



The South African Chemical Institute
**Promoting chemistry, chemists, the chemical industry and
chemical education in South Africa**

INORGANIC AND CARMAN
2024



2-6 June 2024

Champagne Sports Resort

Conference Programme

Sunday, 2 June 2024

14.00-18.00	Registration and check-in
18.00-20.30	Welcome and dinner: Market Menu

Monday, 3 June 2024

7.00-8.30	Breakfast
8.45-9.00	Opening & Welcome – Thishana Singh
9.00-10.00	Session 1 Chair: Neerish Revaprasadu Plenary 1: Nick Long - Organometallic-enhanced nanoelectronics and solar cells (Imperial College, UK)
10.00-10.15	Tribute to Prof Tony Ford – Neil Coville and Bice Martincigh
10.15-10.40	TEA
10.45-11.15	Session 2 Chair: Tshephiso Papo Keynote 1: Gregory Smith - Visible light-induced bioorganometallic chemistry: Illuminating new frontiers (UCT)
11.15-11.35	Oral 1: Kristy-Lyn Barry - Synthesis, characterisation, DNA binding and cytotoxic studies of novel phenanthroline-derived oxovanadium(IV) complexes (UKZN)
11.35-11.55	Oral 2: Nikoletta Bathori - Solid-state crystalline structures of baclofen (CPUT)
11.55-12.25	Invited 1: Nikolay Gerasimchuk - Structural chemistry of cyanoximes (Missouri State Uni, USA)
12.25-12.55	Keynote 2: Stephen Ojwach - Probing the cytotoxicity of Pd(II) and Ru(II) metal complexes through the lenses of substitution kinetics and biomolecular interactions (UKZN)
13.00-13.55	LUNCH
14.00-14.30	Session 3 Chair: Emmanuel Damoyi Keynote 3: Lydia Rhyman – Molecular insights into inorganic complexes using computational chemistry (Uni Mauritius, Mauritius)
14.30-14.45	Student 1: Ngonidzashe Ruwizhi - Using computational drug design for the synthesis of NHC metallodrugs as

	potential anticancer and antimicrobial agents (UKZN)
14.45-15.00	Student 2: Vitalis Mbayo - Quantum chemical studies on antiviral drugs – an insight into antimicrobial resistance (UJ)
15.00-15.30	Keynote 4: Kristian Brandt – Metal-driven co-selection of antibiotic resistance (Uni Copenhagen, Denmark)
15.30-15.55	TEA
16.00-16.05	Session 4 Chair: Mzamo Shozi
16.05-16.10	FP 1: Taryn Golding - The multi-stage antiplasmodial activity and mechanistic investigation of ferrocenyl quinoline-benzimidazole molecular hybrids (UCT)
16.10-16.15	FP 2: Mngqobi Zikode - Development of N,O-donor earth abundant metal catalysts for the synthesis and depolymerization of poly(lactides) (UKZN)
16.15-16.20	FP 3: Blessing Masora - A computational study of mechanistic pathways for the design of a greener process in the production of quinoline-2-(1H)-one and its derivatives (UJ)
16.20-16.25	FP 4: Ndivho Mphoshomali - Synthesis, spectroscopic characterisation, and CO-release of Mn(I) tricarbonyl complexes, coordinated with biologically active amino-based ligands (TUT)
16.25-16.30	FP 5: Mpho Ledwaba - The integration of acid leaching with Metal-Organic Framework-based adsorption for the efficient extraction of platinum group metals (Mintek)
16.30-16.35	FP 6: Korban Oosthuizen - Metalate anion extraction for separation of cobalt(II) from nickel(II) and manganese(II) (SU)
16.35-16.40	FP 7: Zizipho Ngayeka - Synthesis and characterization of composite track-etched membranes for application in mine-waste waters (NMU)
16.40-16.45	FP 8: Murendeni Ravele - CuO nanoparticles functionalised graphitic carbon nitride for the degradation of ibuprofen in water (NWU)
16.45-16.50	FP 9: Sarah Scott - Synthesis and study of thiolato-gold(I) complexes as anticancer agents (SU)

