

MONDAY December 11th

0700-0920 Registration						
0920-0940 Tea						
0945-1145 Official opening Session						
Tsodilo 1						
1145 - 1245 Opening Plenary (B5) Jean-Marie Lehn “Dynamic Materials Towards Functional Adaptive Materials”						
<i>Chair: Nelson Torto</i>						
1250-1400 Lunch						
Breakaway sessions x6						
	<i>Chair: Kenneth Ozoemena</i>	<i>Chair: Neerish Revaprasadu</i>	<i>Chair: Sabelo Mhlanga</i>	<i>Chair: Naomi Matsuura</i>	<i>Chair: Francis Gudyanga</i>	<i>Chair: Veronica Augustyn</i>
	Energy Okavango 1	Nanotechnology Okavango 2	Water Moremi	Health Serondela 1&2	Mining Serondela 2&3	Education Tsodilo 2
1400-1430	Boppana V.R. Chowdari Advanced Nanofunctional Materials for Li-ion Batteries	Malik Maaza Green bio-synthesis of multifunctional nanoscaled oxides using natural extracts as effective bio-chelating agents	Benjamin Hsiao To Purify Water with Nanocellulose	Luisa torsi Organic bioelectronics for bio-chemical detections at ultra-low detection limits	Joseph Ramotshabi Mining contribution to the Botswana economy through local content	Michael Adewumi Educating Engineers for Africa in the 21st Century
1430-1450	Chinwe O. Ikpo High Performance Lithium Manganese Silicate Nanoparticulate Cathode Material for Secondary Lithium Batteries	Kharouna Talla Structural and optical properties of MgXZn1-XO (0≤X≤0.39) nanorods grown by metalorganic chemical vapour deposition	Noziphlo N. Gumbi Fabrication of macrovoid-free polyethersulfone/sulfonated polysulfone/o-MWCNT support UF membranes with improved mechanical strength, antifouling and performance properties	Shathani Nkhwa Designing affordable biomaterials for the developing world	Kwadwo Osseo-Asare Effect of lignin-degrading enzymes on the decomposition of large aromatic hydrocarbons: Coronene as a surrogate for powdered activated carbon	Francis Barchi Scientific integrity in 21st century Africa: The case for responsible conduct of research training in materials science education
1450-1510	Montse Galceran Insights into the development of advanced electrode materials for rechargeable sodium ion batteries	Patrizio Antici Laser-Generated Proton Beams for High-Precision Ultra-Fast Crystal Synthesis	Nomcebo H. Mthombeni Adsorptive removal of Cr(VI) and V(V) ions using clinoptilolite modified with polypyrrole and iron oxide nanoparticles	Abram Madiehe Selective induction of cell death (apoptosis) using multifunctional gold nanoparticles	David O Afoloyan Safe Mining Strategies to Reduce Hazards Associated with Artisanal Mining in Nigeria	Ganpati Ramanath A perspective on the role of key collaborations in creating new directions in nanomaterials and interface science
1510-1530	David Doodoo-Arhin Graphene based inkjet-printable electrodes for Dye sensitized solar	Ayodele Odo Improved electrical conductance through direct assembly of	Joe Modise The use of NF membranes for rejection of nickel (Ni), copper (Cu) and palladium	Chukwuemeka Joseph Ani Numerical modeling of laser heating of	Ambasi Wenbarray Synthesis of a Nanocomposite Liner Material for Mineral Processing Size Reduction	Elizabeth Dickey Integrating Data Sciences into Materials Science and Engineering Graduate Education

	cells	colloidal silicon nanoparticles using electrophoresis	(Pd): A hope for mine effluent treatment	hydrogel/gold nanoparticles composites for localized hyperthermia	Equipment	
1530-1545	Bhekumusa Mathe Elastic Properties of Strontium difluoride single crystal by means of Brillouin Scattering	Eubert Mahofa Catalytic soot oxidation using ceria and copper nanocomposites	Kwena D. Modibane Syntheses of metal organic framework composites for removal of nitrophenol in wastewater and electrocatalytic hydrogen evolution reaction	Tintswalo Mgwanya Metal Oxide-Carbonaceous-Polymer nanocomposite based sensors for the detection of lung cancer volatile organic compounds Biomarkers	Ayeni Olugbenga Geopolymers as potential sustainable materials for the construction industry	Inonge Tracy Chibua SEANAC
1545-1600 Tea						
Breakaway sessions x6						
	<i>Chair: Sean Hearne</i>	<i>Chair: Katherine Jungjohann</i>	<i>Chair: Benjamin Hsiao</i>	<i>Chair: Christian Lorenz</i>	<i>Chair: Joseph Ramotshabi</i>	<i>Chair: Revocatus Machunda</i>
	Energy Okavango 1	Nanotechnology Okavango 2	Water Moremi	Computational Serondela 1&2	Mining Serondela 2&3	Education Tsodilo 2
1600-1630	Abdulhakeem Bello Voltage holding a reliable technique for evaluating the cycling performance of supercapacitors in aqueous electrolyte Ahmed Ridwan Adesoye Characterization of Nanocomposite Polymer Electrolyte for Solid State Electrochemical Application	Simon Billinge How to get the structure of nanomaterials: In the US and in Africa	Sabelo Mhlanga Synthesis of hybrid nanostructured membranes for use in water purification	Phuti Ngoepe Simulated synthesis and characterisation of metal oxide nano-architectures	Francis P. Gudyanga Translating Africa's comparative advantages in minerals into competitive advantages in materials	Solomon Assefa Recent scientific & technological advances: Potential implications for the African continent
1630-1645	Nutifafa Y. Doumon Photostability of polymer-fullerene and polymer-non-fullerene solar cells: the effect of UV on the material chemical structure and on DIO in the active layer	Boitumelo J. Matsoso The effect of N-configurations on the detection of dopamine at N-doped graphene-modified ITO electrodes	Lutendo E. Macevele Investigation of Antibacterial and Fouling Resistance of Silver and Multi-Walled Carbon Nanotubes Doped Poly(Vinylidene Fluoride-co-Hexafluoropropylene) Composite Membrane	Godfrey Mulaudzi Computational modelling study of pyrite surfaces and adsorption of xanthates, dithiophosphates and dithiophosphate onto pyrite	Joe Zimba “Value Addition...Some Thoughts...”	Margaret-Anne Mazzi Wampamba International-related activities and funding
1645-1700		Itani G. Madiba Deep-space radiations like hardness of VO₂ based active smart radiation device for nano-satellites	Eugene Mosikatsi Preparation of hyperbranched polyethyleneimine(HPEI)-cysteamine intergrated thin film composite membranes	Mulatedzi Gandampifa Computational study of anatase TiO₂ nanotube as an anode material for lithium ion batteries	Cyprian Moyo Development of palladium selective reagents and materials	Musa Muawiyya Modibbo Aiding learning process and creating a collaborative network in materials science through the use of mobile and web based platform

