



15<sup>th</sup> International Conference on Luminescence and  
Electron Spin Resonance  
11 – 15 September 2017,  
Cape Town, South Africa

## **PROGRAMME**

### **Sunday, 10 September 2017**

08:00 – 09:00 Registration

09:00 – 18:00 Workshop

14:00 – 18:00 Registration

18:00 – 20:00 Ice-breaker

### **Monday 11 September 2017**

8:00 – Registration

8:30 – 9:00 Opening

*Welcome* Makaiko Chithambo, Chairman, LED2017

*Opening* Patrick Woudt, President, South African Institute of Physics

*Imbongi iyabonga* Sange

### **Session 1 Basic physical processes and materials' characteristics Innovative dating approaches**

*Chairpersons* David Sanderson

9:00 – 9:30 Georgina King

**INVITED** *A mountain in the making: Understanding landscape evolution with OSL-thermochronometry*

9:30 – 9:45 Alida Timar-Gabor

*Fundamental OSL and ESR investigations on sedimentary quartz of different grain sizes*

9:45 – 10:00 Thays Desiree Mineli

*Variation of saturation dose and luminescence sensitivity of quartz from South American sediments*

10:00 – 10:15 Luke Gliganic

*Towards using luminescence-based techniques to date a lithic quarry and artefact scatter site in Tibet*

10:15 – 10:30 Xianjiao Ou

*Transmission of light through different rock types, and implications for luminescence burial dating of cobbles*

10:30 – 11:00 Tea break

**Monday 11 September 2017**

**Session 2      Advances in dose rate determination  
Instrumentation and procedures**

*Chairpersons*    *Jan-Pieter Buylaert and Michael Discher*

- 11:00 – 11:15    Barbara Mauz  
*Determining the annual dose for dosimetric dating purpose – an update*
- 11:15 – 11:30    Alan Cresswell  
*Review of nuclear data underpinning dose rate conversion parameters*
- 11:30 – 11:45    Maryam Heydari  
*OSL signal saturation and dose rate variability: investigating the behaviour of different statistical models*
- 11:45 – 12:00    Helen Roberts  
*Optimising measurement procedures for equivalent dose determination using portable luminescence readers*
- 12:00 – 12:15    Konrad Tudyka  
 *$\mu$ Dose: a compact system for dose rate measurement in ESR/OSL/TL dating*
- 12:15 – 12:30    Daniel Richter  
*LexCal - a quartz for source calibration*
- 12:30 – 14:00    Lunch

**Monday 11 September 2017**

**Session 3      Applications in earth and planetary sciences**

**Chairpersons** *Mayank Jain and Gloria López*

- 14:00 – 14:30    André Sawakuchi  
**INVITED**            *Natural controls on the luminescence sensitivity of quartz and its application to source-to-sink sedimentary systems*
- 14:30 – 14:45    Manoj Jaiswal  
                         *Luminescence chronology of palaeofloods in Kaveri Basin, Southern India*
- 14:45 – 15:00    Renske Lambert  
                         *Luminescence thermochronometry of the Mont Blanc massif (western European Alps)*
- 15:00 – 15:15    Jiang Wu  
                         *A detailed OSL and post-IR IRSL dating of the last interglacial – glacial cycle at the desert- loess Yulin site (north-central China)*
- 15:15 – 15:30    Harrison Gray  
                         *Quantitative connections between luminescence and fluvial sediment transport*
- 15:30 – 16:00    Tea break

**Session 4      Applications in archaeology  
                     Innovative dating approaches**

**Chairpersons** *Mary Evans and Ebenezer Oniya*

- 16:00 – 16:15    Debra Colarossi  
                         *Testing violet stimulated luminescence protocols on quartz from South Africa*
- 16:15 – 16:30    Kelita Shadrach  
                         *How old is the Fauresmith stone tool industry from Pit 4 West at Canteen Kopje, Northern Cape Province, South Africa?*
- 16:30 – 16:45    Robyn Pinder  
                         *A re-evaluation of the chronology at Florisbad, South Africa, using luminescence dating*
- 16:45 – 17:00    Madhav Krishna Murari  
                         *Recent developments and progress towards establishing Infrared radiofluorescence (IR-RF) as a dating method*