17.00-18.30	POSTER VIEWING
18.30	Dinner: Braai

Tuesday, 4 June 2024

7.00-8.30	Breakfast
8.45-9.45	Session 5 Chair: Vincent Bisetty Plenary 2: Emmanuel Iwuoha - Patterns in the engineering of smart functional materials for clean energy conversion (UWC)
9.45-10.10	TEA
10.15-10.45	Session 6 Chair: Lindelani Qwabe Invited 2: Sreekantha Jonnalagadda - Novel nanocomposites and mixed oxide material as recyclable catalysts and other applications (UKZN)
10.45-11.05	Oral 3: Vladimir Azov - Pd-catalyzed cross-couplings in the synthesis of non-canonical amino acids for the use in hydrogelators (UFS)
11.05-11.20	Oral 4: Adeniyi Ogunlaja - Enhanced HDS and HYD activity of sulfide Co-ligand/Mo catalyst supported on γ-alumina (NMU)
11.20-11.40	Oral 5: William Moloto - Visible light active metal supported TiO₂/C nanohybrids for photocatalytic removal of organic compounds in water (Mintek)
11.40-12.00	Oral 6: Eric Ayom - Dithiophosphonates as versatile precursors to the formation of nickel sulphides and phosphides towards water splitting (UNIZULU)
12.00-12.30	Keynote 5: Nosipho Moloto - Nanocrystals: Breaking boundaries in alkaline water splitting (Wits)
12.30-13.25	LUNCH
13.30-14.00	Session 7 Chair: Werner van Zyl Invited 3: Abdou Lachgar - Photocatalytic green hydrogen production using semiconductor heterojunctions (Wake Forest Uni, USA)
14.00-14.20	Oral 7: Manoko Maubane-Nkadimeng - Waste to value: How can we effectively convert waste into useful materials? (Wits)

14.20-14.40	Oral 8: Henrietta Langmi - Synthesis and properties of metal-organic frameworks derived from waste feedstock (UP)
14.40-14.55	Student 3: Caren Kurgat - Photodegradation of tetracycline by a bismuth oxyiodide/red phosphorus photocatalyst (UKZN)
14.55-15.10	Student 4: Brian Chabalala - Green approach for the synthesis of ZnO-Ag using β-cyclodextrin and honey for photo-catalytic degradation of bromophenol blue (Mintek)
15.10-15.40	Keynote 6: Tiina Leiviskä - Combined methods of preconcentration and degradation for removal of per- and polyfluoroalkyl substances (PFAS) (Uni Oulu, Finland)
15.40-16.00	TEA
16.00-16.05	Session 8 Chair: Pinky Ntola
16.05-16.10	FP 10: Leandre van der Merwe - Targeting breast cancer with novel organometallic complexes (SU)
16.10-16.15	FP 11: Ndumiso Nkosi - Synthesis of zinc-based nanoparticles rested on multiwalled carbon nanotubes for antimicrobial and photocatalytic activity (UKZN)
16.15-16.20	FP 12: Azeezat Rasheed-Adeleke - Synthesis and photocatalytic performance of $\text{Ag}_3\text{PO}_3/\text{ZnFe}_2\text{O}_4$ composite on tetracycline in water (NWU)
16.20-16.25	FP 13: Karabo Khoza - The effect of different stabilisers on stability and photothermal profiling of gold nanorods (UJ)
16.25-16.30	FP 14: Keaoleboga Mosupi - Supercritical carbon dioxide synthesis of iron-based metal organic frameworks (UP)
16.30-16.35	FP 15: Malcolm Ndlovu - Synthesis and study of novel organometallic carbazole derivatives as heat shock protein inhibitors for malaria (SU)
16.35-16.40	FP 16: Sandisiwe Mdoda - Synthesis, characterisation and anticancer activity of pyrazole-based ruthenium(II) arene complexes (UCT)
16.40-16.45	FP 17: Thabang Lebepe - Synthesis of graphene oxide-gold nanorods nanocomposite-porphyrin conjugate for

16.45-16.50	improved dual cancer phototherapy performance (U) FP 18: Adela Madaree – Functionalised graphitic carbon nitride nanohybrids for the piezoelectric-photocatalytic degradation of organic contaminants in wastewater (UKZN)
17.00-18.30	POSTER VIEWING
18.30	Dinner: Buffet

