

AIChE Chicago May Meeting Notice



“How Moon Rocks Might Save the Earth”

Dr. Peter J. Schubert

Senior Director for Space and Energy R&D - Packer Engineering

Date: May 14, 2008

Location: European Crystal Banquet Center

519 W. Algonquin Road

Phone: 847-437-5590

Arlington Heights, IL

<http://www.europeancrystalbanquets.com/home.html>

Dinner Choices: Beef Brochette, Orange Roughy, or Penne Pasta with Roasted Vegetables along with salad, and chocolate mousse for dessert.

Cost: Members - \$35 Unemployed Members - \$15
Students - \$5 Non-Members - \$40

Agenda: 5:30-6:30 pm Social & Registration
6:30-7:30 pm Dinner
7:30-8:00 pm Elections and Section Announcements
8:00-8:45 pm Presentation

Presentation Summary

China, Russia, Sweden, the EU, and the US all plan manned missions to the moon. Science, prestige, inspiration, and strategy are motivations for lunar exploration. Yet it may be the economic rewards which motivate striving for a permanent foothold on another world. The Russians plan to return with Helium-3, which they believe is the secret to safe, cheap fusion power. The Swedes plan to build vehicles for future exploration projects. China seeks platinum group metals while Americans want new tourist destinations. For all this to be possible, the frightening cost of rocket launches must be lowered dramatically. The best lever to lower launch costs is reducing launch mass. One way to lower launch mass is to avoid launching completely by establishing factories in space. Factories which can convert moon rocks into useful raw materials will be the foundation of a cis-lunar economy. Oxygen production would be the highest priority because it is essential to life support and the largest component of rocket fuel mass. Aluminum and iron are next, for habitats, for electrical cables, and for rails. Then, we need silicon, to build solar cells capable of capturing pure sunlight and eventually beaming energy back to the earth. Solar power satellites built from lunar materials have the potential to deliver baseline power to all of humanity without pollution. This presentation will describe a breakthrough method of oxygen and silicon production in technical detail. With metrics up to 3X better than existing methods for oxygen extraction, this new lunar factory can produce 40X its own mass in product each year! Augmented with other extraterrestrial manufacturing devices, a radical transformation of how mankind uses space is at hand.

Dr. Peter J. Schubert

Dr. Schubert received his BS degree in physics from Washington University in Saint Louis. He then attended the University of Cincinnati where he received his master's degree in Electrical Engineering followed by his PhD from the Purdue University in Electrical and Computer Engineering. His work experience includes 20 years with Delphi Corporation where he was a Technical Fellow working in automotive electronics. He has 26 patents along with over 50 technical publications. He has served as principle investigator on research grants from DOE, NASA, GSA and US Department of Agriculture including the just announced \$1 million grant in biomass gasification technologies.