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Ian Papautsky
Wanjun Wang
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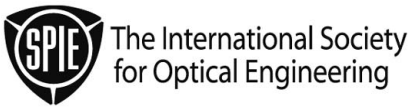

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Introduction

Welcome to San Jose, California, USA, and the 2007 *Microfluidics, BioMEMS and Medical Microsystems V* Conference, part of the MOEMS-MEMS Micro and Nanofabrication Symposium at SPIE Photonics West. The focus of this conference is to facilitate a technical forum to showcase and discuss recent advances in microfluidics, biomedical microelectromechanical systems (BioMEMS) and medical microsystems.

Application of microfabrication technologies to life sciences is perhaps one of the most exciting developments in the MEMS area in the recent years. In addition to many microfluidic devices, such as pumps, mixers, valves, and a variety of novel electrochemical or optical sensors, many different types of lab-on-a-chip (LOC) systems have been developed. Microfluidic devices and LOCs have generated interest in many application fields of chemistry, life sciences, medicine, and environmental engineering, due to numerous advantages over the existing macroscale systems including compact size, disposability, higher speed and throughput of analyses, increased functionality, and decreased sample volumes.

We are pleased with our conference program that includes six invited speakers, who are leaders in their respective filed of research. These speakers represent both academia and industry in the USA and Europe: Holger Becker (microfluidic ChipShop, Germany), Yves Fouillet (CEA-LETI, France), Michael McShane (Texas A&M University, USA), Bruce Gale (University of Utah, USA), John Pong (Nanonex, USA), and Albert Henning (Aquarian Microsystems, USA). The technical program is organized into six sessions: Lab-on-a-Chip (I & II), Microfluidics (I & II), Fabrication Technologies, and Sensors. This year we also have a burgeoning poster session full of high-quality presentations. The selected papers discuss new research on various aspects of microfluidics and BioMEMS, including applications of LOCs to DNA amplification and analysis; biosensors; microfluidic devices for pumping, mixing, and valving; polymer fabrication technologies for micro and nano fluidics; and optical detection in LOCs. These papers represent a short glimpse into the current technology, and hopefully offer a preview of where BioMEMS and LOC technologies are heading.

We would like to thank all of the contributing authors. It is their participation and hard work that ultimately will make this meeting a success. We are also grateful to SPIE for their continuing support of this meeting. We hope that you find the meeting exciting, stimulating, and enjoyable.

Ian Papautsky
Wanjun Wang