

PROGRAM: 8th ALC WORKSHOP 2015

Wednesday, 2 December

10:00 – 17:00 Arrive at Venue
19:30 – 22:00 Dinner (Manor House Restaurant)

Thursday, 3 December

07:00 – 08:00 Breakfast (Manor House Restaurant)

Session 1 Chair: Erich Rohwer

Abstract

09:00 – 09:30 Opening Proceedings (Conference Venue)

09:30 – 10:20 Atoms on cruise control. Dr Herman Uys, CSIR
Research Chair, US INV 01

10:20 – 10:40 Tea

Session 2 Chair: Christine Steenkamp

Abstract

10:40 – 11:30 Classical Entanglement. Prof Andrew Forbes, WITS INV 02

11:30 – 11:50 Development of kHz applied optical remote sensing for atmospheric fauna monitoring. A. Gebru, E. G. Rohwer, P. Neethling, and M. Brydegaard T1

11:50 – 12:10 Simulation of the interference signal of a scanning Michelson interferometer illuminated by a two-wavelength source. N.J. Suliali, P. Baricholo, P.H. Neethling and E.G. Rohwer T2

12:10 – 12:30 Surface Enhanced Raman Spectroscopy (SERS) of biomolecules. N. B. C Pfukwa, Dr. P. H. Neethling, Prof. E. G. Rohwer and Prof. H. P. H. Schwoerer T3

12:30 – 12:50 Charge carrier effects in silicon membranes. W.I. Ndebeka, P.H. Neethling, C.M. Steenkamp, H. Stafast and E.G. Rohwer T4

12:50 – 14:00 Lunch (Conference venue)

Session 3 Chair: Andrew Forbes

Abstract

14:00 – 14:50 Spatially Offset Raman Spectroscopy for Diagnosis of Bone Disease Prof Tony Parker, Rutherford Appleton INV 03

14:50 – 15:10	Microstructure evolution and tribocorrosion study of laser surface clad zirconia reinforced Ti-6Al-4V alloy.	<u>B A Obadele</u> , A Andrews, P A Olubambi, S Pityana, M T Mathew	T5
15:10 – 15:30	Laser based fabrication of ultra-high temperature metal-ceramic coatings for aero-engine applications.	<u>G.A. Farotade</u> , A.P.I. Popoola and O.S. Adesina	T6
15:30 – 15:50	Tea		
15:50 – 16:10	Synthesis of Ti and TiC hard coating on Ti-6Al-4V using laser surface cladding technique.	<u>O.S. Adesina</u> , A.P.I Popoola, G.A. Farotade, and O.S. Fatoba	T7
16:10 – 16:30	Enhanced corrosion and wear resistance of laser alloyed Zn-Sn-Ti coatings on AISI 1015 steel in acidic environment.	<u>O.S. Fatoba</u> , A.P.I. Popoola, O.S Adesina, G.A. Farotade and S.L.Pityana	T8
16:30 – 16:50	Laser coating of Ti-6Al-4V with SiC-based cermet.	<u>D.I. Adebisi</u> , A.P.I. Popoola and S.L. Pityana	T9
16:50 – 17:10	Reconfigurable Optical Networks for Next Generation Optical Fibre Transmission.	<u>D.K. Boiyo</u> , T.B. Gibbon and A.R.Leitch	T10
17:30 – 18:30	Wine Tasting Zevenwacht Cellar		
19:30 – 21:00	Dinner (Lapa)		

Friday, 4 December

07:00 – 08:00 Breakfast (Manor House Restaurant)

Session 4 Chair: Ernest van Dyk

			Abstract
08:30 – 09:20	New Paradigms for Optical Interference.	Prof Andrew Forbes, WITS	INV 04
09:20 – 09:40	Surface Brillouin Scattering Characterization of Bismuth Ferrite Thin Films.	<u>F. Ayele</u> , D.M Wamwangi and J.D Comins	T11
09:40 – 10:00	Surface Brillouin Scattering of Transition metal nitrides films.	J.M. Kuria, <u>D. Wamwangi</u> , J.D. Comins, D.G. Billing and M. Msimanga	T12
10:00 – 10:20	Encoding information into spatial modes of light.	<u>B. Ndagano</u> , A. Trichili, M. McLaren, M. Zghal and A. Forbes	T13
10:20 – 10:40	Tea		