**Tuesday 12 September 2017**

**Session 1      Applications in earth and planetary sciences  
Innovative dating approaches**

**Chairpersons** *Michel Lamothe and Regina DeWitt*

- 8:00 – 8:15      Zhong He  
*Multiple-signal luminescence dating of a fluvial sequence and implications on Holocene flooding activities in Weihe Basin, Central China*
- 8:15 – 8:30      Hao Long  
*Using multiple luminescence signals to examine the bleaching of water-lain sediments: A case study from Qinghai Lake (NE Tibetan Plateau)*
- 8:30 – 8:45      Maria Schaarschmidt  
*Post-infrared IRSL and infrared-radiofluorescence (IR-RF) dating of Palaeolithic sequences in Badalinh and Gu Myaung Caves: first luminescence ages for Myanmar, Southeast Asia*
- 8:45 – 9:00      Yiwei Chen  
*Optical dating of paleo-shorelines of Dawa Co in Tibet Plateau: testing the ‘great pan-lake hypothesis’*
- 9:00 – 9:15      Shannon Mahan  
*Valles Caldera, New Mexico, USA: Dating and defining the rate of formation of soils and wildfire activity using luminescence*
- 9:15 – 9:30      Elizabeth Chamberlain  
*Luminescence dating of delta sediments: novel approaches explored for the Ganges-Brahmaputra-Meghna Delta*
- 9:30 – 9:45      Gloria López  
*Implications of Intrastratal Complexities on finite Luminescence Ages: the case of Galería, Sierra de Atapuerca, Spain*
- 9:45 – 10:00      David Sanderson  
*IRSL dating of fine grained marine sediments from the Red Sea continental shelf near Farasan : dealing with signal stability, test-dose sensitisation, and U mobility.*
- 10:00 – 10:30      Tea break

**Tuesday 12 September 2017**

**Session 2                      Basic physical processes and materials' characteristics**

**Chairpersons**                      *Sumiko Tsukamoto and Naomi Porat*

10:30 – 11:00    Sheng-Hua Li

**INVITED**                      *The older OSL ages are, the better: are they reliable?*

11:00 – 11:15    Georgios Polymeris

*Component-resolved bleaching correlation between OSL and IRSL signals in various geological materials*

11:15 – 11:30    Kira Westaway

*Heavily fading feldspars from Southeast Asia; is pIR-IRSL270 the sweet spot?*

11:30 – 11:45    Yan Li

*How robust is the K-feldspar fading correction near saturation: A comparison between natural and simulated dose response curves*

11:45 – 12:00    Ebenezer Oniya

*The individual effect of thermal treatments, pre-dose and TA-OSL measurements on the sensitization behavior of 110°C TL peak in quartz*

12:00 – 12:15    Mayank Jain

*OSL meets ESR: luminescence dating based on direct probing of trapped electrons*

12:15 – 12:30    Raju Kumar

*New insights into the electron trapping centres in feldspar*

12:30 – 14:00 Lunch

**Tuesday 12 September 2017**

**Session 3      Combined categories**

**Chairpersons** *Georgios Polymeris and Alicja Chruścińska*

- 14:00 – 14:15    Michel Lamothe  
*The issue of dose recovery in IRSL protocols*
- 14:15 – 14:30    Laurence Forget Brisson  
*Exploring the use of a low temperature preheat in IRSL (LPH-IRSL) dating of feldspar in Beringian archaeological contexts*
- 14:30 – 14:45    Kieran O’Gorman  
*K content of individual feldspar grains for sediments from various regions*
- 14:45 – 15:00    John Carter  
*Is something wrong with my photomultiplier? Investigating excess variations in photon counting systems used for luminescence dating and detection of irradiated foods*
- 15:00 – 15:15    Geoff Duller  
*Reproducibility of thermal pretreatment prior to optically stimulated luminescence measurements: implications for overdispersion*
- 15:15 – 15:30    Grzegorz Adamiec  
*Towards More Robust Kinetic Parameters of Quartz Luminescence – New Comparative Data for the So-called ‘110 °C TL peak’*
- 15:30 – 18:00    **Tea break and poster session 1**

