

WORKSHOP 1

Processes in magma chambers with implication to genesis of ore deposits

Leaders: Rais Latypov (Rais.Latypov@wits.ac.za) and Steve Barnes

Pre-symposium Workshop, 12th International Platinum Symposium, Yekaterinburg, Russia (9-10 August 2014) (2 days)

Preliminary program

(Each talk is 40 mins, 15 mins for discussion and 5 mins for changeover.)

9 August 2014 (Wednesday) Morning

1. **8:00-9:00:** "Melting and transport processes and the fractionation of PGE between mantle and crust" by Prof. Jim Mungall (Toronto University, Canada)
2. **9:00-10:00:** "Structural controls on intrusion emplacement, filling of magma chambers and growth of plutonic bodies..." by Prof. Alexander Cruden (Monash University, Australia)

10:00:00-10:30: coffee break

3. **10:30-11:30:** "Fluid dynamic constraints on magma behaviour: convection, entrainment, heat transfer and gravity currents" by Dr Jess Robertson (CSIRO, Australia)
4. **11:30-12:30:** "Phase equilibria constraints on magma evolution in basaltic magma chambers" by Prof. Alexey Ariskin (Vernadsky Institute, Russia)

12:30-13:30: lunch break

9 August 2014 (Wednesday) Afternoon

5. **13:30-14:30:** "Initial stage in the development of magma chambers (crystallization in conduits, chilled margins, marginal reversals, cooling history, magma flow regimes, etc.)" by Prof. Rais Latypov (Wits University, South Africa)
6. **14:30-15:30:** "Intermediate stage in the development of magma chambers (magma replenishment, magma mixing, floatation, etc.)" by Dr. Olivier Namur (University of Cambridge, UK)

15:30-16:00: coffee break

7. **16:00-17:00:** "Advanced stage in the development of magma chambers (in situ crystallization versus gravity settling, magma stratification, fractional crystallization, mush versus liquids, mineral and rock evolutionary trends, etc.)" by Prof. Christian Tegner (Aarhus University, Denmark)

8. **17:00-18:00:** “Final stage in the development of magma chambers..... (postcumulus processes, compositional convection, compaction, silicate immiscibility, textural recrystallization, the geometry of three-grain junction, etc)” by Dr. Ilya Veksler (GFZ, Helmholtz Centre Potsdam, Germany)

10 August 2014 (Thursday) Morning

1. **8:00-9:00:** “Crystallisation and emplacement mechanisms in low viscosity magmas: lessons from komatiites and from disseminated Ni sulphide ores” by Dr. Steve Barnes (CSIRO, Australia)
2. **9:00-10:00:** “Relative roles of mechanical transport, slumping, dynamic upgrading, and in-situ crystallization in the formation of komatiite-associated Cr deposits” by Prof. Michael Leshar (Laurentian University, Canada)

10:00:00-10:30: coffee break

3. **10:30-11:30:** “Petrological constraints on the formation Ni-Cu-PGE sulphide ores of the Noril’sk intrusions” by Dr. Nadezhda Krivolutskaya (Vernadsky Institute, Russia)
4. **11:30-12:30:** “The cooling and crystallization history of the Sudbury Igneous Complex with implication to the formation of Ni-Cu-PGE sulphide ores” by Prof. Rais Latypov (Wits University, South Africa)

12:30-13:30: lunch break

10 August 2014 (Thursday) Afternoon

5. **13:30-14:30:** “PGE and chromite-forming processes in mafic-ultramafic layered intrusions” by Prof. Tony Naldrett (Toronto University, Canada) (to be confirmed)
6. **14:30-15:30:** “Structures in cumulates and the role of gravitational slumping in the origin of ore deposits in layered intrusions” by Prof. Wolf Maier (Oulu University, Finland)

15:30-16:00: coffee break

7. **16:00-17:00:** “New insights into the origin of PGE reefs from the Skaergaard layered intrusion” by Prof. Reid Keays (Monash University, Australia)
8. **17:00-18:00:** “The role of magma differentiation and post-magmatic processes in origin of PGE-rich chromitites in the Ural-Alaskan-type mafic-ultramafic intrusions” Dr. Evgeny Pushkarev (Institute of Geology and Geochemistry, Russia)
9. **18:00-19:00:** “Duluth Complex, Antarctic Ferrara dolerites and crystal slurry intrusions” by Prof. Dean Peterson (University of Minnesota Duluth, USA)