TMS2010

139th Annual Meeting & Exhibition

February 14 - 18, 2010, Washington State Convention Center, Seattle, Washington USA

Process Modeling: Spreadsheets and Beyond – Computational Techniques for Making and Using Material and Heat Balances

Sunday, February 14, 8:30 a.m-5 p.m.

Do you have an accurate mass and energy balance for your process? Are you able to quickly calculate the effect of changes that could save energy and/or make the process more efficient? This course will examine calculation options for engineers pursuing process changes that can unleash the greatest probability of saving both material and energy.

Who should attend?

Engineers or technologists who have wrestled with finding the best approach to (a) minimize energy usage, (b) analyze waste minimization, and (c) maximize efficiency, in metals extraction and other chemical processes. These themes are relevant to the growing focus on Materials and Society. Course registrants should have a basic understanding of the laws of conservation of mass, the first law of thermodynamics, and reasonable knowledge about the application of chemical equilibrium as a process constraint.

Topics

- Overview of "do-it-yourself" techniques using Excel, along with the selection and use of databases to make using Excel easier.
- Overview of the principles of flowsheeting as applied to variety of pyro and hydrometallurgy examples.
- The Excel-based flowsheeting program FlowBal, which is particularly useful for attendees interested in getting started without committing to a commercial software package.
- Introduction to commercial flowsheeting programs METSIM and HSC-Sim with one-to-one comparison to the Excel-based process examples.

Materials needed

Attendees are requested to bring laptop computers to follow the course presentation and take notes.

Course instructors

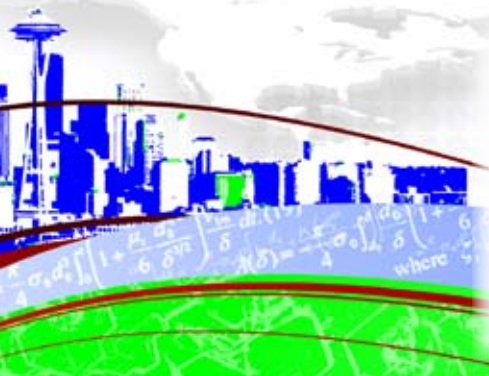
Dr. Arthur E. Morris, professor emeritus, Department of Materials Science and Engineering, Missouri University of Science and Technology, Rolla, Missouri. Dr. Morris currently is chief scientist for Thermart Software, San Diego, California.
Dr. Michael S. Moats, assistant professor, Department of Metallurgical Engineering, University of Utah, Salt Lake City, Utah.
Dr. Eric Grimsey, FAusIMM, CPMet, FIEAust, CPEng, Professor of Minerals Engineering, W.A. School of Mines, Kalgoorlie, Western Australia.

How to Register

Register by January 15, 2010 using the online registration form or download the registration form (PDF) and mail or fax with your payment. Cost is $475 for members and $560 for nonmembers.

For More Information

Nate Natale, *Technical Support Specialist*
E-mail: natale@tms.org or Telephone: (724) 776-9000, ext. 222 • (800) 759-4TMS



Included with the registration fee

1. **FlowBal,** a process simulation program for making material and heat balance calculations in multi-device systems.
2. **FREED,** a free energy and enthalpy database.
3. **SuperSolver,** a program for repeatedly solving sets of multiple non-linear equations.
4. **MMV-C,** a program for converting stream flows from one set of units to another.

*Attendees are able to purchase the **Handbook on Material and Energy Balance Calculations in Materials Processing (Third Edition)** at a discounted rate.*