SAIP2016

Wednesday 06 July 2016

Poster Session (2): Photonics; Astrophysics; Space Science; Applied Physics; Theoretical and Computational Physics

(16:10-18:00)

-Conveners: Kristian Müller-Nedebock; Ernest van Dyk; John Bosco Habarulema; Christian Engelbrecht; Erich Rohwer

[id] title	presenter	board
[5] Creation and detection of vector Bessel beams using digital axicons	Mr IDISI, David Omoefe	C.005
[38] Measurements of the hyperfine and weak field Zeeman spectra of Rb 85 and Rb 87	Mr WYNGAARD, Adrian	C.038
[52] Nonlinear optical processes and saturated absorption spectroscopy in two and multi-level atoms: a theoretical and numerical study	Ms PATEL, Meena	C.052
[83] The design of a cost effective high precision time measurement unit for use in a Hanbury-Brown Twiss interferometer	Mr JAMES, Stubb	C.083
[102] Characterization of a Q-Plate in terms of Hyper-Geometric Gaussian modes	Ms SEPHTON, Bereneice	C.102
[175] Generating Arbitrary Optical Vector Beams	Mr COX, Mitchell	C.175
[184] Applying the technique of Ultrafast Pump-Probe spectroscopy on the main plant light-harvesting complex of spinach leaves	Ms SINGH, Asmita	C.184
[251] Low cost passively Q-switched laser	Mr MADLALA, Bigboy	C.251
[263] The Wigner distribution function in modal characterisation	Mr MREDLANA, Prince	C.263
[283] The effect of low level laser therapy on both HIV infected and uninfected TZM-bl cells	Ms LUGONGOLO, Masixole	C.283
[371] Classical light simulations of quantum measurements	Mr BERRY, Gareth	C.371
[383] Free-space data transfer using the spatial modes of light	Mr GAILELE, Lucas	C.383
[441] Digitally transforming high-order mode to a high brightness beam	Mr NGCOBO, Sandile	C.441
[454] Determination of thin silicon sample thicknesses using linear and nonlinear optical methods	Mr NDEBEKA, Wilfrid	C.454
[461] Digital laser mode amplification using ND: YAG amplifier	Mr BELL, Teboho	C.461
[474] Development of non-linear microscopy infrastructure	Ms ERASMUS, Anneke Mr DWAPANYIN, George Mr VILJOEN, Ruan	C.474
[479] RF Generation for Ion Trapping Experiments	Mr MATJELO, Naleli	C.479
[15] Analysis of the rich optical iron-line spectrum of the x-ray variable I Zw 1 AGN 1H0707-495	Prof. WINKLER, Hartmut	D1.015
[53] Outreach and Education with the Virtual Observatory	Dr EL BOUCHEFRY, Khadija	D1.053
[154] Multi-wavelength variability and optical identification of a selection of supersoft X-ray sources	Ms NYAMAI, Miriam Mumbua	D1.154
[204] Gas Accretion and Triggering in NGC 3998	Dr FRANK, Bradley	D1.204

