

Monday, May 4, 2009

TC Yih is Guest Editor of Special Section of Drug Delivery Automation

T. C. Yih, Vice Provost for Research and Professor of **Engineering**, was a guest editor of a Special Section on Drug Delivery Automation in the April 2009 issue of the journal **IEEE Transactions on Automation Science and Engineering**. In their **editorial** (Volume 6, Pages 205-208), Yih and his coauthors write

"Drug delivery has attracted many researchers' interest in recent years from the medical and engineering communities. It is one of the fastest growing healthcare sectors. Sales of drugs incorporating drug delivery systems are increasing at an annual rate of 15%. By 2009, the U.S. drug delivery market alone is expected to be worth over 90 billion dollars.

The goal of drug delivery is to control the delivery, speed, and release of a drug without harming other tissues. This requires consideration of drug side-effects, as well as dynamics and stability of the drug. Approaches for drug delivery have advanced from traditional approaches to new methods using novel materials and physical or chemical effects.

Automation is especially needed for controlled drug delivery. One key component for controlled drug delivery system development is control mechanism design. However, many mechanisms have not been applied in practice, due to lack of proper automation techniques. Another challenge for drug delivery system automation is delivery in response to physiological needs of the human body, such as accurate insulin release to maintain homeostasis of the human body."

Yih is the director of Oakland's new **NanoTech Research & Development Institute**.

SUMMARY

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Modified by Brad Roth (roth@oakland.edu) on Monday, May 4, 2009

Article Start Date: Monday, May 4, 2009