Micro/Nano Fluidics and Bio-Medical Applications

– Deans' Forum Lecture Series –

This is a four-day intensive course taught by the leading scientists from the Deans' Forum member institutions. The course systematically combines the fundamentals of micro/nano fluidics with cutting-edge bio-medical applications.

Prof. Charles Baroud
(Ecole Polytechnique)

Prof. Teruo Fujii
(The University of Tokyo)

Prof. Klavs F. Jensen
(Massachusetts Institute of Technology)

Prof. Takehiko Kitamori
(The University of Tokyo)

Prof. Kazuma Mawatari
(The University of Tokyo)

Prof. Ryo Miyake
(The University of Tokyo)

Prof. Madoka Takai
(The University of Tokyo)

Prof. Shu Takagi
(The University of Tokyo)

Prof. Martin Wiklund
(KTH Royal Institute of Technology)

COURSE SYLLABUS & SCHEDULE: (Engineering Building No. 8, Lecture Room 83)

Lectures (Basic): September 7th-9th

Date	Time	Theme		Lecturer
Sep. 7th	10:25-12:10	Fluidics	fluid equation	Shu Takagi (UTokyo)
	13:00-14:45	Fluidics	acoustofluidics	Martin Wiklund (KTH)
	14:55-16:40	Fluidics	wettability/droplet	Charles Baroud (Ecole Polytechnique)
Sep. 8th	10:25-12:10	Chemical Engineering	mixer, temperature control	Klavs Jensen (MIT)
	13:00-14:45	Chemical Engineering	transport phenomenon	Klavs Jensen (MIT)
	14:55-16:40	Chemical Engineering	electrophoresis / chromatography	Kazuma Mawatari (UTokyo)
Sep. 9th	10:25-12:10	Analytical Chemistry	optical detection	Charles Baroud (Ecole Polytechnique)
	13:00-14:20	Fabrication	materials / fabrication/bonding	Ryo Miyake (UTokyo)
	14:30-15:50	Fabrication	surface treatment	Madoka Takai (UTokyo)
	16:00-16:40	Special Lecture	Measuring swimming patterns of Paramecium in microchannels	Charles Baroud (Ecole Polytechnique)
	16:50-17:30	Special Lecture	Microscale Acoustofluidics: Acoustic Tissue Engineering	Martin Wiklund (KTH)

Lectures (Application): September 10th

Date	Time	Theme		Lecturer
Sep. 10th	10:25-12:10	Microscale Fluidics	biomedical	Martin Wiklund (KTH)
	13:00-14:45	Analytial Chemistry	biomedical / plant / chemical synthesis	Kazuma Mawatari (UTokyo)
	14:55-16:40	Physical Chemistry	micro-nano fluidics	Takehiko Kitamori (UTokyo)
	16:50-18:35	Others	tissue engineering	Teruo Fujii (UTokyo)