



NANOAFRICA CONFERENCE 2022

26 - 28 OCTOBER 2022

8th International Conference on Nanoscience
and Nanotechnology in Africa (NanoAfrica 2022)

Nanotechnology for Sustainability: Towards attaining the World's Sustainable Development Goals.

CONFERENCE PROGRAMME



Day 1: Wednesday, 26 October 2022

07:00 - 08:00	Registration		<i>Tea, coffee and snacks</i>
08:00 - 08:10	Welcome		<i>Conference Chair: V Fester</i>
08:10 - 08:20	Opening Address (Virtual)		<i>CPUT DVC - Research & Innovation: D Phaho</i>
08:20 - 08:30	Address by South Africa Nanotechnology Initiative (SANi)		<i>SANi President: E Nxumalo</i>
08:30 - 09:30	Plenary Address (Virtual): Development of Efficient and Stable Perovskite Solar Cells and Modules		<i>MK Nazeeruddin (SOMERSET 1)</i>
09:30 - 09:45	TEA BREAK		
	VENUE: SOMERSET 1	VENUE: SOMERSET 2	VENUE: SOMERSET 3
	Session: Nanomaterials for Energy Applications I (Chair: S Guha)	Session: Nanomaterials for Water Applications I (Chair: E Nxumalo)	Session: Nanomaterials for Health, Biomedical and Biotechnology Applications I (Chair: A Mohammed)
09:45 - 10:00	Synthesis and characterization of 2D transition metal dichalcogenide nanomaterials for supercapacitance and water splitting	Screening of water pollutants using metallophthalocyanine-based chemically modified electrodes <i>K Kantize, et al [ID:003]</i>	Green synthesis of gold nanoparticles for colon cancer treatment <i>I Zosela, et al [ID:002]</i>

	<i>S Khoza, et al [ID:171]</i>		
10:00 - 10:15	Restriction of residual defects of indium phosphide nanowires: Integration into single nanowire electronic device for gas sensing <i>S Nyembe and H Mabowa [ID:005]</i>	Aquatic risk assessment of engineered nanomaterials released from commercial products: The South African case study <i>M Moloji, et al [ID:004]</i>	Electrochemical aptasensor based on indium tellurium selenium quantum dots for interferon-Gamma detection <i>K Januarie, et al [ID:011]</i>
10:15 – 10:30	N-doped graphene/biomass hybrid nanostructured materials for efficient solar steam generation <i>K Yokwana and S Mhlanga [ID:006]</i>	PEDOT:PSS@Fe ₃ O ₄ modified chitosan nanosheets for flow capacitive deionization (FCDI) of CdCO ₃ and CdPO ₄ salts. <i>O Leping, et al [ID:012]</i>	Oxidation of aminophenols on Ru-Au/TiO ₂ and Ru-Pd/TiO ₂ nanocatalysts <i>T Mntambo, et al [ID:008]</i>
10:30 - 10:45	The synthesis and characterization of magnetic α -Fe ₂ O ₃ and ϵ -Fe ₂ O ₃ nanoparticles <i>A Chithwayo and C Masina [ID:007]</i>	Removal of hexavalent chromium via an adsorption coupled reduction mechanism using olive oil derived carbon nano-onions <i>T Ntuli, et al [ID:014]</i>	Oxidation of phenols and naphthols on supported noble metal nanocatalysts <i>T Lekgetho, et al [ID:043]</i>
10:45 - 11:00	Shape controlling approaches for the fabrication of platinum nanoparticles <i>L Twala, et al [ID:013]</i>	Synthesis and characterization of a layered polyvinylpyrrolidone-TiO ₂ -dihydrofolic acid hydrogel for the removal of micro-organic pollutants from water system <i>A Qose, et al [ID:015]</i>	Biosynthesis of Adansonia Digitata leaves' mediated TiO ₂ nanoparticles <i>A Fall, et al [ID:029]</i>
11:00 - 11:15	Electro-design of bimetallic PdTe electrocatalyst for ethanol oxidation: Combined experimental approach and ab initio Density Functional Theory (DFT) study <i>A Mkhohlakali, et al [ID:009]</i>	Fe ₃ O ₄ @MIL-101 (Cr) for extraction of perfluoroalkyl acids compounds from environmental water samples <i>S Selahle and P Nomngongo [ID:016]</i>	Synthesis, encapsulation, and bacterial activity of Au and Ag NPs with coumarin scaffolds <i>T Moswetsa, et al [ID:151]</i>
11:15 - 11:30	SESSION BREAK		
	VENUE: SOMERSET 1	VENUE: SOMERSET 2	VENUE: SOMERSET 3
	Session: Nanomaterials for Energy Applications II (Chair: P Van Loosdrecht)	Session: Nanomaterials for Water Applications II (Chair: K Sikhwivhilu)	Session: Nanomaterials for Health, Biomedical and Biotechnology Applications II (Chair: M Chowdhury)
11:30 - 11:45	Starch built TiO ₂ nanoarchitecture with mixed anatase and rutile phase for high energy density supercapacitor electrode <i>Oluwaseyi Saliu, et al [ID:010]</i>	Porous carbon derived from metal-organic framework for treatment of acid mine drainage <i>A Mpupa, et al [ID:018]</i>	Antimicrobial lipid nanoparticles from black soldier fly larvae: A promising alternative strategy to antibiotics <i>R Okwuosa, et al [ID:153]</i>

