



AICHE Orange County

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February 2007

Orange County Meeting FEBRUARY DINNER MEETING

Coal Gasification: Investigation of Novel Unmixed Fuel Processing (UFP) Technology

Dr. Parag P. Kulkarni
GE Global Research

Tuesday, February 27, 2007
6:00 PM

We are very pleased to report that the program for our February meeting will cover the following topics:

- 1) Gasification of coal to produce electricity
- 2) Emissions comparison & production of hydrogen fuel
- 3) Feasibility of a novel gasification technology (UFP)
- 4) Research activities undergoing at GE Global Research

With its abundant domestic supply, coal is one of the most secure, reliable, and affordable energy supplies for the U.S. Today, gasification of coal to produce electricity is being commercially introduced as Integrated Gasification Combined Cycle (IGCC) power plants. The IGCC technology is well suited to meet the needs for power generation from coal more cleanly than other conventional technologies. It is also compatible with tomorrow's need for carbon sequestration and production of hydrogen fuel. GE is actively pursuing and commercializing the IGCC technology. At the same time, GE Global Research is investigating long-term, high-risk but big-impact technologies. Looking further into the

future, GE along with Department of Energy (DOE), is evaluating the feasibility of a novel gasification technology called Unmixed Fuel Processing (UFP) of coal to achieve efficiency and cost advances in meeting the long-range hydrogen and electrical production needs from coal with CO₂ capture. The evaluation is continuing. The presentation will include fundamentals of coal gasification and UFP technology and a brief overview of research activities undergoing at GE Global Research including economic and experimental (bench and pilot-scale) feasibility evaluation.

Parag is a Chemical Engineer/Technologist at the GE Global Research Center in Irvine, CA. He has over 6 years of industrial experience in reforming, gasification, catalysis and pollution control technologies. He is currently a Principal Investigator on a multi-million dollar research program on coal gasification funded by DOE. Prior to joining GE, Parag graduated from University of Mumbai (UDCT), India with a B.S. degree in 1997 and then earned his Ph.D. degree in Chemical Engineering from the University of Pittsburgh in 2001.

Meeting Schedule:

5:30 p.m.	Social Hour
6:30 p.m.	Dinner
7:20 p.m.	Break
7:30 p.m.	After-Dinner Program

Place: Wyndham Garden Hotel, Costa Mesa

Directions: From Interstate 405, go north on Bristol Ave., right on Anton, left on Avenue of the Arts. The Wyndham is on the right at 3350 Avenue of the Arts, Costa Mesa.

Reservations: *Please make a reservation at (714) 686-2791 by voice by Friday, February 23, 2007. Or, you may email your reservation to dalebotts@adelphia.net*



Cost: Members, \$20 with a reservation, \$25 at the door; Non-Members, \$25 with reservation, \$30 at the door; Students Free with reservation, \$5 at the

door, Unemployed/Retired, \$5 with reservation, and \$10 at the door.

Starting with the month of January 2007, every third meeting a member attends is FREE with reservation

STUDENT CORNER

Please contact the newsletter editor if you would like to publish any AIChE student chapter meeting summary or contribute any articles related to science/engineering.

Professional Engineering Employment Update

Process Specialist - Simulation

Location: Carson Refinery
Business: BP West Coast Products America, LLC
Division/Asset: Carson Business Unit
Department: Optimization
Level: H - G
Supervisor: Project Development Team Leader
Responsibility for: none

Roles and Responsibilities

- Coaches, mentors and supports Optimization Engineers in the use of process simulation tools and techniques. Provides guidance on building, developing and using simulation models and on interpretation of results.
 - Supports unit engineers in developing simulations to identify and relieve process bottlenecks and validating subsequent performance improvement in operating units.
 - Supports the Projects Development Team in using simulation tools to optimize and provide assurance for proposed changes in refinery configuration consistent with strategic goals for growth.
- Works closely with the Refinery Technology (RT) group in the development the Refinery Wide model including calibration and ongoing maintenance of the Model. The person in this role will interface with RT and will also support

the refinery lead process engineers to ensure their input is incorporated into the model.

