

Guest Editorial

Fray International Symposium on Metals and Materials Processing in a Clean Environment: Part II

Part II of this special issue of *Mineral Processing and Extractive Metallurgy* presents a selection of the best papers delivered at the Fray International Symposium on 'Metals and Materials Processing in a Clean Environment'. This Symposium, held in Cancún, Mexico, from 27 November to 1 December 2011, was organised to honour the distinguished work and lifetime achievements of Professor Derek J. Fray FRS FREng, who is well known for his significant impact in the area of materials extraction and processing and, especially, for developing new and sustainable technologies.

Part I was published in Vol. 122 No. 4, 2013. It contains an overview by Fray summarising some of the technologies he developed during the course of his research, a comprehensive review of the FFC-Cambridge process, as well as papers covering other aspects of metal extraction and refining.

Part II focuses mainly on slag-based processes and the papers highlight the important role that these will play in the future winning of commodity and precious metals at an industrial scale. In the first paper, Tsybulov *et al.* present new results regarding their recently developed process for the continuous conversion of nickel-containing copper matte and copper concentrates to produce blister copper and slags with high copper and nickel content. Jha and Srikanth investigate the extraction of copper and iron from chalcopyrite in the presence of lime and carbon and demonstrate how this process may be optimised by *in situ* measuring and controlling the chemical potential of oxygen in the matte. Eric and Demir then address the extraction of chromium from chromite ores dissolved in slags of compositions relevant to the production of ferrochrome and stainless steel. Last, Morita *et al.* discuss the recovery of platinum group metals in high temperature processes involving slag treatment, aiming to strive for a more sustainable future use of these precious metals. In the final paper of the special issue, Gaune-Escard *et al.* examine the formation and properties of compounds between alkali metal halides and lanthanide halides, a model system for many nuclear fuel materials.

Many other contributions would have had the scientific merit to be included in this, inevitably space limited, special issue. The complete set of presentations is available in the proceedings of the conference, published by FLOGEN Star Outreach and edited by F. Kongoli as 'Metals and Materials Processing in a Clean Environment'. A full conference report is given in <http://www.min-eng.com/pyrometallurgy/reps/10.pdf>.

Guest Editors



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