11:45 - 12:00	Adsorption of dysprosium on hexagonal boron-nitride monolayer: A DFT study <i>R Morad, et al [ID:017]</i>	Preparation and characterization of Zn/Ag modified graphitic carbon nitride nanocomposites for photocatalysis of dyes from wastewater <i>F Mamba, et al [ID:021]</i>	Method development for detection and characterization of silver nanoparticles in South African consumer products <i>M Mpontshane, et al [ID:041]</i>
12:00 – 12:15	Freestanding hydroxylated graphene electrodes for high voltage aqueous symmetric supercapacitor <i>M Ndipingwi, et al [ID:020]</i>	Transformation of nano-enabled products during simulated usage and disposal <i>D Currie, et al [ID:025]</i>	Silver nanoparticles synthesis and conjugation with compounds for Covid-19 Treatment <i>N Mwenze, et al [ID:047]</i>
12:15 – 12:30	The use of β -MnO ₂ nanoclusters for enhancement of lithium-ion rechargeable batteries <i>PW Masoga, et al [ID:164]</i>	Incorporation of silver nanoparticles in chitosan/poly ethylene oxide blends nanofibers using electrospinning technique and their antibacterial studies <i>AYY Okily [ID:148]</i>	In vitro therapeutic effects of Dicoma Anomala synthesized silver nanoparticles in combination with pheophorbide a-mediated photodynamic therapy on A549 lung cancer cells <i>A Chota, et al [ID:050]</i>
12:30 – 12:45	Electrocatalytic activity of alumina-silicates supported electrocatalysts for oxygen electro-reduction in alkaline media <i>T Mashola, et al [ID:149]</i>	(Cu/Fe/Zn)-MOF/g-C ₃ N ₄ nanocomposites-based SPCE for electrochemical detection of 2, 4-dichlorophenol <i>AD Ambaye and E Nxumalo [ID:150]</i>	Rooibos capped, green-synthesized iron oxide nanoparticles (Hematite) alleviate drought stress in Sorghum Bicolor plants <i>N Ndou, et al [ID:133]</i>
12:45 – 13:00	Influence of TiO ₂ and Caffeine on the structural, morphology and optical properties of MAPbI ₃ <i>D Tsotetsi, et al [ID:157]</i>	Enhancing the photocatalytic activity of Sn doped MgO nanoparticles for sustainable wastewater treatment applications <i>K Kaviyarasu, et al [ID:040]</i>	Evaluation of potential role of silver nanoparticles in enhancing the anti-proliferative effect of Berberine against cancer cells <i>P Sarbadhikary, et al [ID:051]</i>
13:00 - 14:00	LUNCH		
	VENUE: SOMERSET 1	VENUE: SOMERSET 2	VENUE: SOMERSET 3
	Session: Nanomaterials for Energy Applications III (Chair: F Cummings)	Session: Nanomaterials for Water Applications III (Chair: M Maaza)	Session: Nanomaterials for Health, Biomedical and Biotechnology Applications III (Chair: M Dhlamini)
14:00 – 14:45	Keynote Address: Multifunctional materials for emerging technologies <i>F Rosei</i>	Keynote Address (Virtual): Combating Environmental and Climatic Issues through Thin Film Research <i>F Ezema</i>	Keynote Address: Natural products/metal nanoparticles conjugates <i>AA Hussein Mohammed</i>
14:45 - 15:00	Formulation and electrochemical characterization of 2D MoS ₂ -based conductive ink <i>N Mphuthi, et al [ID:095]</i>	Treatment and management of Au and Ag nano-industrial wastewater <i>B May, et al [ID:052]</i>	Synthesis, stability, and toxicity of peptide functionalized gold nanoparticles <i>R Ramagoma, et al [ID:053]</i>