Wednesday, 5 June 2024

7.00-8.30	Breakfast
8.45-9.15	Session 9 Chair: Zenixole Tshentu Keynote 7: Catharine Esterhuysen - The role of noncovalent interactions in the properties of porous compounds (SU)
9.15 – 9.45	Keynote 8: Roman Gorbachev - Recent progress in nanotechnology van der Waals heterostructures (Uni Manchester, UK)
9.45-10.10	TEA
10.15-10.45	Session 10 Chair: Cheslin Moodley Keynote 9: Zenixole Tshentu - Cushioning the global transition to clean energy through sustainable sourcing and processing of fuel oils (NMU)
10.45-11.00	Student 5: Mahdiyeh Mohammadzadeh - Adsorption of pharmaceuticals from municipal wastewater effluent by cost-effective magnetite-pine bark biosorbent in a pilot-scale column (Uni Oulu)
11.00-11.15	Student 6: Fulufhelo Tshikhudo - Synthesis of substituted triazines and their investigation as corrosion inhibitors on aluminum in 1M HCl: Experimental and computational approach (UniVen)
11.15-11.30	Student 7: Lesetja Ramoba - Schiff-base pyrazole chelator ligands coordinated to the fac-[Re(CO) ₃] ⁺ synthon: synthesis, crystallography and in vitro studies (TUT)
11.30-11.45	Student 8: Opeyemi Iresemowo - Selective electrochemical detection of ciprofloxacin with functionalised reduced graphene oxide/strontium oxide-palladium nanocomposites (UKZN)

11.45-12.05	Oral 9: Olatunde Olalekana - Construction of S-Scheme 0D/3D Cd_{0.5}Zn_{0.5}S/CeO₂ heterojunction for the degradation of Cr(VI) and antibiotics (NWU)
12.10-13.30	LUNCH
13.30-18.30	Activities, Games, Free Time
18.30-22.00	GALA DINNER

Thursday, 6 June 2024

07.00-08.45	Breakfast
09.00-10.00	Session 11 Chair: Prof Vincent Nyamori Plenary 3: Sarah Haigh - Dynamic behaviour of single atomic species and nanoparticle catalysts revealed by in-situ transmission electron microscopy (Uni Manchester, UK)
10.00-10.25	TEA
10.30-11.00	Session 12 Chair: Phindile Khoza Keynote 10: Malik Khan - Metal-organic precursor-derived functional nanomaterials for energy generation and storage applications (UNIZULU)
11.00-11.20	Oral 10: Christophe Ndamyabera - Thermochromic aluminium-based fumarate MOF and its kinetic adsorption for nitrogen containing compounds (UP)
11.20-11.40	Oral 11: Nolwazi Nombona - Cellulose composite films as flexible electronics and adsorbent materials (UP)
11.40-12.10	Invited 4: Matthew Davies - Understanding the photochemistry of perovskites for photovoltaics (Swansea Uni, UK)
12.10-12.40	Keynote 11: Reinout Meijboom - Digital manufacturing meets catalysis: some examples of 3D printing in chemistry (UJ)
12.40-13.00	Closing remarks
13.00-14.00	LUNCH & DEPARTURE

Poster Presentations

Poster Number	Presenter	Poster Number	Presenter
P1	William Chu	P29	Nabeelah Sarang
P2	Sarah Scott	P30	Ndumiso Nkosi
P3	Monika Nowakowska	P31	Vuyiseka Qomfo
P4	Mabu Matlou	P32	Sibusiso Sithole
P5	Nqobile Ndlangamandla	P33	Sandile Khoza
P6	Taryn Golding	P34	Sandisiwe Mdoda
P7	Makhosonke Ngcobo	P35	Ferdinand Misakabu
P8	Mnqobi Zikode	P36	Tshepang Mohale
P9	Boitumelo Nthapo	P37	Keotshepile Malebadi
P10	Mangaliso Goge	P38	Murendeni Ravele
P11	Ndivho Mphoshomali	P39	Mathato Motaung
P12	Petrus Prinsloo	P40	Keaoleboga Mosupi
P13	Chakanaka Mungwari	P41	Nwabisa Khethula
P14	Fidelis Chigondo	P42	Lijo Mona
P15	Blessing Masora	P43	Mhlengi Msomi
P16	Nonkosi Matinise	P44	Deogratius Maiga
P17	Solomon Oloyede	P45	Siphosethu Maqinana
P18	Nthabeleng Hlapisi	P46	Azeezat Rasheed-Adeleke
P19	Segun Oladipo	P47	Henrietta Langmi
P20	Allen Tauya Gordon	P48	Siziwe Gqoba
P21	Korban Oosthuizen	P49	Malcolm Ndlovu
P22	Munyaradzi Shumba	P50	Leandre van der Merwe
P23	Thabang Lebepe	P51	Ghannish Soogary
P24	Karabo Khoza	P52	Sandeep Kumar
P25	Kgaugelo Tapala	P53	Muriel Mambanda
P26	Mpho Ledwaba	P54	Lishavia Mahabeer
P27	Adela Madaree	P55	Rhoda Adegoke
P28	Nirvashi Autar	P56	Zizipho Ngayeka