		applications	for heavy metal removal			
1700-1715	Sarah Holliday Improving the Photooxidative Stability of Organic Photovoltaic Technologies	Hamza Mohamed Green Synthesis of BiVO₄ Nanorods Via Aqueous Extracts of Callistemon viminalis and its photocatalysts application.	Agatha W. Wagutu Crustacean derived biocomposite for decontamination of drinking water in northern Tanzania	Lethole Ndanduleni Computational Studies of NaMn₂O₄ and MgMn₂O₄ polymorphs	Tatenda Madzokere Adsorptive Recovery of Auro-Dicyanide Anions from Aqueous Solutions using Activated Carbon-Magnesium Oxide (C-MgO) Nanocomposite as Adsorbent	Sean Hearne Scientific User Facilities Role in Education
1715-1730	Richard Kethwaafetse Comparative performance of non-conventional Ga_{1-x}In_xN_yAs_{1-x} sub-junction for tandem solar cells	Moletlanty Tshipa Tuning spherical nanostructures through spatially dependent electric confining potentials	Anthony Muliwa Adsorption behaviour of mercury from aqueous solution using polymer/carbon nanocomposite	Chukwuka N. Ojiugwo Spiking neural network architecture development towards the design of a scalable neuro-inspired system for complex cognition applications	David Konadu Solidification cracking susceptibility of type AISI 430, 436, and 439 ferritic stainless steels	
1730-1930	Poster session					

TUESDAY December 12th

0700-0800 Registration

Tsodilo 1

0800-0845 **2nd Plenary Tobin Jay Marks “Hybrid Organic/Inorganic Materials Design For Flexible Electronics and Solar Cells”**

Chair: Neil Coville

Breakaway sessions x7

	<i>Chair: Federico Rosei</i>	<i>Chair: Robert Tshikhudo</i>	<i>Chair: Habauka Kwaambwa</i>	<i>Chair: Luisa Torsi</i>	<i>Chair: Said Kenai</i>	<i>Chair: Phuti Ngoepe</i>	<i>Chair: John Paul Eneku</i>
	Energy Okavango 1	Nanotechnology Okavango 2	Water Serondela 1&2	Health Serondela 3&4	Construction Tsodilo 3	Computational Tsodilo 1	Education Tsodilo 2
0850-0920	Boateng Onwona-Agyeman Porous Structured Wide Bandgap Semiconductors and Light Harvesting Materials for Solar Cell Applications	Neerish Revaprasadu Delivering Interesting Functional Materials at the Nanoscale using Simple Chemistry	Soo Wahn Lee Visible-light-induced BiVO₄ semiconductors for efficient wastewater treatment	Patrick Sharrock Emerging biomaterials for complex applications in medical surgery	Yunus Ballim Minimizing the risk of thermally induced cracking in mass concrete structures through suitable materials selection	Caroline R. Kwawu Computational Studies on Transition Metal Catalysts for CO₂ Conversion to Hydrocarbon Fuels	Clive Randall The Early Days of Cold Sintering: Where We Are, Where We Are Going, and Our Dreams
0920-0940	Joelle Margot Plasma patterning of advanced material: achievement and application to photonics	Krish Bharuth-Ram Search for magnetic nanocluster formation of TM ions embedded in metal oxides	Vusumzi Pakade Novel Macadamia nutshell powder grafted with 1,5-diphenyl-carbazide for enhanced removal of Cr(VI) from aqueous solution	Previn Naicker Quantitative analysis of Foot-and-mouth disease virus-host interactions using a stable isotope labelling proteomics workflow	Mike Otieno Effect of concrete quality on the sensitivity of the chloride conductivity test to salt concentration and capillary voltage	Reheman Ndeda Determination of effective properties of granite rock: A numerical investigation	Birgit Schwenzer Educating the next generation of materials scientists is more than just a side note to the National Science Foundation's Division of Materials Research
0940-1000	Geneve Tessema Mola Highly environmentally stable inverted thin film organic solar cells using tri-metallic nanocomposites	David Dodoo-Arhin Synthesis, Characterization and Applications of Nanostructured Copper Oxide.	Amanda Corcos Precisely designed polymer membranes for use in water purification and desalination	Martin Thuo Functional Materials through Surface and Interface Engineering	Victor A. Atiemo-Obeng Technologies for sustainable roads infrastructure development	Yohanna Jacob Baro Structural Properties and The Liquid-Liquid Phase transition of Elemental Phosphorus	Stanley Meiburg Training the Next Generation of Leaders: Graduate Education in Sustainability
1000-1020	Michael Feser The Lyncean Compact Light Source: A Miniature Synchrotron for your Laboratory	Aboubaker Chedikh Beye Designs, Simulation and Integration of negative-permeability meta-material based new	David E. Delgado Charged Polymer Complexes for Membrane Applications	Kasinathan Kaviyarasu Antiproliferative effects on human lung cell lines A549 activity of cadmium selenide	Philbert Nshimiyimana Compressive strength of compressed earth blocks stabilized with calcium carbide residue and rice husk ash.	Gloria Murila Simulation of gravimetric capacity, structural and electronic properties of vanadium disulphide	Boppanna V Chowdari Advanced Materials for Sustainable Development