15:00 - 15:15	Thermodynamic phase stability simulation of Fe-Y-Al (Y= Pd and Ag) alloys <i>C Mkhonto, et al [ID:166]</i>	Photodegradation of Ciprofloxacin using pristine and Ag doped ZnO photocatalysts <i>S Onkani [ID:056]</i>	Anti-obesity effects of citrate-capped gold nanoparticles on 3T3-L1 cells <i>A Mbengashe, et al [ID:054]</i>
15:15 - 15:30	Synthesis and characterization of a silicene-polythiophene nanocomposite for the energy storage in supercapacitors <i>D Molele and J Ramontja [ID:137]</i>	Nanofluids by radiolysis as novel class of nano-coolants with enhanced thermal conductivity <i>M Akbari, et al [ID:035]</i>	Isolation, functionalization and characterization of cellulose nanofibers from pineapple leaf fibers for biomedical application <i>T Seyisi and Z Tywabi-Ngeva [ID:055]</i>
15:30 - 15:45	TEA BREAK		
15:45 - 16:30	Plenary Address (Virtual): Scalable Laser Fabrication of Colloidal Nanoparticles for Energy and Biomedical Application		<i>S Barcikowski (SOMERSET 1)</i>
16:30 – 17:10	Promoting responsible research in nanotechnology through nano-safety and sustainable research and public engagement		<i>South African Agency for Science and Technology Advancement (SAASTA) Address (SOMERSET 1)</i>
17:10 – 18:15	POSTER SESSION 1		

Day 1: Wednesday, 26 October 2022

POSTER SESSION 1

1.01	Nanofertilizers for sustainable agriculture: Synthesis, characterization, and application as a germinating agent	<i>K Cloete, et al [ID:022]</i>
1.02	Physical properties of electrodeposited CuO nanostructure: potential application as selective solar absorbers	<i>Z Mihabaw, et al [ID:023]</i>
1.03	Coating of Favipiravir (FVP) on Silver Nanoparticles: First principle study	<i>M Akbari, et al [ID:024]</i>
1.04	Synthesis and characterization of WO ₃ nanoparticles and WO ₃ -rGO nanocomposite: Electrochemical application	<i>K Hkiri, et al [ID:026]</i>
1.05	Synthesis of nanofluids by radiolysis: Potential application for thermal conductivity enhancement	<i>S Nongauza, et al [ID:028]</i>
1.06	Room temperature hydrogen gas sensing of nanoscaled 1-D VO ₂	<i>B Mabakachaba, et al [ID:030]</i>
1.07	The influence of γ -doses irradiation on structural and optical properties of NiO thin films prepared by spin coating method	<i>H Gebretinsae, et al [ID:032]</i>
1.08	Effect of Cu ₂ O, ZnO and Fe ₃ O ₄ nanoparticles as fertilizers on Chickpea (<i>Cicer arietinum</i> L) growth parameters	<i>A Kaningini, et al [ID:034]</i>
1.09	Biosynthesis of Papaver Somniferum mediated CdO nanoparticles	<i>G Weleegers, et al [ID:044]</i>
1.10	Tin oxide supported on electrochemically exfoliated graphene for supercapacitor application	<i>D Mabena, et al [ID:045]</i>
1.11	Growth kinetics of hydrothermally synthesised Co ₃ O ₄ nanoparticles and their application in solar thermal heat transfer fluids	<i>P Ntumba, et al [ID:046]</i>
1.12	Fabrication of copper selenide nanoparticles incorporated with maize cob powder to form nanocomposites for the removal of Pb (II)	<i>B Mametja, et al [ID:049]</i>
1.13	Environmental risk assessment and transformation of engineered nanomaterials released from nano enabled products	<i>T Mzinyati, et al [ID:060]</i>
1.14	Biosynthesis of yttrium oxide nanoparticles using <i>Hyphaene Thebaica</i> extract and their biological applications	<i>H Mohamed, et al [ID:070]</i>
1.15	An investigative approach to electrochemical energy storage applications of CeO ₂ /GNPs hybrid materials	<i>N Chauke, et al [ID:076]</i>
1.16	Effect of doping with rhodium (Rh) and ruthenium (Ru) on titanium (Ti) nanoclusters: A density functional theory study	<i>R Moeti, et al [ID:172]</i>
1.17	Carbon nanotubes as a reinforcement material for sustainable construction composites	<i>B Makgabutlane, et al [ID:019]</i>
1.18	An evaluation of hibiscus sabdariffa gold nanoparticles for the treatment of triple negative breast cancer	<i>N Reddy, et al [ID:067]</i>
1.19	The effect of capping agents on gold nanostar stability, functionalization, and colorimetric biosensing capability	<i>AT Munyayi, et al [ID:174]</i>
1.20	Green synthesis of silver-gold nanocomposite for the detection of Lamivudine	<i>E Dudumashe, et al [ID:127]</i>
1.21	Biosynthesis and photocatalytic studies <i>Adansonia Digitata</i> leaves' mediated TiO ₂ nanoparticles	<i>A Fall et al [ID:029]</i>
1.22	Effect of bandgap energy on optical properties of Cr ₂ O ₃ thin films prepared via green synthesis method: The optical constants (n and k)	<i>MG Tsegay, et al [ID:174]</i>
1.23	Nano-structured VO ₂ based films for space application and radiative environment	<i>IG Madiba, et al [ID:027]</i>
1.24	Using laser ablation in liquid (LASIS) method to synthesize silver nanoparticles for SERS applications	<i>MW Juma, et al [ID:175]</i>

