



Jan 2006 BIOTECH SEMINAR

presented and sponsored by:
**THE NORTH AMERICA TAIWANESE ENGINEERS' ASSOCIATION'S
~SIG BIOTECH~**

PRESENTATIONS:

**“A New Method to Micronize Pharmaceuticals
for Pulmonary Drug Delivery”**

**By Dr. Edward T. S. Huang
NATPA President (2005-2006)**

DATE: Friday, January 20, 2006

TIME: 6:30 PM

LOCATION: Squire Sanders Law Firm
600 Hansen Way, Palo Alto, CA 94304

REGISTRATION: FREE seminar with light refreshment
RSVP: ysyang@stanford.edu or slcheng1@yahoo.com

Speaker's BIO:

Edward T. S. Huang received a PhD degree in chemical engineering from the University of Kansas. He worked for four different oil companies until his retirement in 1995. His expertise has been in the injection of liquid (or supercritical) carbon dioxide into underground oil reservoirs for tertiary oil recovery. After retirement, he spent 5 years in Taiwan as guest lecturers at National Cheng Kung University and Tong-Hai University. He taught Supercritical Fluid Extraction Processes to the graduate students of chemical engineering at NCKU and THU.

In the summer of 2000, at the invitation of Professor R.E. Sievers, he joined the Sievers' research group at the Center of Pharmaceutical Biotechnology, University of Colorado, Boulder, CO. The main thrust of this research group is generation of fine drug particles, utilizing supercritical carbon dioxide as a micronizing agent. The dry particles generated are in the size range of 1 to 5 microns, which is optimum for pulmonary delivery. The group has successfully micronized proteins, peptides, antibodies, antibiotics, and many other small molecule drugs. Sievers formed a new bio-tech company (Aktiv-Dry, LLC, Boulder, CO) in 2002. (Visit www.aktiv-dry.com to learn more about CAN-BD Process)

Features of A Patented CAN-BD Process

(CO₂ Assisted Nebulization with Bubble Dryer Process)

- Generate micro-particles of drugs for pulmonary delivery
- Particles size is in the range of 1 to 5 microns
- Achieve no needle drug injection
- Process drug solutions at temperatures between 10° to 60°C
- Liquid CO₂ is used as a micronization agent
- Solvent of the drug solutions can be water or organic solvents
- We have dried and micronized drugs, antibiotics, antibodies and vaccines
- Micro-particles can be coated with a polymer for control drug release applications
- The process is continuous, and can easily be scaled-up
- Low capital equipment cost