- Works with RT and Carson commercial Group to develop, implement, and maintain a Refinery Optimization Tool (ROT).
- Supports lead process engineers in development and maintenance of process models utilizing HYSIS and other rigorous models in use or in development at Carson including; Catsim, Hycrack, Platforming, gas oil hydrotreating, distillate hydrotreating and coking.
- Actively participates in Simulation Community of Practice (CoP) including ad hoc participation in peer reviews and peer assists as required.
- Promotes and shares best practice in application of simulation tools for equipment performance monitoring, optimisation and debottlenecking.
- Responsible for building and maintaining the more complex process simulation models.
- Undertakes complex process studies requiring advanced simulation skills.
- Liases with Aspentech and third party suppliers on simulation development issues.
- Responsible for ensuring that their own knowledge is captured effectively and transferred to and from others as appropriate.
- Support the other Optimization engineers in delivery of team objectives and accountabilities.

Core Competencies

- Performance Bias
- Business Awareness
- Partnership and Teamwork
- Wise Decisions
- Innovation
- Leading People

With specific emphasis on:

- Business Awareness
- Performance Bias / Partnership and Teamwork

Technical Competencies

- Numerate with advanced IT skills.
- Advanced skill level in process simulation.
- Advanced skill level in process monitoring tools.
- Good understanding of major refinery processes.
- Well developed process engineering skills.



Demonstrated competency as defined by the Refining Professional Excellence competency map for Levels H - G.

Leadership competencies

Awareness of First Level Leader model and potential to develop Level 5 Leader competencies.

Qualifications and Experience

Minimum of 8 years experience in process engineering and/or operations essential.

Minimum of 5 years process simulation experience with strong emphasis on practical application in a business environment.

Commercial experience is an advantage.

Air Quality Engineers

Karel & Company is looking for Air Quality engineers to join their client's established offices in Texas. Candidates should have a min. of 5 years of experience, and good working knowledge with; TCEQ regulations, CAA, Title III & V. Experience with the petrochemical, refining or in the energy, power and utilities industries with permitting and regulatory work would be preferred. Good management and mentoring skills would be helpful. These are solid growth positions, and candidates should be able to grow into senior managerial positions. Addition positions available in: CA, CO, FL, GA, IL, NY, MA, and Canada, please contact:

Stephen A. Karel, Pres. /CEO
Karel & Company / Executive Search
20 Rice's Lane - Westport, CT 06880
203 - 341 - 9911
www.karelco.com

- ① If you have an employment opportunity in Southern California for a chemical engineer, the newsletter will advertise it for free.

Newsletter Contributors Wanted

The newsletter editor would like to hear from you if you have one or more brief articles to contribute, especially a review or brief discussion of a good website, technical book, etc.

2007 Orange County AIChE Officers

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- ANNOUNCEMENTS -

AIChE Orange County Section Webmaster Needed

Cheryl Zheng is stepping down as the AIChE Orange County Web Master. This is a great opportunity for someone who would like to run a web site. Please contact any of the Section officers if you are interested in this position. The entire website is currently in Microsoft FrontPage.

Skills: website design and HTML programming capability.

Time: Depending on the person's skills, probably around half an hour per month.

Cheryl can provide some training as necessary to set it up for the new person.

AIChE March Meeting

Dominic Meo will be the speaker for the March 27, 2007 meeting in Costa Mesa. He will be speaking about a project in Prudhoe Bay, Alaska. Over 95 percent of the waste oil was recovered by British Petroleum during pigging of old pipelines. These pipelines connected crude oil wells to the Trans Alaska Pipeline.



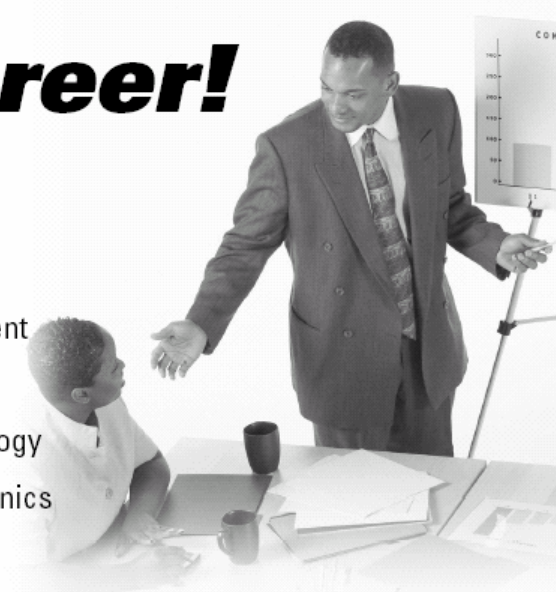
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714.278.2611



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DATED MATERIAL

ADDRESS SERVICE REQUESTED