[275] Emission modelling of numerical hydrodynamical simulations with application to Active Galactic Nuclei jets	Mr VAN DER WESTHUIZEN, Izak	D1.275
[280] New Calibration Sources for Very Long Baseline Interferometry at 1.6 GHz	Mr HAILEMARIAM, Mekuanint Kifle	D1.280
[320] Finding the needle in Galaxy Evolution: HI Stacking	Ms HEALY, Julia	D1.320
[334] Observing 5 MHONGOOSE galaxies with the KAT-7	Mr SORGHO, Amidou	D1.334
[358] Long-term monitoring of TeV Blazars with the Watcher Robotic Telescope	Mr MARAIS, Johannes Petrus	D1.358
[366] Studying the thermal history of the intergalactic medium with the redshifted 21-cm line	Ms KLUTSE, Diana	D1.366
[391] Calibration of a statistical method used to constrain pulsar geometries via light curve modelling	Mr BEZUIDENHOUT, Tiaan	D1.391
[406] Ultrahigh-energy neutrino events in current and future neutrino telescopes from nearby Gamma-Ray Bursts	Dr MOHARANA, REETANJALI	D1.406
[423] Follow up studies on delta Schuti star: HD 75656	Ms BUTTON, Charissa Ms MRWETYANA, Nosicelo	D1.423
[484] Nature of forces acting on the terrestrial globe	Dr DJIEDEU, Nicodeme	D1.484
[490] Isotropic energy and luminosity correlations with spectral peak energy for five long GRBs	Mr DIRIRSA, Feraol F.	D1.490
[503] The Sub-millimeter Continuum Emission of Selected Nearby Active Galaxies	Prof. LEEUW, Lerothodi	D1.503
[507] Optical Spectra of Herschel Gravitational Lenses and their Astrophysical Implications	Prof. LEEUW, Lerothodi	D1.507
[10] Geomagnetic derivation of current strengths and electric fields of three current systems in the ionosphere and magnetosphere.	Dr DE VILLIERS, Jean	D2.010
[216] Computerised Ionospheric Tomography (CIT) for supportive GNSS-derived ionospheric applications	Mr ANSARI, Ahsan	D2.216
[217] SQUID Magnetometer Filter Design and Data Analysis	Ms AVERY, Megan	D2.217
[218] Ionospheric Scintillation Proxies derived from geodetic GPS receiver data	Mr AZZOPARDI, Nick	D2.218
[219] HF Propagation Systems for African communications	Ms LUCKEY, Clare	D2.219
[220] Calculation of air density through measurements of falling spheres	Mr MCCAUGHNA, Andrew	D2.220
[221] Ionospheric Irregularities studies using GPS and radio astronomy interferometers	Mr VARGO, Eric	D2.221
[265] Surface Impedance Derived from the South African Magnetotelluric Network for the estimation of geomagnetically induced currents in the South African Power network	Dr CILLIERS, Pierre	D2.265
[363] Ionospheric characterisation of the South Atlantic Magnetic Anomaly using a ship-based dual-frequency GISTM receiver	Mrs VERMEULEN, Annelie	D2.363
[436] Modelling and testing the effects of space radiation on space borne electronic components	Ms SNELL, Holly	D2.436
[8] Modelling the Linke Turbidity for solar irradiance in South Africa	Mr NETHWADZI, LUTENDO CHRISTOPHER	F.008
[13] Structural and electrical properties of ruthenium thin films on 6H-SiC annealed in the air	Dr MUNTHALI, Kinnock Vundawaka	F.013
[24] Growing zirconium carbide (ZrC) layers by CVD using ZrCl4 mixed with CH4,Ar and H2	Mr ALAWAD, Bilal	F.024

[44] The effect of activated carbon on the CO sensing performance of NiO	Mr KHALEED, Abubakar	F.044
[48] Assessment of biomass torrefaction effect on gasification efficiency	Mr ANUKAM, Anthony	F.048
[70] Facile hydrothermal synthesis of Ni(OH)₂-graphene foam composite for supercapacitor application	Mr KHALEED, Abubakar	F.070
[78] Improving gas sensing properties of multi-walled carbon nanotubes by vanadium oxide encapsulation	Dr CHIMOWA, George	F.078
[79] Characterization and implications of Soot generated from Pinewood gasification	Mr MELAPI, Aviwe	F.079
[84] Characterization and Thermal Load Impact of Reflective Coatings on a Low Cost House in Alice, South Africa	Mr OVEREN, Ochuko Kelvin	F.084
[88] Dynamic Model to Evaluate the Performance of Residential Air Source Heat Pumps in South Africa	Mr NANA, YONGOUA	F.088
[89] Performance evaluation of a domestic split-type air conditioner in South Africa, a case study of ALICE	Ms BANTAN MAFOR, GLORY	F.089
[110] Synthesis of nanostructured molybdenum disulfide (MoS2) for photodegradation of organic dyes from aqueous solution	Mr MADIMA, Ntakadzeni	F.110
[114] The design and performance monitoring of fabricated Biogas Digester using plastic	Mr OBILEKE, KECHRIST	F.114
[117] Effect of annealing of P3HT:PCBM blend in the performance of organic solar cell devices	Mr OTIENO, Francis	F.117
[128] Metal Oxide N-doped CNTs decorated Gas sensors	Mr USMAN, Ibrahim B.	F.128
[150] Tin oxides nanostructures: Synthesis, characterization and their photocatalytic application.	Ms MALINDISA, RAMOKONE CHRISTINA	F.150
[151] Using Geant4 to create 3D maps of dosage received within a MinPET diamond sorting facility	Prof. CONNELL, Simon	F.151
[153] A genetic algorithm approach to enhancing the performance of a PET detector array	Prof. CONNELL, Simon	F.153
[168] Prediction of Coefficient of Performance of an Air Source Heat Pump Water Heater under Two Critical Operating Scenarios	Mr STEPHEN, Tangwe	F.168
[181] Effect of carbon doping on the structural, optical and electronic properties of zinc oxide nanoparticles synthesized by pneumatic spray pyrolysis technique.	Mr NTOZAKHE, Luyolo	F.181
[238] Air Source Heat Pump Water Heater: PID Controller Based Control System and Optimal Energy Management	Mr NANA, YO NGOUA	F.238
[241] Characterization and Compensation of Fibre Link Dispersion in a 10 Gb/s Flexible Network	Mr BOIYO, Duncan	F.241
[243] Advantages of Free Space Optics over Optical Fibre for Clock Tone Distribution in a 2.5 GHz Transmission Link	Mr LEBURU, Kagiso J	F.243
[254] Africhino Quasi-Computer	Mr NAIDOO, Kreason Aaron Ms RAMOHOEBA, Nonky	F.254
[256] DESIGN, MANUFACTURE AND PERFORMANCE EVALUATION OF A WASTE HEAT RECOVERY UNIT IN A GASIFICATION PLANT	Ms NWOKOLO, Nwabunwanne	F.256
[262] Development of Quantum Key Distribution System	Ms UMUHIRE, Marie Louise	F.262
[270] Performance evaluation of a direct expansion bulk milk cooler on a dairy farm in the Eastern Cape Province of South Africa	Mr MHUNDWA, Russel	F.270