Day 2: Thursday, 27 October 2022

07:30 - 08:30	Registration		<i>Tea, coffee and snacks</i>
08:30 - 09:30	Plenary Address: Synthesis and characterization of oxide materials for photonics and energy		M Chaker
09:30 - 09:45	TEA BREAK		
	VENUE: SOMERSET 1	VENUE: SOMERSET 2	VENUE: SOMERSET 3
	Session: Nanomaterials for Energy Applications IV (Chair: S Halindintwali)	Session: Nanomaterials for Water Applications IV (Chair: V Fester)	Session: Nanomaterials for Health, Biomedical and Biotechnology Applications IV (Chair: E Iwuoha)
09:45 - 10:00	Design of tin oxide nanoparticles for ethanol detection <i>K Shingange and G Mhlongo [ID:134]</i>	Quantitative analysis of silver and gold nanomaterials in industrial wastewater <i>P Madzivha, et al [ID:058]</i>	Development of a rapid diagnostic test for the detection of human Mycobacterium tuberculosis antibodies <i>K Setlolamathe, et al [ID:062]</i>
10:00 - 10:15	Enhanced sensing properties of ZnO/ZnFe ₂ O ₄ heterostructures induced by oxygen vacancies <i>M Nemufulwi, et al [ID:048]</i>	Graphene oxide-quantum dots (GO-QDs) nanocomposite fluorescence sensors for monitoring emerging environmental contaminants in water <i>R Maluleke and S Oluwatobi [ID:064]</i>	Graphene-surface enhanced Raman spectroscopy (G-SERS) for the detection of blood glucose <i>H Chauke, et al [ID:065]</i>
10:15 – 10:30	Platinum nanoparticles loaded on pristine and boron oxide modified carbon nanionons for enhanced ammonia electrooxidation in alkaline direct ammonia fuel cells <i>Ludwe Sikeyi, et al [ID:059]</i>	Synthesis of TiO ₂ /cellulose nanocomposite as a functional photocatalyst <i>M Ballim, et al [ID:072]</i>	The effects of blueberry-synthesized gold nanoparticles on obese rat <i>D Singo and S Roux [ID:069]</i>
10:30 - 10:45	Exploring theoretical hydrogen absorption properties of AB ₂ -based high entropy alloys: DFT study <i>T Somo, et al [ID:061]</i>	Magnetic Fe ₃ O ₄ @Mg/Al-layered double hydroxide adsorbent for preconcentration of trace metals in water matrices <i>L Nyaba, et al [ID:116]</i>	Designing of novel wound healing scaffolds based on silver and/or copper nanoparticles embedded on biodegradable polymers <i>N Shumbula [ID:071]</i>
10:45 - 11:00	Colloidal synthesis of Pt dichalcogenides electro-catalysts for HER <i>L Mxakaza, et al [ID:066]</i>	Anti-fouling and anti-bacterial zwitterionic grafted partially reduced graphene oxide/thin film nanocomposite membrane of water desalination <i>K Matshetshe, et al [ID:092]</i>	Application of 1H NMR to study the green synthesis of gold nanoparticles (Au-NPs) using some phenolic from Glycyrrhiza Glabra <i>A Eltahir and A Hussein [ID:091]</i>
11:00 - 11:15	In-situ crystallites size-dependent of electrochemical performances of Co-doped MoS ₂ using Williamson-Hall Methods <i>IT Bello, et al [ID:155]</i>	Ion removal in winery wastewater using capacitive deionisation <i>C Theron, et al [ID:152]</i>	Bio-engineered nanoscaled particles for biomedical applications <i>AH Mohamed et al [ID:113]</i>
11:15 - 11:30	SESSION BREAK		
	VENUE: SOMERSET 1	VENUE: SOMERSET 2	VENUE: SOMERSET 3

