

Microfluidics and Microchip Technology Short Course

April 14, 2010; Fort Washington, PA; Holiday Inn

Course Description

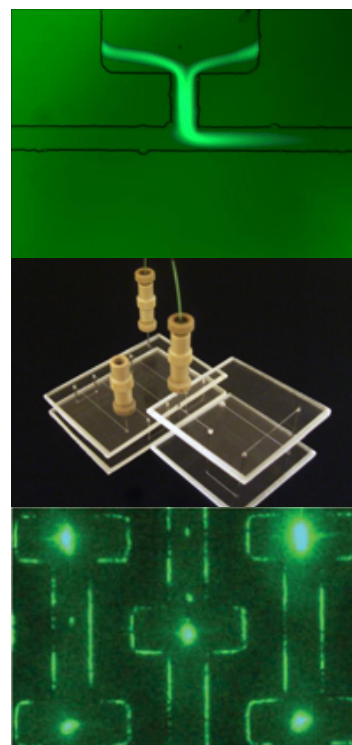
This course will serve as an introduction to microfluidics and the applications of this enabling technology to the chemical and life sciences. The compact overview will take a combined “chemistry” and “engineering” view of this important new field. The course will cover fundamental theories and practical aspects of fabricating microdevices and dealing with liquids in tiny confined spaces. The essential differences and design considerations when transferring between nano-, micro-, and macroscale handling of fluids will be discussed. Microfluidics applications are highly multidisciplinary, and several emerging areas will be presented including sample preparation, advanced separation strategies, nucleic acid methods, process monitoring, “-omics” applications, cellular analysis, and biosensors.

Instructors:

Don DeVoe, University of Maryland; Joe Foley, Drexel University;
Moses Noh, Drexel University; Jonathan Shackman, Temple University

Preliminary Schedule

<i>Time</i>	<i>Topic</i>	<i>Lead</i>
8:00 – 8:30	Registration and continental breakfast	
8:30 – 8:45	Introductions (continental breakfast continues)	Foley
8:45 – 9:00	What are microfluidics?	Shackman
9:00 – 9:15	An engineer’s view of microfluidics	Noh
9:15 – 9:30	Microfluidics industrial outlook	DeVoe
9:30 – 9:45	A chromatographer’s perspective	Foley
9:45 – 10:00	<i>Break</i>	
10:00 – 10:25	Silicon fabrication techniques	Noh
10:25 – 10:50	Glass fabrication techniques	Shackman
10:50 – 11:00	<i>Break</i>	
11:00 – 11:25	Polymer fabrication techniques	DeVoe
11:25 – 11:50	Flow theory in microchips	Noh
11:50 – 12:00	Open Discussion	All
12:00 – 13:00	<i>Lunch (included with registration fee)</i>	
13:00 – 13:30	Separation methods	Shackman
13:30 – 14:00	Multidimensional separations	DeVoe
14:00 – 14:30	Pumps, mixers, reactors	Noh
14:30 – 14:45	<i>Break</i>	
14:45 – 15:15	How small and how fast?	Shackman
15:15 – 15:45	Detection techniques and sensors	DeVoe
15:45 – 16:15	Body on a chip	Noh
16:15 – 16:30	On the horizon	DeVoe
16:30 – 17:00	Open Discussion	All



For more information (directions, registration, etc.), please go to: www.cfdv.org

Or contact:

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