

**MECHANICAL ENGINEERING DEPARTMENT
ME 8773-8774**

Dynamics and Control of Electro-Mechanical and Hydraulics System

by

Dr. Jae Lew
Principal Research Scientist
Eaton Innovation Center
Eaton Corporation
Eden Prairie, MN 55344

Wednesday, November 12, 2008
3:15 p.m. — Refreshments before the seminar
3:30 p.m. — Graduate Seminar
Room 1130 Mechanical Engineering

ABSTRACT — This presentation will discuss the application of control theory to various electro-mechanical-hydraulic systems that Dr. Lew has developed/led under government and industry R&D programs. He intends to share his experience and view on how control theory plays an important role in creating new functionality, higher productivity, better energy efficiency and safer environments for humans. His examples will include (1) Structural vibration control of the long-reach robotic arm for nuclear waste underground storage tanks; (2) Sea basing: Ship-to-ship cargo/vehicles transfer under relative motion; (3) Vehicle stability control thru active torque management; and (4) Electro-hydraulics actuator control system.

BIO — **Dr. Jae Lew** received his doctoral degree in Mechanical Engineering at the Georgia Institute of Technology and his master degree in Carnegie Mellon University. Since then, he has gained sixteen years of research and teaching experience in the field of Control, Dynamics, Robotics, and Mechatronics. This comprises some five years as a research scientist at Pacific Northwest National Laboratory, six years as an assistant/associate (tenured) professor at Ohio University, and five years as a senior principal scientist at the Eaton Innovation Center.

Recently, he received the 2007 O. Hugo Schuck Award for the best application paper in American Control Conference with Prof. Rajamani, 2006 Arch Colwell Merit Award in SAE World Congress, and 2007 Eaton Engineer of the Year.

Currently, Dr. Lew is the program manager for Eaton's Torque Management Program developing to various differential-based active stability control technologies. He is also responsible for inventing and driving control-related strategic growth initiatives thru technical innovation

Informal Faculty Luncheon: Wednesday, November 12, 2008, 12:00 noon. Meet in Room 1100 ME and walk to lunch with other faculty. Dr. Jae Lew will not be able to attend. Host: Prof. Rajesh Rajamani