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The Washington DC Section of SME proudly presents

Nedal T. Nassar – Anthropogenic cycles of metals: case studies of the platinum-group elements

The platinum-group elements (PGEs) are among the rarest elements in Earth's upper continental crust, yet each plays an important role in modern society. Despite their technological importance, little has been published on how much is lost during their extraction, processing, use, and recycling. Utilizing the principles of material flow analysis, this presentation provides estimates of global stocks and flows, losses, and recoveries of Pt, Pd, Rh, Ru and Ir at each life cycle stage. Results indicate that PGE losses are greatest at the first and last life cycle stages, namely at concentration and at the end-of-life. On a relative basis, losses as a percentage of primary production across the PGEs range from approximately 23–38% on the supply-side and from 33–45% on the manufacturing, use, and disposal-side. There are, however, notable differences across both the life cycle stages and the PGEs.

- Date:** Tuesday – February 9, 2016
Time : Social Hour 11:30 - 11:50 am
Section Business/Luncheon 12:00 - 1:30 pm
Location: Clyde's Restaurant at Tyson's Corner
8332 Leesburg Pike, Vienna, VA 22182
Choice: Roasted Chicken, Salmon, or Vegetarian Ravioli
Cost: \$27 for DC Section Members; \$32 for guests
RSVP: Please reply by email to **George K. Schuler** at gkschulerg@verizon.net by noon February 8, 2016



About the Speaker

Nedal T. Nassar is physical scientist with the National Minerals Information Center at the U.S. Geological Survey. Employing a systems perspective, he examines the global stocks and flows of mineral commodities at each stage of their life cycle in order to gain a holistic perspective on their status above ground. Nedal previously worked as a consultant and as a process development engineer and holds doctoral and masters' degrees in industrial ecology from Yale University, a master's degree in business administration from Cornell University, and a bachelor's degree in chemical engineering from the University of Minnesota.