IEEE Okanagan Subsection

Presents

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Digital Microfluidic Architectures for Lab-on-a-Chip Applications

Date: Thursday, October 14
Time: 4:30 PM– 5:30 PM
Place: UBC Okanagan, Room SCI 247

Talk Abstract: The UBC Okanagan Digital Microfluidics Research Group is an interdisciplinary research team comprised of Dr. Jonathan Holzman, Dr. Mina Hoorfar, Dr. Homayoun Najjaran and their student researchers. The digital microfluidics work of this group will be presented by Dr. Holzman in this seminar.

Digital microfluidics is an intriguing area of research, as it brings together electrical control concepts within microfluidic applications. Contemporary laboratory analyses, such as glucose testing, environmental monitoring or DNA/protein analyses, can be carried out within these microfluidic structures with greatly enhanced levels of sensitivity and the potential for high throughputs. These benefits are brought about by the micron-scales of the microfluidic architectures. Furthermore, the digital operation of these fluid control systems introduces the possibility of dynamic reconfigurability.

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Ultimately, a digital microfluidic structure can be tailored via software for numerous real-time fluid control applications.

The work of the UBC Okanagan Digital Microfluidics Research Group will be presented in this seminar. The benefits and challenges of digital microfluidics will be discussed in general, followed by an introduction to the group's new device technologies on digital microfluidic multiplexing.

Speaker Biography: Dr. Jonathan Holzman received his B.Sc. in Engineering Physics from the University of Alberta in 1998, and his Ph.D. in Electrical Engineering from the University of Alberta in 2003. In 2004 and 2005 he worked as a Postdoctoral Research Fellow at the Swiss Federal Institute of Technology (ETH) in Zürich, Switzerland. He is currently an electrical engineering Assistant Professor in the UBC School of Engineering at the Okanagan campus, where he conducts research on micro-sensor technologies within his Integrated Optics Laboratory. A major area of micro-sensor research for Dr. Holzman, on digital microfluidic technologies, will be the focus of this seminar.