**Wednesday 13 September 2017**

**Session 2      Applications in earth and planetary sciences  
Innovative dating approaches  
Applications in archaeology**

**Chairpersons** *Shannon Mahan and Ann Skinner*

- 8:00 – 8:15      Nathan Brown  
*Using feldspar TL for low-temperature thermochronology*
- 8:15 – 8:30      Eren Şahiner  
*Combined pIR-MET-IRSL and pIR-IRSL dating of sediments collected from Sakarya, Turkey; methodological aspects and comparison with quartz OSL results*
- 8:30 – 8:45      Benjamin Lehmann  
*Combining OSL and Be10 surface exposure dating to constrain ice-extent histories*
- 8:45 – 9:00      Christoph Schmidt  
*Luminescence dating of young volcanic eruptions*
- 9:00 – 9:15      Naomi Porat  
*Using portable OSL reader to obtain a time scale for soil accumulation and erosion in archaeological terraces, the Judea Mountains, Israel*
- 9:15 – 9:30      Brice Lebrun  
*Direct and indirect study of beta dose rate heterogeneities : a case study of West African archaeological sediments*
- 9:30 – 9:45      Mathieu Duval  
*An attempt at quantification of HF etching of quartz and feldspar grains: implication for ESR and Luminescence dating studies*
- 9:45 – 10:00      Kay Dornich  
*Open Initiative: Towards a reporting standard for quartz SAR-OSL data*
- 10:00 – 10:30 Tea break

**Wednesday 13 September 2017**

**Session 2      Basic physical processes and materials' characteristics  
Applications in earth and planetary sciences**

**Chairpersons** *Ian Bailiff and Rabiul Biswas*

- 10:30 – 11:00    Makaiko Chithambo  
**INVITED**      *Time-resolved optically stimulated luminescence: Principles and developments*
- 11:00 – 11:15    Alicja Chruscinska  
                    *Thermally modulated OSL related to the fast component of OSL signal in quartz*
- 11:15 – 11:30    Mauro Fasoli  
                    *Electron trapping defects identification by coupling EPR to TSL and OSL techniques*
- 11:30 – 11:45    Johannes Friedrich  
                    *Radiofluorescence as a detection tool for quenching processes in quartz luminescence*
- 11:45 – 12:00    Elisha Teo  
                    *Optimizing and testing the time-resolved OSL of feldspar contaminated quartz grains*
- 12:00 – 12:15    Svenja Riedesel  
                    *Constraining the band-tail width of feldspar: implications for luminescence thermochronometry*
- 12:15 – 12:30    **TRIBUTE**  
                    David Sanderson to lead  
                    *Remembering Martin Aitken*
- 12:15 – 14:00    Lunch



**Wednesday 13 September 2017**

**Session 2      ESR: advances and applications  
Innovative dating approaches**

**Chairpersons** *Shin Toyoda and Sebastian Kreuzer*

14:00 – 14:30 Sumiko Tsukamoto  
**INVITED**            *Characteristics of quartz ESR signals and their relevance in sediment dating and thermochronology*

14:30 – 14:45 Melanie Bartz  
                         *Using ESR and luminescence dating to establish a geochronological framework of fluvial terraces along the Moulouya River (NE Morocco)*

14:45 – 15:00 Renaud Joannes-Boyau  
                         *Using X-ray irradiation source for ESR dose recovery*

15:00 – 15:15 Anne Philippe  
                         *Chronological Bayesian models integrating optically stimulated luminescence dating*

15:15 – 15:30 Guillaume Guérin  
                         *Applications of Bayesian Chronological Models Developed in the BayLum R Package*

