

# **5th International Symposium on Precious Metals**

**(Precious Metals '15)**

**Falmouth, United Kingdom  
11-12 May 2015**

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# Precious Metals '15



## Monday May 11th

- 09.00 **Welcome to Cornwall**  
B.A. Wills (MEI, UK)
- 09.15 *Technical Session 1*  
Chairmen: A. Cropp (ZEISS Natural Resources Lab, UK) and M. Tredoux (University of the Free State, South Africa),
- 09.15 **Keynote Lecture: Innovations in the processing of difficult and low grade gold ores** 1  
J.J. Eksteen (Curtin University, Australia)
- 10.00 **Alkaline sulfide gold leaching kinetics** 15  
C.G. Anderson (Colorado School of Mines, USA)
- 10.30 Coffee
- 11.00 **Coal-oil gold agglomeration assisted flotation to recover gold from refractory ore** 35  
A. Otsuki (Université de Lorraine, France) and Y. Chen (Curtin University, Australia)
- 11.30 **Twenty years of development to commercial demonstration of the Aachen Reactor™** 49  
S. Flatman, M. Battersby, R. Imhof (Maelgwyn Mineral Services Ltd, UK), J. Batty and P. Lotz (Maelgwyn Mineral Services, South Africa)
- 12.00 **Recovery of Ilesa gold concentrate by froth flotation using alkaline salts of vegetable oils** 73  
J.A. Ajayi (Federal University of Technology, Nigeria)
- 12.30 **The effect of temperature, contact time and agitation speed during pre-treatment on elution of gold** 91  
T.P. Oladele, C.A. Snyders, S.M. Bradshaw and G. Akdogan (University of Stellenbosch, South Africa)
- 13.00 Lunch
- 14.00 *Technical Session 2*  
Chairman: J. Vaughan (University of Queensland, Australia)
- 14.00 **Dissolution of gold during pyrite oxidation reaction** 104  
M. Melashvili, C. Fleming, I. Dymov, D. Matthews (SGS Canada Inc., Canada) and D. Dreisinger (University of British Columbia, Canada)
- 14.30 **Gold extraction from a gold-copper concentrate in solutions containing caustic soda and low free cyanide** 122  
E.A. Oraby and J.J. Eksteen (Curtin University, Australia)
- 15.00 **The application of deep eutectic solvent ionic liquids for environmentally-friendly dissolution and recovery of precious metal ores** 145  
G.R.T. Jenkin, A.Z.M. Al-Bassam, R.C Harris, A.P. Abbott, D.J. Smith, D.A. Holwell (University of Leicester, UK) and C.J. Stanley (Natural History Museum, UK)
- 15.30 **Introduction of a new fully hydrometallurgical process for the recovery of precious metals from copper electrorefining anode slimes** 159  
S. Kurki, K. Lillkung and H. Virtanen (Outotec, Finland)
- 16.00 Coffee
- 17.00 Optional Guided Coast Path Walk, ending with a beer at the Chain Locker Pub, Old Falmouth.  
Accompanying partners welcome

## Tuesday May 12th

- 09.00 *Technical Session 3*  
Chairmen: C.G. Anderson (Colorado School of Mines, USA) and D. Dreisinger (University of British Columbia, Canada)
- 09.00 [Precious metals in gossanous waste rocks, Angostura copper mine, Iberian Pyrite Belt, Spain](#) 173  
[J. Hunt](#), B.G. Lottermoser, A. Parbhakar-Fox (University of Tasmania, Australia) and E. Van Veen (Camborne School of Mines, UK)
- 09.30 [Flowsheet development and comparison for the recovery of precious metals from low grade cyanide leach solutions](#) 189  
A.P. van Wyk, S.M. Bradshaw, G. Akdogan, [C.A. Snyders](#) (University of Stellenbosch, South Africa) and J.J. Eksteen (Curtin University, Australia)
- 10.00 [The recovery of precious metals and platinum group metals from spent catalysts and other secondary sources using plasma smelting technology](#) 204  
[T.P Johnson](#) and D.E. Deegan (Tetronics International, UK)
- 10.30 Coffee
- 11.15 [Light microscope to automated mineralogy correlation using ZEISS Mineralogic Mining: a case study using BMS and PGM analysis of samples from a PGE-bearing chromitite prospect within the Berit ophiolite, Turkey](#) 212  
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Q. Ricoux, J.P. Méricq, D. Bouyer, C. Faur, (Institut Européen des Membranes, France), [A. Musina](#) (Magpie Polymers, France and University Politehnica of Bucharest, Romania), V. Bocokić and S.v. Zutphen (Magpie Polymers, France)
- 12.15 [Froth flotation of a Merensky Reef platinum bearing ore using mixtures of SIBX with a dithiophosphate and a dithiocarbamate](#), 237  
L. Kloppers, W. Maree, [O. Oyekola](#) and G. Hangone (Cape Peninsula University of Technology, South Africa)
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- 14.00 [Dissolution of platinum in catalyst materials using hydrochloric acid – a new route via complex oxides](#) 249  
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- 14.30 [The state of platinum-group elements in ore forming systems: a report on recent evidence for nanoparticle involvement](#) 259  
[M. Tredoux](#) (University of the Free State, South Africa), C. Ballhaus and H. Helmy (Bonn University, Germany)
- 15.00 [Nanofibers for separation of rhodium\(III\) and iridium\(IV\) chlorido species](#) 270  
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- 15.30 [Application of direct electrowinning technology for the economic extraction of silver from a high grade polymetallic ore](#) 311  
[A. Vathavooran](#) (Tetra Tech WEI, UK) and T. Bergfeldt (Electrometals Technologies Ltd, Canada)
- 16.00 Closing remarks and invitation to Precious Metals '17  
A.J. Wills (MEI, UK)
- 16.15 Cornish cream tea