		Ultra Large Band (ULB) antennas with rejected bands		nanoparticles extracted from cytotoxic effects: Investigation of bio-electronic application			
1020-1035 Tea							
Breakaway sessions x7							
	<i>Chair: Sossina Haile</i>	<i>Chair: Werner van Zyl</i>	<i>Chair: Joe Modise</i>	<i>Chair: : Nicholas Spencer</i>	<i>Chair: Yunus Ballim</i>	<i>Chair: Krish Bharuth-Ram</i>	<i>Chair: Margaret-Anne Wampamba</i>
	Energy Okavango 1	Nanotechnology Okavango 2	Water Serondela 1&2	Health Serondela 3&4	Construction Tsodilo 3	Nanotechnology Tsodilo 1	Education Tsodilo 2
1040-1110	Mohamed Henini Development of Advanced Semiconductor Materials and Devices For Next Generation Photovoltaics: Opportunities And Challenges	Neil Coville Measuring spillover effects using nanoreactors	Habauka M. Kwaambwa From curiosity-driven basic research to new insights and improved applications of moringa in water treatment and materials research	Richard Marlink The Importance of HIV and TB Genetic Amplification in the Scaling Up of National AIDS and TB Treatment Programs in Africa	Said Kenai Performance of Cement Mortar with waste ground clay brick	Mahmud Maryam Abdulrahman Mechanical Properties of Metal Organic Frameworks (MOFs) and their Emerging Applications	Federico Rosei Mentorship for Young Scientists: Developing Scientific Survival Skills
1110-1130	Mohamed Chaker Pulsed Laser Deposition of metal-insulator transition materials	Tariro Tecla Manhongo Preparation of nano-sized high purity graphite from Zimbabwean flotation concentrates	Kate Kotlhao Enhancing the photocatalytic degradation of selected chlorophenols using Ag/ZnO nanocomposites	Thywill Dzogbewu In-situ alloying elemental powders for biomedical applications using laser powder bed fusion	Samuel Ibekwe Influence of Laser Processing Parameters on the Surface Quality of 316L Stainless Steel Manufactured Components by Selective Laser Melting (SLM)	Rebecca T. Papane Synthesis of ZnS nanoparticles from Zn(II) dithiocarbamate complexes, and a study of the effect of growth time on particles sizes	Kwadwo Osseo-Asare Mother is Gold: Experiments in Teaching and Learning Materials Science and Engineering with African Proverbs
1130-1150	David G. Billing Structure Property correlation in SOFC & SOEC materials	Werner E. van Zyl Nanocellulose in Catalytic and sensor applications	Phumelele Kleyi Quaternary imidazolium-modified montmorillonite clay for disinfection of water	Adebayo Oluseun Adeniyi Molecular Dynamics Simulations of the Interaction of Cisplatin with DNA, RNA and Proteins	Esther Obonyo Leveraging People, Process, and Data to Advance the Large-scale Deployment of Sustainable Structural Materials	Sachin Shaw Influence slip and convective boundary condition on MHD 3D stretched flow of nanofluid through porous media inspired by non-linear thermal	Nava Setter Enabling Science Learning in Tanzanian Rural High Schools: A collaborative project of Tanzanian and Swiss Materials Engineers and

