



With the increasingly challenging techno-economic climate we now operate in, coupled with the rise in the need to mine more heterogeneous and complex orebodies, geometallurgy represents a collective, multidisciplinary mine-planning approach to both maximizing value and managing the risk emanating from ore variability. The first SAIMM Geometallurgy Conference, held from 7 to 8 August 2018 at the Lagoon Beach Hotel in Cape Town, was attended by close to 90 delegates from 13 different countries spanning several continents and representing industry, consultants, service providers, and academia. This edition of the *Journal* contains some of the excellent papers that were presented at the Geometallurgy Conference. Each of the papers published here has been through a formal peer review process in line with the requirements of the *Journal*.

This first SAIMM Geometallurgy Conference was the culmination of months of planning since the first discussions in 2016 when the Western Cape Branch of the SAIMM proposed holding this conference in Cape Town. The late Professor Dee Bradshaw and Adjunct Professor Mike Solomon were notable champions of the argument for increasing the profile and awareness of geometallurgy within the South African minerals fraternity. Support was thereafter rallied from the SAIMM, the Geological Society of South Africa (GSSA), and the Mineralogical Association of South Africa (MINSa) – with representatives from each of these organizations forming the conference technical committee. This ‘coming together’ of the different activities in the mining business reflects the nature of geometallurgy as an integrated, multidisciplinary practice.

In organizing the Geometallurgy Conference, we intended to establish a platform to advance the cause of geometallurgy in southern Africa by (i) showcasing some of the exciting geometallurgical work taking place both locally and internationally, (ii) creating a space where those interested in further understanding geometallurgy can come and learn, (iii) establishing a local community of practice and (iv) providing a platform where we can reflect on some of the challenges we are currently facing that are limiting the practice and success of geometallurgy and debate on ideas to overcome them.

Five keynote presentations were delivered at the conference that spoke to the opportunity geometallurgy offers in unlocking complex ores (Professor Alice Clark, SMI, University of Queensland, Australia), the exciting discovery of the Flatreef PGE-Ni-Cu-Au deposit (Sello Kekana, Ivanplats, South Africa), the role of modelling and simulation in geometallurgy (Dr Jussi Lippo and Dr Antti Remes, Outotec, Finland), learnings from the successful practice of geometallurgy at Namakwa Sands (Dr Carlo Philander, Tronox, South Africa) and the missing voice of the mining engineer in geometallurgy (Alistair Macfarlane, Mandela Mining Precinct, SA).

Conference presentations over the two days spanned the role of automated mineralogy, core and belt scanning technologies, geostatistics and modelling, small-scale geometallurgical testing, as well as various case studies describing the implementation and practice of both strategic (project) and tactical (operational) geometallurgy at the Namakwa Sands mine, Siguri gold mine, Orapa diamond mine, and the Kumba iron ore operations amongst others.

The conference closed with an interactive panel discussion allowing delegates to reflect on some critical questions and issues we face with geometallurgy and providing counsel on (i) the need to articulate whether the value-add offered by geometallurgy has been realized and sufficiently paid back the resources used in implementing an on-site geometallurgical programme, (ii) deciding how many samples are needed, which should be informed by a clear understanding of the purpose of the measurements and conversation with your friendly geostatistician, (iii) approaches to making geometallurgy more accessible to the junior and mid-tier mining companies, (iv) the role of academia in providing training and support, and (v) the need to revisit and expand the scope of geometallurgy, in particular to include more routine consideration of deleterious elements and environmental factors.

A very successful pre-conference ‘Practical Geometallurgy’ workshop was also run by keynote speakers Dr Lippo and Dr Remes from Outotec, that afforded over 30 participants first-hand experience at using the interactive ‘OreMet Optimizer’ module of the HSC Chemistry software.

A special word of thanks and acknowledgement to the keynote presenters, authors, reviewers, exhibitors, sponsors and the organizing committee – all of whom contributed to the organization of this very successful event. We look forward to the next Geometallurgy Conference – watch this space for more details!

M. Becker
Geometallurgy 2018 Conference Organizer