



DEPARTMENT OF MECHANICAL ENGINEERING

SEMINAR

Title: TISSUE ENGINEERING IN UROLOGY

Speaker: Prof. Dr. Peter Frey
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Date: 12 December 2011 (Monday)

Time: 3:30 p.m.

Venue: Room 7-37, Haking Wong Building, HKU

Diseases or congenital malformations of the human urinary tract might benefit from regenerative efforts by tissue engineering. The basics of urinary tract cells culturing, and in particular the development of a functional multilayered urothelial construct are discussed. The development of flat and tubular compressed collagen structures and their physical behavior *in-vitro* are presented. The functionality of tubular urethral structures is demonstrated in a rabbit model. Further compressed urinary tract cell-loaded collagen-polymer hybrid structures, studied *in-vitro* and *in-vivo* in a rodent model, are demonstrated. In addition to collagen, fibrin is discussed as a cell-carrier. The development of a novel advantageous engineered fibrin to which TG-aprotinin or KPI can be covalently bound to prevent early degradation is discussed. Also the technology of binding of IGF 1 to fibrin to promote smooth muscle growth is demonstrated and *in-vivo* results in a rat model are discussed. Early results in cell sorting by molecular beacons and their potential as marker of progenitor cells are presented.

ALL INTERESTED ARE WELCOME

For further information, please contact Dr. B.P. Chan at 2859 2632.