Session 5 **Chair: Hendrik Swart**

			Abstract
10:40 – 11:30	Ultrafast Light Harvesting – from leaves to organic solar cells	Prof Heinrich Schworer, LRI, US	ST1
11:30 – 11:50	Femtosecond pump probe spectroscopy of light harvesting complexes and hematite hybrid structures.	<u>A.T. Paradzah</u> and T.P.J. Krüger	T14
11:50 – 12:10	Investigation of photoprotection mechanisms in light harvesting complexes of higher plants.	<u>F. Kyeyune</u> , T.P.J. Krüger, M. Diale, J. Botha and H. Stoltz	T15
12:10 – 12:30	Characterisation of thin film photovoltaic modules using large area light beam induced current measurements.	<u>M. Okullo</u> , F.J. Vorster, E.E. van Dyk and W. Okullo	T16
12:30 – 12:50	Quantitative Comparison of the Aerosol Optical Properties over Durban using Sun-Photometer and LiDAR.	<u>P. Singh</u> and S. Venkataraman	T17
12:50 – 14:00	Lunch (Conference venue)		

Session 6 **Chair: Heinrich Schworer**

			Abstract
14:00 – 14:20	Femtosecond electron diffraction analysis of decoupled superlattice domains in $4H_b$ -TaSe ₂ single crystals.	<u>O.O. Olaoye</u> , N. Erasmus, K. Haupt and H. Schworer	T18
14:20 – 14:40	Zn doped ZnO PLD thin films	<u>E Hasabeldaim</u> , O M Ntwaeaborwa, R E Kroon and H C Swart	T19
14:40 – 15:00	Evaluation of Photodynamic Effects of Gold Nanoparticles and Gold Dendrimers in a Breast Cancer (MCF-7) Cell Line.	<u>I. Mfouo Tynga</u> , N.N. Houreld and H. Abrahamse	T20
15:00 – 15:20	African Laser Centre-Student Chapter (ALC-SC) Annual report 2015.	<u>S M Ayuk</u>	T21
15:20 – 15:40	Tea		

15:40 – 16:30	Super-resolution single fluorophore microscopy.	Dr Gurthwin Bosman, LRI, US	ST 2
16:30 – 17:20	Principles of THz time domain spectroscopy.	Dr Pieter Neethling, LRI, US	ST 3
17:20 – 18:00	<u>IYL Celebration</u> : Demonstrations by the Stellenbosch Chapter of the OSA		
19:30 – 22:00	Dinner (Lapa)		

Saturday, 5 December

07:00 – 08:00 Breakfast (Manor House Restaurant)

Session 7 ***Chair: Pieter Neethling***

			Abstract
08:30 – 09:20	Production and Characterization of Photovoltaics Cells and Modules using Lasers.	Dr Freddie Vorster, NMMU	ST 4
09:30 – 10:10	Cooling atoms with light.	Dr Herman Uys, LRI, US	ST 5
10:10 – 10:30	Tea		
10:30 – 11:20	Some current questions in biophysics in which laser techniques can be useful.	Prof Kristian Müller-Nedebock, LRI, US	ST 6
11:25 – 12:15	Basics of lasers: Organizing light.	Prof Erich Rohwer, LRI, US	ST 7
12:15 -12:45	Conclusion: Certificates and Awards		
12:45 – 13:30	Lunch (Conference venue)		
13:30 – 22:00	Excursion to the Franschoek		

Sunday, 6 December

07:00 – 08:00 Breakfast (Manor House Restaurant)

08:30 – 12:00 Departure for Airport