[330] Materiallurgy of macadamia nut shell explained using its physical properties	Ms NICLETTE, Eloko	F.330
[336] Qualitative comparison of advanced characterisation techniques of Photovoltaic cells	Mr DIX-PEEK, Ross	F.336
[348] A high speed OCT system developed at the CSIR National Laser Centre	Mr SHARMA, Ameeth	F.348
[350] Physics of clayey soils to explain their geophagic, traditional pottery making and paints applications	Mrs MEGNE-TIEGUM-, Adeline	F.350
[390] A review on the benefits of Biogas Technology from the Renewable Energy, Environment and Agronomy perspectives	Prof. MAMPHWELI, SAMPSON	F.390
[428] A comparison of neutron energy distributions unfolding codes used with a NE213 detector	Dr HERBERT, Mark	F.428
[460] Surface Brillouin Scattering studies of Transition metal nitrides thin films deposited by RF Magnetron Sputtering	Mr KURIA, Jonah	F.460
[473] Long-term measurements of temperature of the fermenting slurry within the biogas digesters at Vele secondary school	Mr NEKHUBVI, Vhutshilo, M	F.473
[494] Second stage distribution of biogas to an area of application after the first stage distribution has reached the zero pressure as displayed on the gauge	Dr TINARWO, DAVID Mr NEKHUBVI, vhutshilo 1st mountaineer	F.494
[499] Photo-thermal degradation analysis of single junction amorphous silcion solar module EVA encapsulation	Mr OSAYEMWENRE, Gilbert	F.499
[504] Novel PET detector with high throughput electronics for Mineral-PET	Prof. CONNELL, Simon	F.504
[508] MCNPX based Radiation Shielding Analysis for the Mineral-PET Kimberlite Sorting Facility	Mr CHINAKA, Eric	F.508
[43] Enhanced properties of thermoelectric materials for technological applications	Dr MANYALI, George S.	G.043
[87] Stochastic differential equations as a powerful numerical tool	Dr STRAUSS, Du Toit	G.087
[140] Computational Model of solid-state lithium ion batteries	Mr JULE, Leta	G.140
[171] First-principles studies of transition metal defects in a molybdenum disulfide (MoS₂) monolayer	Ms ANDRIAMBELAZA, Noeliarinala Felana	G.171
[231] Dust heating by Alfvén waves using non-Maxwellian distribution function	Dr KIRAN, Zubia	G.231
[242] Driven non-equilibrium systems modeled with Markov processes	Mrs TSOBGNI NYAWO, Pelerine	G.242
[248] Multiparty Quantum State Sharing of an arbitrary unknown three particle state with GHZ state measurements	Mr SEKGA, COMFORT Dr MAFU, Mhlambululi	G.248
[261] Analytical Results for the Tsallis Thermodynamic Variables in a Hot and Dense System	Dr MOGLIACCI, Sylvain	G.261
[281] suitability of quadratic gauge for non-perturbative QCD	Mr RAVAL, Haresh	G.281
[289] Quantum state sharing of an arbitrary three particle state using Einstein-Podolsky-Rosen pairs and GHZ state measurements	Mr SEKGA, Comfort Dr MAFU, Mhlambululi	G.289
[308] Density Functional Theory on a Lattice: Self-consistence Hartree plus Exchange Approximation.	Mr AMOUZOUVI, Kossi	G.308
[343] Theory of fast ion transport on nanoscale and computer exploration	Dr DESPOTULI, Alexandr Prof. ANDREEVA, Alexandra	G.343
[346] Visualizing higher order Brillouin zones with applications	Dr SALAGARAM, Trisha	G.346
[360] Open Quantum System approach to spontaneous formation of prebiotic molecules in interstellar space.	Mr ELS, Paul	G.360

[377] An ab initio density functional theory study of structural, electronic, magnetic and optical properties of Niobium diphosphide (NbP2)	Mr RUGUT, Elkana	G.377
[483] Structural and dynamical properties of oxygen and cerium vacancies in cerium dioxide	Dr MOSUANG, Thuto	G.483