

Research

GRANTS:

Project Title: Nonlinear/Switching Control Design for Constrained Control Systems with Application to Magnetic Suspension

Sponsor: National Science Foundation

Amount awarded: \$240,000

Duration: Sept 1, 2006 - Aug 31, 2009

PI: Tingshu Hu

Title: Tissue Engineered Embolization Scaffolds for the Treatment of Cerebrovascular Aneurysms

Sponsor: University of Massachusetts Worcester.

Anticipated value: \$100,000.00

Duration: 9/01/06 - 8/31/10.

PI: Mufeed MahD

JOURNAL PUBLICATIONS:

T. **Hu**, A. R. Teel and L. Zaccarian, "Stability and performance for saturated systems via quadratic and non-quadratic Lyapunov functions," IEEE Transactions on Automatic Control, 51(11), pp.1770-1786, 2006.

R. Goebel, A.R. Teel, T. **Hu** and Z. Lin, "Conjugate convex Lyapunov functions for dual linear differential equations," IEEE Transactions on Automatic Control, 51(4), pp.661-666, 2006.

T. **Hu**, "Nonlinear control design for linear differential inclusions via convex hull of quadratics," Automatica, accepted.

The article, **X. Wang**, K. Cooper, A. Wang, J. Xu, Z. Wang, Y. Zhang, and Z. Tu, "Label-free DNA detection on the surface of silica optical fiber tip," *Appl. Phys. Lett.*, Vol. **89**, 163901 (October 2006) has been selected for the November 1, 2006 issue of Virtual Journal of Biological Physics Research (<http://www.vjbio.org>).

CONFERENCE PRESENTATIONS:

T. **Hu**, L. Ma and Z. Lin, "On several composite quadratic Lyapunov functions for switched systems," to be presented at IEEE Conference on Decision and Control, San Diego, CA, Dec. 2006.

M. Massimetti, L. Zaccarian, T. **Hu**, A. R. Teel, "LMI-based linear anti-windup for discrete time linear control systems," to be presented at IEEE Conference on Decision and Control, San Diego, CA, Dec. 2006.

Faculty News:

An FTIR spectrometer has been set up in Prof. Xuejun Lu's Laboratory in Falmouth 206 and it is available to all interested faculty.

The FTIR is a Tensor 27 from Bruker Optics. The spectrum range of the current setup is 7500cm^{-1} to 370cm^{-1} . The resolution is 1cm^{-1} .

Calendar of Important Dates

7 Thursday

- Last Day for Faculty to Administer Quizzes and Examinations Prior to Final Examination Period

14 Thursday

- Last Day of Fall Semester Classes
- Last Day for Faculty to File Grades for Incompletes and Change of Course Grades for Spring Semester (2006) courses

15 Friday

- Reading Day

16 Saturday

- Fall Semester Examinations Begin

22 Friday

- Fall Semester Examinations End 6:00 P.M.
- Residence halls close at 6:00 P.M.

23 Saturday

- Make-up day for examinations postponed because of Weather.
- Winter Recess Begins

25 Monday

- Christmas