						radiation	Educators (2009-2016)
1150-1210	Gunnar Westin Complex composition and structure materials by solution chemistry	Venkataraman Vishwanathan Synthesis, Characterisation and Reactivity of Nano Au/SBA-15 catalysts for Vapour Phase Aerobic Oxidation of Benzyl Alcohol	Lebea Nthunya Green synthesis of PVDF nanofibres decorated with biocidal Ag nanoparticles	Charnay Cunningham The radiosensitization effects of gold nanoparticles in proton therapy	Sunday Nwaubani Addressing Africa's development challenges through use of waste materials in concrete	Genu Aurelia Radionuclide liquid wastes treatment of ⁶⁸Ge by graphene-based nanomaterials	Pushpendra K Jain To achieve research excellence in Africa through networking and collaboration: Lessons learnt from the African Materials Science and Engineering Network
1210-1230	Stephen S. Nyandoro Synthesis of functionalized mesoporous silica materials templated by castor oil towards biodiesel synthesis	George Bepete Surfactant-free, aqueous dispersions of carbon nanomaterials	Joy G. Mokone Biosorption of Hg²⁺ from aqueous solutions by <i>Cladophora sp</i> alga immobilized in calcium alginate beads: a continuous flow study	Carlos Silva Photophysics of Excited-State Dynamics in Conjugated Polymers and Polyelectrolytes for Biological Applications	Ndebombuya Mokaloba Exploration of local Cellulosic fibers, Modification and potential use for the local Industry	Delight Mutonhori Design of a process to produce 428L/day of silver nanoparticle infused antimicrobial paint	Josephine P Ouma Building Research, Agribusiness and Innovation Capacities of HEI's in Agriculture through Regional Partnerships
1230-1250	Griffin Ruehl Phenol and Benzaldehyde Hydrogenation on Metallic Catalysts: Model Compounds for Biomass Conversion	Makhangela Mbambo Deep space radiations-like induced defects in selected smart nano-scaled carbon based materials		Chukwudalu C Nwazojie Preparation and Characterization of Chitosan-Ascorbic Acid Complex Microspheres with Encapsulated Prodigiosin for Localized Drug Release in Breast Cancer Treatment	Henda Uananisa The relationships between grain orientation, deformation-induced surface roughness and taylor factor in an AISI 436 ferritic stainless steel	Oluwagbenga Fatile Co-precipitation synthesis of zinc oxide nano-particles in fermented palm-wine for various applications	Wilbert Mtangi Towards Industrialization Through Value Addition
1250-1400 Lunch							
<i>Breakaway sessions x7</i>							
	<i>Chair: David G. Billing</i>	<i>Chair: Makwena Moloto</i>	<i>Chair: Soo Wahn Lee</i>	<i>Chair: Cho Nam-Joon</i>	<i>Chair: Guisepppe Pellicane</i>	<i>Chair: Mohamed Henini</i>	<i>Chair: Kwadwo Osseo-Asare</i>
	Energy Okavango 1	Nanotechnology Okavango 2	Water Serondela 1&2	Health Serondela 3&4	Computational Tsodilo 3	Energy Tsodilo 1	Education Tsodilo 2
1400-1430	Kenneth Ozoemena Microwave and Fluorination Treatments for Enhanced	Balla D. Ngom Laser-Produced _{Sm}1-xNd_xNiO₃ Plasma Dynamic Through Langmuir	Dickson Andala Biopolymer Metal Oxide Nanocomposite for Fluoride and Arsenic	Nicholas Spencer Imitating Cartilage with Polymers	Christian Lorenz Investigation of the hydration and structure of model lipid membranes	Kamogelo Keboletse Investigating the Suitability of Morupule Coal for Coal Gasification	Olushola S. Odusanya STEM education at the Pan African Materials Institute (PAMI)

	Electrochemistry of P2-type $\text{Na}_{0.67}[\text{Mg}_{0.28}\text{Mn}_{0.72}]\text{O}_2$ Cathode Material for Sodium-ion Batteries	Probe and ICCD Imaging Combined Analysis and Their Correlations to Films Properties	removal from water: An Invention			Technology	
1430-1445	Iwnetim Iwnetu Abate Robust NaO_2 electrochemistry in aprotic Na-O_2 batteries employing ethereal electrolytes with a protic additive	Juliet Sackey Structural and Optical studies of the papilio crino Fabricius, 1792 wings	Acacia Leakey Thermodynamic Analysis of the Membrane Distillation System for Desalination of Brackish Water	Akeem Azeez Effect of Sintering Time on Mechanical Properties of Porous Ti-6Al-4V Implant	Peter O Egbele An ab initio molecular dynamics study of guest atom rattling in Binary type-I Sn clathrates	Musibau Francis Jimoh Effects of Bending and Stretching on Composite Organic-Inorganic Trihalide Perovskite Solar Cells	Paul Weiss Nanoscience, Nanotechnology, and Beyond
1445-1500	Loza F. Tadesse Biotemplating Pores with Size and Shape Diversity for Li-Oxygen Battery Cathodes	Aphiwe Matiwane Neutron Tunneling in Nano-Structured Systems: Isotopical Effect	David E. Vlotman Bimetallic Immobilized Hyperbranched Polymer embedded on a Polysulfone Membrane for removing Organic pollutants in water	Itisha Chummun Polysucrose-based scaffolds for tissue engineering applications	James Sifuna Pressure Tuning of Thermal Expansion in Cubic ScF_3: An Industrial Application for Sustainable Development	Vitalis Chioh Anye Nanomechanical and Morphological Characterization of solution-processed MoO_3 and MEH-PPV inter-layer for OLED applications	Birgit Schwenzer, Sean Hearne, Stan Meiburg, Margaret-Anne Wampamba, Pushpendra K. Jain, and Winston Ireeta Tumps "Panel discussion" Developing Resilient International Research Networks: Opportunities and Challenges
1500-1515	Benjamin Agyei-Tuffour Effects of Annealing and Pressure on the Grazing Incidence X-ray Scatterings of Conjugated Polymer blends used in Organic Solar Cells	Zamavezi Kweyama Green synthesis of Europium oxide Nanoparticles by Hibiscus sabdariffa flower extract: Main physical and optical properties	Sakhile T. Dube Hyperbranched polyethyleneimine-multi-walled carbon nanotubes (HPEI/MWCNTs) polyethersulfone (PES) membrane incorporated with Fe-Cu bimetallic nanoparticles for water treatment.	Nancy Sarpong Development of a nystatin-loaded micellar system for oral mucoadhesion	Godwin Kalu-Uka Adaptation of a Hybrid Automatic Process Control System for the Operationalization of Mineral Processing Plants, using the Barite Beneficiation Plant as a Case Study	Keketso Mosalagae Zinc Oxide nanorod structures grown by chemical bath deposition on a seed layer prepared by a successive ionic layer adsorption and reaction (SILAR) method	
1515-1530	Newton.R. Matandirotya The application of remote sensing techniques for energy conservation in low-income housing units.	Touria Khamliche Synthesis and thermal conductivity enhancement of silver nanowires dispersed ethylene glycol based nanofluid	Khathu A. Makhado Bio-adsorbent from avocado peel for removal of As^{3+} and Cd^{2+} from water	Tapiwa Manyarara Formulation and characterization of a paediatric nanoemulsion dosage form with modified oral drug delivery system for improved dissolution	Evans M. Benecha Tuning the magnetic and electronic properties of transition metal doped monolayer WS_2 by Fermi level engineering	Puleng Alina Molete Deposition of multilayered iron and nickel sulphide thin films	