	Session: Nanomaterials for Energy Applications V (Chair: G Mhlongo)	Session: Nanomaterials for Water Applications V (Chair: P Nomngongo)	Session: Nanomaterials for Health, Biomedical and Biotechnology Applications V (Chair: M Chowdhury)
11:30 - 11:45	One-pot hydrothermal synthesis of N-rGO/Hausmannite Mn ₃ O ₄ nanohybrid for supercapacitor applications <i>K Makgopa and M Ratsoma [ID:110]</i>	Synthesis of g-C ₃ N ₄ thin film nanocomposite membrane for water desalination <i>L Mampane, et al [ID:115]</i>	Biodiesel production using nanocellulose-supported CaOH catalyst synthesized from phosphate rock. <i>J Kiprono and H Ruto [ID:094]</i>
11:45 - 12:00	Theoretical study on the Pd and Ni doped titanium nanoclusters <i>T Phaahla, et al [ID:075]</i>	Plant-based bionanocomposites as modifiers for TiO ₂ : Towards greener photocatalytic processes <i>K Mtshatsheni, et al [ID:140]</i>	Green synthesis and characterization of Au-Pd bimetallic nanoparticles using <i>Aspalathus Linearis</i> <i>N Seadle, et al [ID:099]</i>
12:00 – 12:15	Synthesis of NiFe ₂ O ₄ on N,P co-doped carbon nanosheets for ORR <i>S Mbokazi, et al [ID:078]</i>	Synthesis and characterization of magnetic Fe ₃ O ₄ @AC adsorbent from plastic waste and acid mine drainage for the removal of per- and polyfluoroalkyl substances from water systems <i>B Mvala, et al [ID:119]</i>	Nano-technological innovation of using carbon nanodots for drug delivery in cancer therapy <i>K Machumele, et al [ID:109]</i>
12:15 – 12:30	NiO promotional effect on palladium/mesoporous carbon towards ethylene glycol electrooxidation <i>T Matthews, et al [ID:079]</i>	Evaluation of ion transport and current rectification of an adhesive substrate asymmetrically modified with nanoporous sulfonated poly(phenylene oxide) (sPPO) for potential desalination applications <i>A Mfenguza, et al [ID:122]</i>	Green-synthesized zinc oxide nanoparticles mitigate salt stress in <i>Sorghum Bicolor</i> <i>T Rakgotho, et al [ID:126]</i>
12:30 – 12:45	Catalytic properties of palladium-based electro-catalysts towards isopropanol and ethanol electro-oxidation <i>M Zikhali and N Maxakato [ID:080]</i>	Nanostructured immunosensor for low level detection of waterborne <i>Cryptosporidium</i> <i>A Siwak and P Baker [ID:128]</i>	Nanotechnology inspired scaffolds loaded with silver, curcumin & chitosan for the tissue engineering in chronic infectious wounds <i>S Kalakotla, et al [ID:145]</i>
12:45 – 13:00	Strain induced by temperature evolution of mesoporous ZnO nanopowders and its effect on structural and optical properties <i>M Maswanganye, et al [ID:156]</i>	Influence of the Zeolite ZSM-22 Precursor on a UF-PES Selective Substrate Layer for Salts Rejection <i>J Ramontja, et al [ID:154]</i>	On the multifunctionality of VO ₂ nanostructures <i>N Numan et al [ID:175]</i>
13:00 - 14:00	LUNCH		
14:00 – 14:45	Plenary Address: Functionally Engineered Materials for Energy Sustainability and Diagnostic Sensing		<i>E Iwuoha (SOMERSET 1)</i>
	VENUE: SOMERSET 1	VENUE: SOMERSET 2	VENUE: SOMERSET 3

