



AICHE Orange County

NEWSLETTER OF THE ORANGE COUNTY SECTION, AMERICAN INSTITUTE OF CHEMICAL ENGINEERS

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April 2006

LA-OC Joint Meeting APRIL DINNER MEETING

Spacecraft Life Support and Thermal Control – A Chemical Engineer's Perspective

RICHARD R. CHU, Ph. D., P. E

Tuesday, April 25, 2006
5:30 PM

Chemical engineering is the most important discipline for spacecraft subsystems in crew facilities, air revitalization, water purification, cabin pressure and hazard control, active and passive thermal control, and extravehicular activities (EVA). There are many advanced chemical processors, separators, and reactors within these subsystems in addition to innovative heat transfer equipment. The challenges lay in the most stringent technical requirements and space environment where radiations, vacuum, and microgravity exist.

An insider's bittersweet stories will be provided including both successes and failures such as the Challenger Accident and the Columbia Tragedy. An introduction will be made for the young private spacecraft sector and the development in Russia, EU, China, and Japan. Both big picture and trivial routines inside the NASA community and private industry will be presented. Suggestions will be made to the future of American's manned space programs which are now at a cross road facing uncertainties before the beginning of the engineering of the Crew Exploration Vehicle (CEV) in late 2006.

Richard R. Chu is a Senior Project Engineer, Meggitt Western Design, Irvine; he works in data analysis and proposal preparations in compression, refrigeration, thermodynamic cycles, and compact

heat exchangers. He has spent 13 years at Lockheed Martin as an ECS Manager in system analysis and real-time operations. He was a Life Support Manager for Bigelow Aerospace from 2003 to 2005. He has 13 years earlier experience in the process engineering of synfuels, refinery, and chemical plants as a Staff Process Engineer at Bechtel, Brown & Root, Fluor, and Gulf Oil. He holds a Ph. D. from Georgia Institute of Technology, a B. S. from National Taiwan University, P.E. registration in Texas, all in chemical Engineering. He has given lectures at three universities and presentations 2 AICHE local sections in Southern Texas and Columbia Valley. He has published 12 technical papers at SAE International Conference of Environmental Systems (ICES); a recent one was selected by 2004 SAE Transactions. He has chaired 3 Aerospace sessions and an Astrochemical Engineering Topic Conference in the past AICHE National Meetings. He has received 4 NASA Certificates for Outstanding Services in Space Shuttle and ISS Flight Missions.

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: Khoury's Restaurant.

110 North Marina Dr., Long Beach

Directions: From the north, take the 605 south and take the Seventh Street/Long Beach exit. Go 1.4 miles and take the Studebaker Road exit. Continue south on Studebaker Road for 1.4 miles. Turn right on East Second Street. Continue on another 0.6 miles, then Turn left on Marina Drive at the first signal after PCH. Proceed 1 mile and enter the parking lot for Khoury's.

From Torrance/South Bay, take the 405 south and exit on Studebaker Road. Continue south on Studebaker for 2.1 miles. Turn right on East Second Street. Continue on another 0.6 miles, then



Turn left on Marina Drive at the first signal after PCH. Proceed 1 mile and enter the parking lot for Khoury's.

From Orange County, take the 405 north and exit on Westminster Ave. West. Go 1.9 miles until Westminster Ave. becomes Westminster Blvd. Go an additional 3.9 miles until Westminster becomes East Second Street. Continue on another 0.6 miles, then Turn left on Marina Drive at the first signal after PCH. Proceed 1 mile and enter the parking lot for Khoury's.

Reservations: Please make your reservation for diner by sending an e-mail reservation to janicewest@dslextreme.com or call 714-343-3412 **ASAP** no later than Thursday, 20 April, 2006.

Cost: Members and guests, \$20 with a reservation, \$25 at the door; Students \$5 with reservation, \$10 at the door; Unemployed/Retired, \$15 with reservation, and \$20 at the door.

Starting with the month of January 2006, every third meeting a member attends is FREE with reservation

Legal Corner

KEEPUS" Committee Status (Newsletter FY06-07)

Bob Katin

The FEB 2006 Stakeholders meeting held by the consultants to the Assembly Business and Professions (B&P) Committee was a waste of time. It has become clear that the principle opponent to recognizing ChE's is Professional Engineers in California Government (PECG), not CELSOC. PECG is mainly CalTrans civil engineers but there are ChEs working at State regulatory agencies that are members of the State union of engineers, or PECG. Based on conversations that I have had, most members of PECG either don't care about Senate Bill 246 (SB 246) or don't know anything about it.

SB 246 is the Engineering Board's (BPELS) bill. BPELS said the State law is broken, and the State wants to recognize ChE's. Unfortunately PECG is VERY VOCALLY OPPOSED. It appears that there is not a whole-sale effort on the part of PECG to oppose SB 246. Apparently there is one person, Bruce Blanning, who is not even an officer of PECG, who is directing the effort against SB 246.

The PECG lobbyist has been given direction and his action has resulted in SB 246 being taken off calendar. Assemblywoman McLeod feared that it would not pass a hearing of the Assembly B&P on 14 FEB 2006. No progress will be made until professional lobbyists representing the MARKETPLACE express their interest to the 10 members of the B&P. Currently, you have identified your company lobbyist, and we have letters of support from many companies (see the latest list <http://aiche-norcal.org/Government/lettervolsFeb06.pdf>). Unfortunately, your company letter is not going to be sufficient. I have been told that if just one lobbyist knocked on doors of the ten members of the B&P, SB 246 would be set for a hearing and we would win.

We are coming down to the final stretch. Do not get hoodwinked. PECG has called ChE's saying PECG is willing to recognize ChE's as soon as we restrict the current definition of ChE. This is ridiculous considering the extremely broad definition of CE. To pass SB 246, the MARKETPLACE has to come to the table. The needs are:

1. Lobbyists for industry must meet with all Assembly B&P Committee members to convince them to vote yes on SB 246. Please have your company lobbyist coordinate with CLCPE's lobbyist.
2. We need MARKETPLACE support. We do not win by having an engineering society pleading "recognize us". It has to be industry saying for the good of the State economy, or for public health and safety, VOTE YES ON SB 246. Do not exclude the most qualified engineer from conducting work on the project.
3. We may have to raise money to hire a public relations firm to issue press releases. Send me donations made out to NorCal AIChE.
4. We need to show numbers. If you know any ChEs in CA, send me their name and e-mail address.



Thanks,



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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.

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.

Professional Engineering Employment Update

Environmental Engineer/Geologist (Seattle office)

Responsibilities include:

Field investigation and sampling, Drilling oversight and quality core logging, Monitoring well construction design, Data analysis and quality report writing, Client interaction

Requirements include: 3-5 years of experiences. Health and safety training (40-hour HAZWOPER); soil and groundwater sampling experience; excellent writing skills, communication and organizational skills; ability to work independently with minimal supervision.

Contact:

Charles Robison, Right Way Staffing Professionals
206.622.0865 | office
206.293.4993 | cell
206.938.7763 | fax
www.rightwaystaffing.com

Job Seeking Members can receive a list of web sites of area companies that sometimes hire ChEs. Contact the Senior Member Everett Knell at EWKneil@aol.com to receive this list by e-mail. Put "OCAICHE Company List" in the subject line of your email request.

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

2006 Orange County AIChE Officers

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DATED MATERIAL

ADDRESS SERVICE REQUESTED

