

# MIT SEMINAR SERIES IN MANUFACTURING AND PRODUCTIVITY Fall 2005

Place: Room 35-225      Time: 12:00 P.M. Tuesday, November 15

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## Mechatronics in Samsung Electronics Today and Tomorrow

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Mechatronics refers to a multi-disciplinary engineering field combining mechanics, electronics and computing, which aims at enabling more powerful and versatile systems. Software is an integral part of such products and systems. Mechatronics flourished with the evolution of electrical motors, sensors, and micro-processors. From the early ages of Mechatronics, robots have made its way into automation where precise control and laborious work are required most, like the automobile industry. Over the past several years, Mechatronics has changed the electrical and electronic industry, both in terms of product design and manufacturing. Important challenges in the industry include designing of precision mechanism, more intelligent control, and higher reliability over time while maintaining lower cost. . The objective is to build smart products and intelligent machines.

Samsung Electronics has been in the forefront of digital technologies for DVDs, hard disk drives, printers, and numerous other consumer products which are basically Mechatronics devices. The manufacturing of semiconductor and LCD panel require a vast amount of equipment for hundreds of chemical and mechanical processes. Most of the processes are automated by the state-of-the-art Mechatronics technology, seamlessly integrating each process with multi-disciplinary technology and innovative spirit.

Samsung Electronics looks to leapfrog the problems of achieving lower cost and higher quality in manufacturing by advancing Mechatronics technology. Innovative design of equipment and software for faster and robust operation of manufacturing factories is pursued while keeping most of the manufacturing know-how secret by developing core technologies in-house. Mechatronics and its development in Samsung Electronics are discussed, with particular reference to applications-oriented research.

Pizza social to follow the seminar in the Given Lounge, Room 35-520.