				rate of nevirapine			
1530-1545	Robinson J. Musembi Characterization of PbSO Thin Films by ESCA Technique for Photovoltaic Application	Temesgen Kebede The Green Approach: Preparation and characterization of electrospun nanofiber from <i>Moringastenopetala</i> seed protein	Wondimagegne mamo Zeolites for the purification of water (removal of hardness and heavy metal specifically Cr and Pb)	Emmanuel Diabor The effect of cassava cellulose microfibre reinforcement on the mechanical, morphological and microstructural characteristics of three-dimensional gelatin composite scaffolds	Lawan Mukhtar Muhammad Study of energetics of lithium (Li) adsorption on different phases of manganese oxide (MnO₂) as cathode materials for supercapacitors and compute the electrochemical potential, relative stability and volume change upon insertion	Phindani Dube Photovoltaic properties of Cu_xAl_yS₂ thin films deposited by chemical-bath deposition	
1545-1600 Tea							
			<i>Breakaway sessions x7</i>				
	<i>Chair: Caren Billing</i>	<i>Chair: Simon Billing</i>	<i>Chair: Richard Moutloali</i>	<i>Chair: Martin Thuo</i>	<i>Chair: Ludovico Cademartiri</i>	<i>Chair: Balla Diop Ngom</i>	<i>Chair: Nava Setter</i>
	Energy Okavango 1	Nanotechnology Okavango 2	Water Serondela 1&2	Health Serondela 3&4	Agriculture Tsodilo 3	Nanotechnology Tsodilo 1	Education Tsodilo 2
1600-1630	Patrick Nonjola Quaternized PPO/PSF Anion Exchange Membranes doped with Nanoparticles for Fuel Cell Application	Robert Tshikhudo Industrial development of nano-enabled products and technologies: Challenges and Opportunities	Emilly A. Obuya The challenge of sustainable potable water supply: Consideration of novel and appropriate technologies	Archana Bhaw-Luximon Biopolymers in 2D, 2.5D and 3D scaffolds for tissue engineering	Jose Lagaron High Throughput Electrospinning/Electrospraying Applications of Interest in Food, Pharma, Biomedicine and Packaging	Gnanasekaran. Kavitha Enhanced antibacterial and Photocatalytic Activity for capping agent of Ni-doped ZnO nanoparticles star-like flower nanostructures	John Paul Eneku Building the SciBridge: Bringing together African and U.S. Scientists
1630-1645	Joshua K. Ngoret Degradation of Aluminide Thermal Barrier Coating (TBC) on Inconel 713 LC used for Compressor Turbines (CT) of Short-haul Aircrafts	Kateřina Rubáćková Nanospider™ needle-free electrospinning – the technology enabling nanofiber material integration into industrial end applications	Kebadiretse Lefatshe Potential Wastewater Purification Nanosystem Based On Renewable Polymers	Azeez Butali Reducing infant Mortality in Developing Countries Using mHealth: Help My Pikin App	Phepafatso K Tsae Target-Molecule-Triggered Release Technology for Smart Fertilizers	Adeleke Sufianu Structural and Magnetic Properties of Multiferroic Chromite Nanoparticle thin films and Core-shell particles	Guebre Tessema Funding for Tools for Materials Research at the National Science Foundation
1645-1700	James G. Mallett The Development of a CSP based Milk Pasteuriser for use in rural areas of South Africa	Alexandria Cruz Patterning and Substrate effects on Coercivity for Cobalt Ferrite and Nickel Ferrite	John T. Moima Poly(vinylidene fluoride) ultrafiltration membranes incorporating	Daramola, O. Bamidele Green synthesized silver nanoparticles for optical detection of <i>Escherichia coli</i>	Rabiul Hussain Controlled release of urea from chitosan microspheres prepared by emulsification and crosslinking method	Lawrence K. Dintle Dependence of structural and optoelectronic properties on thickness of γ-CuI	Nithaya Chetty African School on Electronic Structure Methods and Applications (ASESMA) -

			catalytic Metal Organic Frameworks for degradation of dyes in water			thin films deposited by vacuum thermal evaporation	Building African Networks for Computational Materials and Biological Sciences
1700-1715	Alex Hsain Reclaiming Ambient Energy for Portable Electronics: Reverse Electrowetting Energy Harvesting	Nyangasi Leah Preparation and Characterization of Pd modified TiO₂ nanofiber catalyst for carbon-carbon coupling Heck reaction	Benton Otieno Application of natural South African zeolite as catalyst and biomass support in an integrated photodegradation and anaerobic digestion of textile wastewater	Shingirayi Zengeni Development and Nano-optimization of <i>Burkea africana</i> (Mukarati) and <i>Zanthoxylum chalybeum</i> (Mukundanyoka) for the management of actinic keratosis	Mokgaotsa J. Mochane The effect of EG and its synergistic effect on the thermal conductivity, flammability and properties of Polybutylene succinate	Orebotse Joseph Botlhoko Immiscible Polylactide/Poly(ϵ-caprolactone)-Containing Graphite and Graphene Oxide Biocomposites: Comparative Study	Kudakwashe Mzembe Fostering an Entrepreneurial Mindset
1715-1730	Ruocun Wang Electrochemical Intercalation of Mg-Ion into Anhydrous and Hydrated WO₃ in Non-Aqueous Electrolytes	Kudakwashe T. Penyai Extraction of Nano Silica from Corn cobs: Waste to Value Addition Approach	Morlu G. F. Stevens Employing valorized waste remains for the effective removal of toxic ions from wastewater	James T.P. Matshwele Synthesis and characterization of ruthenium (II/III) polypyridyl complexes with anti-microbial properties	Humphrey Lumadede Scoping study on Kenyan food quality and safety and waste management	Lerato F.E. Machogo Structural influence of amine and thiol surfactants on AuSe synthesis	Nam Joon Cho Youth Science Laboratory Kits for Resource-Limited Settings
1730-1930			Poster session				

