

SHORT COURSES

held in conjunction with the 48th Annual

Conference of Metallurgists



held in conjunction with

Nickel & Cobalt 2009



Laurentian University
Sudbury, Ontario
Canada

August 22-23, 2009

Organized by:



www.metsoc.org/com2009

SHORT COURSES



Eduard Guerra

The conference will be preceded by five excellent short courses planned by experts in their fields. All courses will take place Sat., Aug. 22 & Sun. Aug. 23 prior to the 48th Conference of Metallurgists (COM 2009). You are not required to be a conference delegate to attend the short courses.

List of short courses are below:

- ✓ Hydrometallurgy Short Course: Nickel and Cobalt Hydrometallurgy
- ✓ Pyrometallurgy Short Course: Pyrometallurgy of Nickel
- ✓ Mineral Processing Short Course: Advances in Flotation Technology
- ✓ Process Control Short Course: Process Control in Mining and Metallurgy
- ✓ Geometallurgy and Applied Mineralogy Short Course.

For the full details of the short courses, you can visit the Conference website at www.metsoc.org/com2009. For more information contact:

Eduard Guerra | Short Course Chair, Laurentian University
eguerra@laurentian.ca

Hydrometallurgy Short Course: Nickel and Cobalt Hydrometallurgy

Main Organiser(s):

Dr. Vladimiro Papangelakis | University of Toronto, Canada
vladimiro.papangelakis@utoronto.ca

Duration: Sat., Aug. 22 & Sun., Aug. 23 at Laurentian University

Price: \$700 (students \$350) CDN

Includes: Hard copy course notes, lunch on Sat. and Sun., and refreshments.

Topics (see website for update on Presenters):

- ✓ Advances in solution chemistry in Ni hydrometallurgy (V. Papangelakis, University of Toronto)
- ✓ Hydrometallurgy of Ni sulphides (R. Berezowsky, formerly with Dynatec)
- ✓ Hydrometallurgy of Ni oxides and silicates (E. Krause, Hydromet Solutions)
- ✓ Purification processes (I. Mihaylov, Vale Inco)
- ✓ Aspects of industrial hygiene (B. Conard, Vale Inco)
- ✓ Electrometallurgy of Ni and Co (V. Ettl, Vale Inco)
- ✓ Mineral economics (D. Dreisinger, University of British Columbia).

Sponsored by:

The logo for CYTEC, featuring the word "CYTEC" in a bold, blue, sans-serif font. The "Y" and "T" are stylized with a horizontal bar through them.

Pyrometallurgy Short Course: Pyrometallurgy of Nickel

Main Organiser(s):

Dr. Phillip Mackey | Xstrata Process Support, Extractive Metallurgy, Canada
PMackey@xstratanickel.ca

Dr. Torstein Utigard | University of Toronto, Canada
utigard@ecf.utoronto.ca

Duration: Sat., Aug. 22 & Sun., Aug. 23 at Laurentian University

Price: \$700 (students \$350) CDN

Includes: Hard copy course notes, lunch on Sat. and Sun., and refreshments.

Topics (see website for update on Presenters):

Day 1

- ✓ Overview of nickel (P.J. Mackey, Xstrata Process Support)
- ✓ Nickel metallurgy in perspective (W.G. Davenport, University of Arizona)
- ✓ Sulphide nickel - Part I – Introduction (T. Utigard, University of Toronto)
- ✓ Sulphide nickel - Part II - Operations – smelting
- ✓ Sulphide nickel - Part III – Operations – converting
- ✓ Laterite nickel – Introduction (T. Utigard, University of Toronto)
- ✓ Laterite nickel - Part I - Feed/drying/pre-reduction (M. Prokesch (FLS) and S. Kashani-Nejad, Hatch)
- ✓ Laterite nickel - Part II - Drying/pre-reduction (M. Prokesch (FLS) and S. Kashani-Nejad, Hatch)
- ✓ Laterite nickel- Part III - Electric furnace
- ✓ Ferronickel refining (M. Zamalloa).

Day 2

- ✓ Modern process control (P. Thwaites, Xstrata Process Support)
- ✓ Sustainable development issues - environmental and energy (T. Utigard, University of Toronto)
- ✓ New nickel smelting technologies (R. Jones, Mintek).



Process Control Short Course: Process Control in Mining and Metallurgy

Main Organiser(s):

Lionel Ryan | Barrick Gold Corporation, Canada
lryan@barrick.com

Helen Shang | Laurentian University, Canada
hshang@laurentian.ca

Duration: Sat., Aug. 22 & Sun., Aug. 23 at Laurentian University

Price: \$700 (students \$350) CDN

Includes: Hard copy course notes, lunch on Sat. and Sun., and refreshments.

Topics (see website for update on Presenters):

- ✓ Process control fundamentals (A. Vien, Metso Minerals Process Technology)
- ✓ Model predictive control (B. Jonas, Honeywell)
- ✓ Robust control and H^∞ (B. Boulet, McGill University)
- ✓ Multivariate PCA/PLS (J. MacGregor, ProSensus).