	Session: Nanomaterials for Energy Applications VI (Chair: F Cummings)	Session: Nanomaterials for Water Applications VI (Chair: M Maaza)	Session: Nanomaterials for Health, Biomedical and Biotechnology Applications VI (Chair: A Mohammed)
14:45 - 15:00	Nano-composite proton exchange membrane for iron-air/flow battery application <i>M Phela, et al [ID:081]</i>	Titania-carbon nanotubes nanocomposites-modified photocatalytic membranes: A visible light-driven decontamination process <i>S Zikalala, et al [ID:141]</i>	Calcium carbonate (CaCO ₃) nanoparticles from avocado seed extract: bioinspired synthesis and characterization <i>T Motlhalamme and M Maaza [ID:131]</i>
15:00 - 15:15	The development of anion exchange ionomer for electrocatalysts in application of anion exchange membrane fuel cells <i>T Maumau, et al [ID:084]</i>	Synthesis of nano-NaX from biomass ash: Heavy metals adsorption potential <i>A Akinjokun, et al [ID:138]</i>	Solvent-Induced chirality in self-assembled porphyrins <i>K More, et al [ID:169]</i>
15:15 - 15:30	Synthesis of palladium-based electrocatalysts for electrooxidation of ethylene glycol <i>T Makhunga, et al [ID:086]</i>	Electronic effects of PGM-containing nano-perovskite systems in heterogeneous catalysis <i>Y Nzuzo, et al [ID:106]</i>	Development of polybutylene succinate-based composites for agricultural applications <i>M Motloun, et al [ID:124]</i>
15:30 - 15:45	Synthesis of zinc sulfide nanoparticles and their thin films for solar cell application from a substituted Thiourea ligand through thermal decomposition <i>A Jawore, et al [ID:088]</i>	A green approach of zinc magnesium oxide for electrochemical applications <i>N Matinise, et al [ID:114]</i>	Influence of cellulose nanoparticles on PLA/PCL and PLA/PEG blended nanocomposites <i>K Matumba, et al [ID:123]</i>
15:45 – 16:00	TEA BREAK		
16:00 - 16:30	Plenary Address (Virtual): Z-scheme heterojunctions and their application in the photocatalytic treatment of contaminants of emerging concern		<i>D Dionysiou (SOMERSET 1)</i>
16:30 – 17:45	POSTER SESSION 2		
18:30 – 21:00	GALA DINNER (Grand Ballroom)		