WEDNESDAY December 13th

0700-0800 Registration							
Tsodilo 1							
0800-0845 3rd Plenary Sossina Haile “Materials for Sustainable Energy”							
Chair: Kwadwo Osseo-Asare							
Breakaway sessions x6							
	Chair: Mmantsae Diale	Chair: Esmeralda Yitamben	Chair: Ange Nzihou	Chair: Archana Bhaw-Luximon	Chair: Nithaya Chetty	Chair: Joe Zimba	
	Energy Okavango 1	Nanotechnology Okavango 2	Agriculture Serondela 1&2	Health Serondela 3&4	Computational Moremi	Mining/Construction Tsodilo 1	Education Tsodilo 2
0850-0920	Francesca Iacopi 2D Materials grown on silicon as highly efficient electrodes for integrated energy storage	Laura Fabris Nonspherical Colloidal Nanoparticles for Broadband Plasmonics	Kofi Adu Conversion of Agricultural Waste Streams into Value Added Product	Naomi Matsuura Engineering Materials for Medical Imaging and Therapy	Giuseppe Pellicane Polymer topology in surface absorption of binary blends	Samuel Ibekwe Influence of Laser Processing Parameters on the Surface Quality of 316L Stainless Steel Manufactured Components by Selective Laser Melting (SLM)	Geraldine Richmond “COACH workshop” Selling Your Science: The Art of Effective Proposal Writing
0920-0940	Rasmita Barik Metal Organic Frameworks (MOF)-Derived Nano porous Carbon as Efficient Sulphur Host for Lithium–Sulphur Batteries	Fiorenzo Vetrone Rare earth doped nanoparticles and their applications	Luis Cabedo Fostering the usability of PHA to the biodegradable packaging sector	Iraneus Obioma Ogu Converging blockchain and next-generation artificial intelligence technologies to decentralize and accelerate biomedical research and healthcare	Mesfin Haile Mamme Numerical Insight on the Early Stage Growth of an Isolated Metal Nanoparticle	Killian Onwudiwe Effect of Particle Size of Pozzolanic Addition on the Properties of MgO-based Cement Ahmed Galmed Three Dimensional Characterization of Laser Ablation Craters Using High Resolution X-Ray Computed Tomography	
0940-1000	Stanford Mudono The effect of different raw materials and synthesis methodology on cycling performance of LiMn₂O₄ cathode at elevated temperature	Elsje Alessandra Quadrelli A new organometallic route for low temperature ALD of atomically-thin MOS₂ layers on 2D SiO₂/Si support	Jerome Claverie Micro-nanoencapsulated <i>Bacillus thuringiensis</i> with a pH triggered release mechanism for the efficient bioprotection of brassica crops	Elayaperumal Manikandan Graphene Oxide/ZnO for Antibacterial Cytotoxic Impact Against MCF-7, A549 and Hep2 Cells Comparative Studies: Bio-Medical Application	Andre Z Clayborne Atomistic insights into the Electrochemical Reduction of Carbon Dioxide on Transition Metal Clusters from First Principles Investigation	Ekwe Nneka Blessing Production and characterization of cellulose fibre cement composites Olanrewaju Yusuf Effect of cassava leaves carbon nitriding on barite mining tools	

1000-1020	Adeniyi S. Ogunlaja Adsorptive Desulfurization and Denitrogenation of Fuel over Imprinted Polymer Microspheres and Nanofibers	Rueben Pfukwa Investigating the anionic polymerization of aldehydes, promoted by strong organic bases	Tshwafo Motaung Corn Fibres-Polymer Composites	Terry Steele Laser curing of carbene-precursor bioadhesives	Kingsley Onyebuchi Obodo Effect of transition metals clusters on the electronic and magnetic properties of MoS₂	Maxwell Vhareta Micro-Raman and X-ray Diffraction stress analysis of residual stresses in fatigue loaded leached Polycrystalline Diamond discs	
1020-1035 Tea							
Breakaway sessions x6							
	<i>Chair: Bopanna Chowdari</i>	<i>Chair: Laura Fabris</i>	<i>Chair: Dickson Andala</i>	<i>Chair: Patrick Sharrock</i>	<i>Chair: Mesfin Tsige</i>		<i>Chair:</i>
	Energy Okavango 1	Nanotechnology Okavango 2	Water Serondela 1&2	Health Serondela 3&4	Computational Moremi		Education Tsodilo 2
1040-1110	Elsje Alessandra Quadrelli Surface Organometallic Chemistry on MOFs and inorganic oxides for CO₂ and N₂ reduction: <i>en route</i> to renewable energies storage	Makwena Moloto Metal and Semiconductor Nanoparticles and their Polymer Fibres	Patrick F. Mensah Development of a Laterite Composite for Removal of Fluoride from Borehole Water: Collaboration Research and Educational Experience	Cho Nam-Joon Engineering Approaches to Combat Infectious Diseases: An Example of Broad-Spectrum Antiviral Peptides	David Perry Application of Molecular Structure Methods to Materials Problems		Geraldine Richmond "COACH workshop" Publishing Research Results in Peer Reviewed Journals
1110-1130	Patrick Dedetemo Kimilita High discharge capacities of Ti-based quasicrystal electrodes synthesized by mechanical alloying	Force. T. Thema Nano ZnO doped graphite via Agathosma betulina natural extract with improved bandgap	Fulbert T. Kamba Downscaling the conventional iron barrier technology to safe drinking water	Diallo Abdou Karim Electrochemical field effect transistor for glucose detection	Eric Abavare First principle calculation of direct and indirect phase transition of the early transition metals carbonitrides: Ti, Zr and Hf		
1130-1150	Mmantsae Diale Catching the sun at low cost	Mike Masukume Nanomaterials Industrial Development Facility (NIDF): Crossing the innovation chasm	Francis W. Nyongesa Electrophoretic Deposition of TiO₂ Thin Films for Photocatalytic Degradation of Organic Pollutants in Water	Omolola E. Fayemi Electrochemical determination of serotonin in urine samples based on metal oxide nanoparticles / MWCNT on modified Glassy Carbon Electrode	Claire Saunders Anharmonic Phonons in Cuprite		