**15:30 – 18:00    Tea break and Poster session 2**

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17:30 – 18:00 *Ad hoc* Open Discussion session  
                         - To run concurrently with Poster session 2

Convenor:        Kay Dornich  
Topic:            *Open Initiative: Towards a reporting standard for quartz SAR-OSL data*

**Thursday 14 September 2017**

**Session 1                      Basic physical processes and materials' characteristics  
Applications in earth and planetary sciences**

**Chairpersons**                *Eduardo Yuhikara and Mauro Fasoli*

- 8:00 – 8:30    Reza Sohbati  
**INVITED**                      *Optically stimulated luminescence dating of rock surfaces*
- 8:30 – 8:45    Francois Hardy  
   *Investigating North American Quartz Sensitivity*
- 8:15 – 8:30    Vinayak Kumar  
   *Exhumation studies in the Lower Himalayas using Luminescence  
Thermochronology*
- 9:00 – 9:15    Kristina Thomsen  
   *Resolving luminescence in spectral, spatial and compositional  
domains*
- 9:15 – 9:30    Clemens Woda  
   *Time-resolved optically stimulated luminescence of alumina rich  
electronic components of mobile phones*
- 9:30 – 9:45    Lily Bossin  
   *Phototransferred TL properties of alumina substrates*
- 9:45 – 10:00   Angel Nyirenda  
   *Spectral study of X-ray induced radioluminescence in carbon-doped  
aluminium oxide*
- 10:00 – 10:30   Tea break

**Session 2                      Advances in dose rate determination  
Innovative dating approaches  
Instrumentation and procedures**

**Chairpersons**                *Marco Martini and Alida Timar-Gabor*

- 10:30 – 10:45   Ian Bailiff  
   *An examination of beta dose attenuation factors for coarse grains in  
sliced samples*
- 10:45 – 11:00   Martin Autzen  
   *Charged particle disequilibrium in sand-sized grains and its effect on  
luminescence*
- 11:00 – 11:15   Eduardo Yuhikara  
   *Thermoluminescence Analysis for Particle Temperature Sensing and  
Thermochronometry: Principles and Fundamental Challenges*
- 11:15 – 11:30   Rabiul Haque Biswas  
   *Thermoluminescence as a multi-thermochronometer*

**Thursday 14 September 2017**

- 11:30 – 11:45 Jan-Pieter Buylaert  
*Detection of Optically Stimulated Exo-electrons (OSE) from individual sand-sized grains*
- 11:45 – 12:00 Daniel Borombovits  
*Spectral Signature of Single-Grain Quartz Using a Luminescence Imaging System*
- 12:00 – 12:15 Myungho Kook  
*A measurement system for the non-destructive probing of trapped electron populations in feldspar*
- 12:45 Packed Lunch and Field trip
- 19:00 Conference dinner

## Friday 15 September 2017

### Combined session

**Chairpersons** *Sheng-Hua Li and Grzegorz Adamiec*

- 9:00 – 9:15 Marine Frouin  
*A chronological framework for Shanidar Cave (Iraq) based on K-feldspar*
- 9:15 – 9:30 Antoine Zink  
*Underwater dosimetry of EPI Epagnette shipwreck (Somme, France)*
- 9:30 – 9:45 Jintang Qin  
*Initial sensitivity changes of post-IR IRSL signals of K-feldspars from a sandy fluvial sample from Xinjiang, China*
- 9:45 – 10:00 Dileep Koul  
*510 °C TL trap a possible source of medium OSL of fired quartz*
- 10:00 – 10:30 Tea
- 10:30 – 10:45 Xiao Fu  
*OSL chronologies of terraces in south-eastern Australia: do they represent enhanced flow regime during interglacial or glacial periods*
- 10:45 – 11:00 Rachel Smedley  
*Controls on single-grain dose distributions for quartz from glaciofluvial sediments*
- 11:00 – 11:15 Closing
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- 11:45 Departure for post-conference trip