Postgraduate Diploma in Management. Alex is geared for a Doctoral Degree (Ph.D.) in Business Administration in 2020.

His expertise spans from Research and Development, Project Management, Operations Management, Strategy and Policy Development. He is a conference speaker, facilitator, moderator, author and a professional. He has a global footprint in management consulting. Alex is recently providing public lectures on a subject, "Tracking the Future: The Fourth Industrial Revolution".