1150-1210	Innocent Nkurikiyimfura Long term stability of magnetite nanofluids for solar engineering applications	Malesela K. Moutlana Frequencies of a nano beam with Spring-mass Attachment, used for Tapping atomic force microscopy (TM-AFM) in tapping mode	John Mmbaga Design and fabrication of polymer layered silicate nanocomposites for water purification	Alain Ibanez Organic@silicate core-shell nanoparticles and garnet-type oxide nanocrystals as luminescent tracers for biophotonics	Mahmoud Mahmoud Effect of pressure on structural, mechanical, dynamical and electronic properties of ReSe2:A theoretical investigation		
1210-1230	Akito Takasaki Hydrogenation of Ti-based Quasicrystalline Powders Produced by Mechanical Alloying	Katherine L. Jungjohann An Initiation Mechanism of Corrosion in Low-Carbon Steel: Identified by In-Situ Transmission Electron Microscopy	Mary Taabu Simiyu Use of Diatomaceous Earth (DE) Wastes for Nano-Porous Composite Membranes in Water Purification Systems	Fulvio Ratto Complementary strategies to target the tumor microenvironment with gold nanorods	Tibebe Birhanu Stochastic resonance in a double well potential with non-homogeneous temperature of a semiconductor layer		Persuasive Scientific Presentations
1230-1245	Abu Yaya Development of electroporcelain insulators from local materials in Ghana	Cosmas Muiva Hydrothermal synthesis and gas sensing response of nanostructured La₂O₃-CuO-Co₃O₄ mixed oxides	Monaheng L. Masheane PES/quaternized-PES blend anion exchange membranes for use water purification: Investigation of the polymer compatibility and properties of the blend	Danyuo Yiporo Kinetics of Paclitaxel™ Release from Multi-Coated Metallic Stents: Solution to Coronary Cardiovascular Disease	Nura Ibrahim Investigation of two-dimensional (2D) graphene-like layers as potential safe anode material for Li-ion batteries		
1250-1400 Lunch							
1400-1800 Free afternoon/Tour of Gaborone							
1900-2200 Conference Dinner							

THURSDAY December 14th

0700-0800 Registration	
Tsodilo 1	

0800-0845 4 th Plenary Paul Weiss “Global Opportunities in Nanoscience and Nanotechnology”						
<i>Chair: Sossina Haile</i>						
Breakaway sessions x6						
	<i>Chair: David Billing</i>	<i>Chair: Don Okpala Uche</i>	<i>Chair: Habauka Kwaambwa</i>	<i>Chair: Martin Thuo</i>	<i>Chair: David Perry</i>	<i>Chair: Kevin Jones</i>
	Energy Okavango 1	Nanotechnology Okavango 2	Water Serondela 1&2	Health Serondela 3&4	Computational Moremi	Education Tsodilo 2
0850-0920	Veronica Augustyn The Role of Structural Water in Electrochemical Energy Storage of Tungsten Oxides	Nosipho Moloto Syntheses and characterization of 2D-layered metal chalcogenide nanocrystals for application in chemo-resistive sensors	Richard Moutloali Photodegradation of organic dyes using Cobalt-based metal organic framework (ZIF-67) catalysts supported on graphene oxide under simulated solar irradiation	Willie Du Preez Materials Research on Additive Manufacturing of Titanium Alloys for Medical Implants	Ismaila Dabo Large-scale simulations of solid-liquid interfaces under realistic electrochemical conditions for energy conversion and storage	Budzanani Tacheba Facilitating Industry Driven Research and Innovation: a fully integrated systems approach
0920-0940	Chris Nicklin Synchrotron Radiation Grazing Incidence Wide Angle X-ray Scattering Studies of Photovoltaic and Battery Materials	Esmeralda Yitamben Engineering Chiral Quantum Corrals on Surfaces	Mahadi Lesaoana Chemical Oxidation Of Macadamia Activated Carbon Through Impregnation By Inorganic Acids For Enhanced Cr(VI) Adsorption	Lucien E. Weiss Characterizing the Motions of Hedgehog-Signaling Proteins on the Surfaces of Live Cells by Single-Molecule Tracking	Nithaya Chetty Li states on a C-H vacancy in graphane: A first-principles study	Steven Mufamadi Lack of Entrepreneurship Skills as a Barrier to Nanotechnology Commercialization in Africa
0940-1000	Nithyadharseni Palaniyandy α-MnO₂/Onion Like Carbon (OLC) composite cathode material for aqueous Zn-ion battery	Stephen Majoni Interlayer Interaction dynamics: towards understanding controlled release in layered metal hydroxides	Ebenezer Annan Sustainable water treatment technology for rural/urban communities	Mamello Mohale Developing FRET assays to study the binding of Fibroblast growth factor to its receptor	Nicola Seriani Ab-initio simulations of photocatalysts for hydrogen production	Winston Ireeta Tumps Materials science research in Uganda
1000-1020	Sossina Haile Fundamental and High Throughput Advances in Electrochemical Energy Technologies	Richard KK Mbaya Modern synthesis of metallic nanoparticles production	Semakaleng Kganyago Effect of the cobalt oxide nanoparticles size on the fenton catalytic activity	Colette Robinson Water Solubilization of CuInS₂/ZnS QDs and their Bioconjugation to Fibroblast Growth Factor for In-vitro Imaging	Richard Tia A Density Functional Theory Investigation of Hydrogen Adsorption on the LaFeO₃(010) Surface for Use in Nickel-metal Hydride Batteries	Francesca Iacopi R&D in Semiconductor Industry: from Materials to Microchips
1020-1035 Tea						
<i>Breakaway sessions x6</i>						

