

**USC CENTER FOR GEOTHERMAL STUDIES (CGS)
DISTINGUISHED SPEAKER PROGRAM (DSP)***Presents***Advancements in Tracer Flow Testing; Development of Real-Time Technology for Flow and Enthalpy Measurements***By***Jesse Ivan Katz,**
*Thermochem, Inc.***Monday, February 27, 2012, 11:00 am-12:30 pm
HED-116****ABSTRACT:**

The tracer flow test method for dual-phase flowrate and enthalpy measurements has become a standard diagnostic tool for reservoir engineering and power plant optimization in geothermal fields worldwide. Evolution of the technology toward lower tracer injection volume, faster analysis, and smaller equipment has now led to the development of a modular, field-portable, flow measurement system which can deliver real-time data. Two recent technological advances have made this possible: the discovery of a new liquid tracer and development of an alternate analytical method for the vapor tracer. The new liquid tracer has the phase specificity, heat stability, and analytical sensitivity that are needed for the rapid tracer measurements inherent to the real-time process. Two new detection instruments have been built around this liquid tracer. A handheld unit performs tracer measurements on discrete samples in the laboratory or directly in the field, while an online version of the same detector system delivers real-time brine flow data. To speed up analysis of the vapor tracer, a new gas chromatography system has been miniaturized and hardened for field application, and can now provide on-site analysis of vapor tracer samples. For applications requiring real-time steam-flow data, a newly developed optical detection system provides continuous monitoring of vapor tracer. The integration of these developments into existing tracer flow test methodologies has made it possible to acquire flow and enthalpy data on a real-time basis.

BIO:

Jesse Ivan Katz is a Field Chemist for Thermochem, Inc., a chemical testing and consulting service for the energy industry. He received his BA in chemistry and biology from Pitzer College in 2007 and has since worked with Thermochem, Inc. on many of the world's geothermal and steam flood oil extraction projects. Jesse Katz has also been integral in advancing Thermochem's Tracer Flow Test (TFT) method and instrumentation for two-phase, on-line fluid flow and enthalpy determination. Advancements in tracer flow testing have made it a standard diagnostic tool for reservoir engineering and power plant optimization, and the primary means of two-phase flow measurement in geothermal fields worldwide.

DSP is supported by a RIF Grant from USC VSoE and a Gift from Ormat Technologies.

Prof. Fred Aminzadeh, x1-4268, faminzad@usc.edu

<http://cgs.usc.edu/>

