



SAIP 2021

South African Institute
of Physics Conference



22 - 30 JULY 2021 • NORTH-WEST UNIVERSITY

VIRTUAL CONFERENCE

Below is the list of the presentations and poster of the SAIP 2021 conference. Click on the title to follow the link, or read about the talks in the [Book of Abstracts SAIP 2021](#)

ID	SPEAKER	TITLE
22	Niel Malan	A thermo-effusion pump for air sampling: theoretical considerations.
36	Mpho Gift Doctor Gololo	The development of a real-time Monitoring system for the ATLAS Tile Calorimeter Phase-II Upgrades
50	Humphry Tlou	Integration of the ALTI module in the ATLAS Tile Calorimeter system
53	Edward Nkadimeng	Quality control software development for testing the next generation of upgraded low voltage power supplies for the ATLAS Tile Calorimeter
55	Nkosiphendule Njara	Programming the load readout board micro-controllers used in the development of a Burn-In test bench for the ATLAS TileCal Phase-II Upgrade

58	Thabo Lepota	The characterization and functionality of the interface boards used on the burn-in test station for the ATLAS Tile Calorimeter Low Voltage Power Supplies phase II upgrade
61	Gaogalalwe Mokgatitswane	The replacement and refurbishment of Gap Scintillator Counters for the ATLAS Tile Calorimeter Phase-I Upgrade
63	Ryan Mckenzie	A Burn-in test station for the ATLAS Phase-II Tile-calorimeter low-voltage power supply transformer-coupled buck converters
78	Othmane Mouane	Heat Transfer Improvement of a Thermal Interface Material for Heat Sink Applications Using Carbon Nanomaterials
95	Chloé Sole	Development of a digital data acquisition system for neutron metrology
98	Paul Stanswag	The Physics of Vacuum Arc Propulsion Systems
99	Ameerah Camroodien	Development of ¹⁸F Radiochemistry for Positron Emission Particle Tracking (PEPT)
116	Hartmut Winkler	Solar irradiance in Gauteng during the 2020 COVID-19 lock-down – can we detect decreased aerosol loading?
121	Lehlohonolo Lisema	Glancing Incidence X-ray Diffraction (GIXRD) analysis of induced nanocrystalline boron nitride (BN) on ion-implanted poly-crystalline hexagonal BN.
122	Betty Kibirige	A Zinc Oxide(ZnO) Gas Sensor Approach To Measure Oxidizing Gases
124	Betty Kibirige	ENHANCING ZINC OXIDE GAS SENSING DEVICE FOR MICRO-CRONROLLER APPLICATION
136	Molebogeng Mothupi	A review of solar food dryers with thermal energy storage.

138 Masodi Ramokali [A REVIEW ON MODELLING OF SOLAR FOOD DRYERS WITH THERMAL ENERGY STORAGE](#)

139 Adiel Holtzhausen [Influence of coating techniques on the structural and optical properties of \$\alpha\$ -Fe₂O₃ nanostructures](#)

146 Michael van Heerden [Density modified tracer particles for Positron Emission Particle Tracking \(PEPT\)](#)

147 Siphesihle Mnguni [Seed-Mediated synthesis and application of Gold nanorods in Organic Solar Cells](#)

152 Fortunate Elegbeleye [Effect of methoxy functionalized group on the photocatalytic properties of diphenylaniline organic Chromophores](#)

153 Tlangelani Ngunyulu [Structural and optical properties of shape-dependent gold nanoparticles](#)

155 Mano Mosalakgotla [Optimization of processing parameters of dip coated CuO films for photoelectrochemical water-splitting](#)

156 Sizwe Mhlongo [A new instrumental activation analysis facility at UCT](#)

174 Robert van der Merwe [Enhancing PEPT: high fidelity analysis with augmented detection](#)

179 phil ferrer [In situ test results for a cavity solar receiver](#)

188 Maheen Parbhoo [Plasma Diagnostics of Miniaturised DC Glow Discharge Thruster Concept](#)

193 Monphias Vumbugwa [Effects of partial soiling on Thermal Infrared imaging of crystalline PV modules](#)

201	Thomas Leadbeater	Spatial resolution in positron emission particle tracking (PEPT)
205	Ross Dix-Peek	Injection dependent dark IR imaging of PV modules as an alternative to EL imaging for individual cell characterisation
214	Roelof Roodt	Performance analysis of thin-film Photovoltaic (PV) technologies in an embedded generation network
220	Lutendo Phuthu	Computational study of electronic and optical properties of graphene/brookite (210) composite
224	William Pooe	Effects of deposition cycle and heating rate on the structural, optical and photocatalytic properties of electrodeposited hematite films
233	Trevor Derry	Modulating properties of solid carbon nanospheres via ion implantation with heteroatoms.
245	Keshaan Singh	Birefringence from digital phase-shifting measurements
248	Isaac Nape	Characterising laser beams through turbulence using vector beams and a simple quantum trick
264	Cambel Thaba	High resolution Laplace deep-level transient spectroscopy characterization of radiation induced defects in germanium.
267	Antoine-Floribert MULABA-BAFUBIANDI	Kinetics study of thiosulphate gold dissolution from primary leaching precipitates of refractory gold ores
281	Gideon Bentum	NUCLEAR-MEDICAL TECHNIQUES IN 4IR DIAMOND MINING
282	Sibusisiwe Mzamo	Growth and characterization of CZTS and CZTSSe for solar cell application

287 Tshifhiwa Steven Ranwaha [Density functional theory study of Ni doped NaMnO₂ cathode material](#)

316 Ashmore Mawire [An experimental study of a combined solar cooking and thermal energy storage system for domestic applications](#)

318 Gideon Chinamatira [COMPUTED TOMOGRAPHY RECONSTRUCTION FOR THE REDUCTION OF THE EFFECTS OF METALLIC INCLUSIONS](#)

386 SEIFERT, Gotthard [Carbon Nanostructures beyond Graphene.](#)