	<i>Chair: Elsje Alessandra Quadrelli</i>	<i>Chair: Fiorenzo Vetrone</i>	<i>Chair: Emily Obuya</i>	<i>Chair: Jose Lagaron</i>	<i>Chair: Ismaila Dabo</i>	<i>Chair: Stanley Meiburg</i>
	Energy Okavango 1	Nanotechnology Okavango 2	Water Serondela 1	Agriculture Serondela 3&4	Computational Moremi	Education Tsodilo 2
1040-1110	Sean Hearne Energy Storage for the Electric Grid – MegaWatts from picoWatts	Geraldine Richmond Mulling over Emulsions: Molecular Assembly at Nano emulsion Surfaces	Immaculate L.A. Ouma Optimization of magnetite nanoparticle and pine cone based nanocomposite synthesis for water treatment	Ange Nzihou Biowaste as a source for nutrients, micro-elements and sustainable fertilizers (biofertilizers)	Thomas Schulthess Dusk of Moore's Law: opportunities for HPC and materials science	Phillip Rodenbough Learning Chemistry on Computers in African Contexts
1110-1130	Jerome Claverie Novel photocatalytic materials for hydrogen production	Elayaperumal Manikandan Structural Optical Electrical Studies of ZnO/SnO₂ core-shell structure nanocomposites formation: Field-Emission Enhancement and Sensor	Paul N. Diagboya Adsorptive removal of toxic organic and inorganic cations from solution using novel facile magneto-carbon black-clay composite adsorbent	Yuki Hasegawa Novel Agriculture Support System Using Plant Bioelectric Potential and Gas Sensor Response	Mesfin Tsige Effect of Confinement on the Structure and Dynamics of Hydrogen Bonding: Role of the Instantaneous Surface	Elizabeth Melenbrink Promoting Interests in Energy Research: Developing a Low Cost Potentiostat for African Universities as Teaching Tool
1130-1150	Riad Nechache Perovskites for efficient hybrid optoelectronic devices	Uche E. Ikhuoria Synthesis and characterization of nanomagnetite by thermal decomposition	Mahmud A. Maryam Modeling and Simulation of the Adsorption Process of Fluoride to the Surface of Porous Clay-Hydroxyapatite Filter	Lorenzo Pastrana Bio-based nanostructures for food applications	Mofuti Mehlape Molecular dynamics simulations of the structural and dynamic properties of Pyrite (FeS₂) nanoparticles	Maxwell Terban Generating partnership for collaborative research: synchrotron light source data for African materials science
1150-1210	Caren Billing Questions around Electrochemical Impedance Studies of Pelletized Materials	Don Okpala Uche Nano technology applications, solution to mitigating global climate change in this present time	Luthando Nyaba Application of magnetic Fe₃O₄@Mg/Al- layered double hydroxide (LDH) nanocomposite as an adsorbent for ultrasound assisted solid phase microextraction of trace metals in water matrices	Levison T. Murombo Synthesis of a Chitosan Nano Polymeric Slow Releasing Fertilizer: A Novel Approach of Improving Agricultural Productivity	Noeliarinala.F. Andriambelaza First-principles studies of chromium line-ordered alloys in a molybdenum disulfide monolayer	Jill Wenderott Implementation of professional and academic development camp for Liberian women undergraduate engineers at the University of Liberia
1210-1230	Fabian I. Ezema Electrochemical properties and Effect of Deposition Cycles on the Properties of SILAR deposited Cobalt Sulphide thin films	Nolufundo Sintwa Factors affecting structural and optical properties of biosynthesized ZnO nanoparticles		Ludovico Cademartiri "Programmable" Ecosystems: Engineered Environments for the Study of Plant Environment Interactions		Alex Hsain Fostering Renewable Energy Research Collaboration between U.S. and African Universities through SciBridge

1230-1245	Emeka E. Oguzie Natural products for materials protection					Panel discussion JUAMI next steps
1250-1400 Lunch						
Tsodilo 1						
1400-1445 Closing Plenary Nelson Torto “A fantastic personal Materials story”						
<i>Chair: Geraldine Richmond</i>						
1445-1545 Closing session/Future planning						
1545-1730 Executive meeting						