Day 2: Thursday, 27 October 2022

POSTER SESSION 2

2.01	Investigation of N-rGO/NH ₄ MnPO ₄ ·H ₂ O nanohybrid as electrode material for high-performance supercapacitors	<i>M Ratsoma, et al [ID:077]</i>
2.02	Microwave synthesis of SnO ₂ nanoparticles decorated on N-rGO for supercapacitors	<i>O Seerane, et al [ID:082]</i>
2.03	Photocatalytic degradation of organochlorines using MOFs decorated fluorine-doped SnO ₂ nanoparticles	<i>B Poho, et al [ID:083]</i>
2.04	Formation of spherical monodispersed silver nanoparticles with modified Lee-Meisel technique	<i>M Mohlala, et al [ID:087]</i>
2.05	Synthesis of core-shell Fe ₃ O ₄ @SiO ₂ @PDA nanocomposite for the adsorption of Tetracycline from wastewater	<i>O Adisa, et al [ID:090]</i>
2.06	Synthesis of Oleylamine capped silver nanoparticles for antifungal application	<i>J Mining, et al [ID:093]</i>
2.07	Evaluation of innovative polyvinyl alcohol/alginate/green palladium nanoparticles composite scaffolds effect on differentiated human dental pulp stem cells into osteoblasts-like cells	<i>E Ismail, et al [ID:098]</i>
2.08	Er:Ce TiO ₂ -CNT composites immobilized in hydrogel beads for removal of azo dyes	<i>D Boikanyo [ID:102]</i>
2.09	Water splitting for hydrogen production using metal oxides with N-MWCNTs	<i>Y Mhlana, et al [ID:104]</i>
2.10	Thermal performance of copper-distilled water nanofluid in a wavy channel	<i>M Aligholami, et al [ID:111]</i>
2.11	A study on the shape effect of AgI nanoparticles on cloud seeding	<i>S Khosroshahi and M Maaza [ID:112]</i>
2.12	Ag based nanofluids by laser liquid-solid interaction	<i>S Dlamini, et al [ID:117]</i>
2.13	Lead halide deposition for conversion to hybrid perovskites thin film	<i>M Mthimkulu, et al [ID:125]</i>
2.14	Synthesis of redox-responsive tetrathiafulvalene derivatives to be incorporated into supramolecular chemistry & electrochemistry	<i>K Tshehla [ID:132]</i>
2.15	Synthesis of redox-responsive tetrathiafulvalene derivatives with amphiphilic properties to be used in soft materials	<i>K Tshehla and V Azov [ID:139]</i>
2.16	CdS sensitized ZnO nanowire/TiO ₂ hybrid photoanodes for quantum dot-sensitized solar cell application	<i>M-A Mohamed and F Cummings [ID:147]</i>
2.17	Amperometric detection of nitrate using Sn doped CuO thin film	<i>MR Chowdhury, et al [ID:001]</i>
2.18	Tuning the properties of CuInS ₂ using different molecular precursors and solvents	<i>S Masikane and N Revaprasadu [ID:170]</i>
2.19	In-vitro evaluation of Vernonia Amygdalina gold nanoparticles to stimulate apoptosis in breast cancer cell lines	<i>Z Pali, et al [ID:068]</i>
2.20	Biosynthesis of Au-Ag Bimetallic Nanoparticles Using Green Technology	<i>BR Tanefo Tchiogoua, et al [ID:100]</i>
2.21	Synthesis of graphene-reinforced nanocomposite polymers for building and construction technology	<i>Z Sodzidzi, et al [ID:101]</i>
2.22	A scalable and energy efficient approach toward the synthesis of porous silicon nanoparticles as a high-performance anode for sodium-ion batteries	<i>R-J Larkin [ID:142]</i>
2.23	Synthesis, characterization and anchorage studies of pristine silver nanoparticles	<i>NM Mwenze, et al [ID:176]</i>
2.24	Brownian motion effect in nanofluids	<i>N Tandjigora, et al [ID: 177]</i>
2.25	Synthesis of Hematin-loaded chitosan nanoparticles for the elimination of Fusarium Verticilliodes	<i>K Khameli, et al [ID:129]</i>

Day 3: Friday, 28 October 2022

07:30 – 08:30	Registration		<i>Tea, coffee and snacks</i>
08:30 – 09:15	Plenary Address (Virtual): Inducing a quantum spin liquid state in the approximate Kitaev material α -RuCl ₃		<i>PHM van Loosdrecht (SOMERSET 1)</i>
09:15 – 09:30	TEA BREAK		
	VENUE: SOMERSET 1	VENUE: SOMERSET 2	VENUE: SOMERSET 3
	Session: Nanomaterials for Energy Applications VII (Chair: M Chowdhury)	Session: Nanomaterials for Energy Applications IX (Chair: G Mhlongo)	Session: Nanomaterials for Water Applications VII (Chair: C Walters)
09:30 – 10:00	Keynote Address: Shrinking the dimensionality in layered compounds: tunable optical properties <i>S Guha</i>	Keynote Address (Virtual): Novel material for efficient energy harvesting <i>MA Swillam</i>	Invited Talk: Role of porous nanocomposite in environmental monitoring and remediation <i>P Nomngongo</i>
10:00 – 10:15	The microwave-assisted synthesis of carbon-nanodots for application in organic photovoltaics <i>K Modisane, et al [ID:103]</i>	Magnetic and photoluminescent properties of zinc aluminate doped with iron and cerium <i>E Magasi, et al [ID:136]</i>	Green nanofibers membranes of cellulose Saccharum Officinarum L sugarcane bagasse for removal of organic contaminants in wastewater <i>Z Tywabi-Ngeva [ID:057]</i>
10:15 – 10:30	Porous nitrogen doped activated carbon for high energy density supercapacitors <i>B Shaku [ID:105]</i>	(11:15 – 11:30) Solventless synthesis of compositionally tuned Ni(1-x)CoxIn2S4 (0 ≤ x ≤ 1) solid solutions for electrochemical applications <i>Z Mzimela, et al [ID:168]</i>	Effect of boron nitride nanosheets (BNNS) on the structural morphology and performance properties of polyvinylidene (PVDF) membranes for water-oil separation <i>K Mashiloane, et al [ID:158]</i>
10:30 – 10:45	A CNPs/ZnO@ZIF-8 room temperature gas sensor for the detection of methanol vapour <i>L Malepe, et al [ID:118]</i>	Nanostructural properties and optical modeling of thermally annealed silicon carbide thin films <i>S Halindintwali, et al [ID:146]</i>	Fabrication of magnetic UIO-66 MOF nanocomposite for dispersive solid phase extraction (DSPE) of metformin in water systems <i>A Sekopelo, et al [ID:160]</i>
10:45 – 11:00	Composite polymer electrolyte membrane for fuel cells and battery application <i>P Msomi [ID:107]</i>	Exploration of the different dimensions of the wurtzite ZnO structure nanomaterial as gas sensors at room temperature <i>M Ramike and M Mamo [ID:144]</i>	Surface modified carbon nanomats provide cationic and anionic rectifier membranes in aqueous electrolyte media: A prospect for desalination <i>L Tshwenya [ID:162]</i>
11:00 – 11:15	SESSION BREAK		
	VENUE: SOMERSET 1	VENUE: SOMERSET 2	VENUE: SOMERSET 3
	Session: Nanomaterials for Energy Applications VIII	Session: Nanomaterials for Energy Applications X	Session: Synthesis and characterization of Nanomaterials/ Nanomaterials for Sensing

	(Chair: S Halindintwali)	(Chair: MS Dhlamini)	(Chair: K Sikhwivhilu)
11:15 – 11:45	Keynote Address (Virtual): There is a tiny little engine ... <i>A Braun</i>	Invited Talk: Solving challenges for clean energy adoption – From a nano-scale world to macro-scale applications <i>J Jankovic</i>	(11:15 – 11:30) Magnetic and mechanical properties in Mn-doped B2 FeCo soft magnetic materials <i>T Ledwaba, et al [ID:165]</i> (11:30 – 11:45) Synthesis and applications of metal organic framework composites <i>K Modibane [ID:143]</i>
11:45 – 12:00	Synthesis and characterization of crosslinked membrane for fuel cells <i>M Sedibeng, et al [ID:097]</i>	Synthesis of a homogenous catalyst encapsulated in a nanoreactor <i>B Mtolo, et al [ID:108]</i>	Fabrication of Co ₃ O ₄ nanostructures: Characterization and gas sensing applications <i>R Letsoalo, et al [ID:135]</i>
12:00 – 12:15	Investigating the electronic, mechanical and magnetic properties of NdGdFe14B permanent magnets <i>ME Baloyi, et al [ID:163]</i>	Nanoporous gold catalysis modelling: Self-organisation and reactivity of surface oxygen using AIMD simulations <i>L Carroll and L Moskaleva [ID:121]</i>	Methane sensing properties of belts-like In ₂ O ₃ product obtained by electrospinning method <i>M Kgomo [ID:120]</i>
12:15 – 12:30	Nickel sulfide on lignin-derived carbon material for supercapacitors <i>V Moagi, et al [ID:042]</i>	First-principles study on the structural, electrical, mechanical, and thermodynamic properties of Na de-intercalation from olivine NaMnPO ₄ <i>R Dima, et al [ID:130]</i>	
12:30 - 13h00	Special Address: (SOMERSET 1)		<i>M Maaza</i>
13:00 – 13:30	Awards and Closing Ceremony (SOMERSET 1)		
13:30-14h15	LUNCH		
14h15-15h30	South African Nanotechnology Initiative (SANi) Annual General Meeting		