

## **Biomedical Sensors and Subsystems Projects**

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### **A Near Infrared Opto-mechanical Intracranial Pressure**

Mostafa Ghannad-Rezaie and Nikos Chronis

### **BioBolt: A Minimally-Invasive Neural Interface for Wireless Epidural Recording by Intra-Skin Communication**

Sun-Il Chang, Khaled AlAshmouny, and Euisik Yoon

### **Braille-Driven Aqueous Two-Phase System Droplet Microfluidic System**

David Lai, John P. Frampton, Hari Sriram, and Shuichi Takayama

### **Micro- & Nanofluidics and Cellular Environomics**

Toshiki Mastuoka, Byoung Choul Kim, and Shuichi Takayama

### **Constant Flow-Driven Microfluidic Oscillator for Different Duty Cycles**

Sung-Jin Kim, Ryuji Yokokawa, Sasha Cai Lesher-Perez, and Shuichi Takayama

### **A 4 $\mu$ W/Ch Fully Integrated Analog Front-End Scaled Toward Massive Parallel Neural Recording**

Khaled Al-Ashmouny, Sun-Il Chang, and Euisik Yoon

### **Silicon and Parylene Intracortical Neural Probes for Chronically-Stable Recording**

Daniel Egert, Rebecca L. Peterson, and Khalil Najafi

### **CD4+ T-Cell Counting Biochip for Monitoring HIV/AIDS in Resource Limited Settings**

Anurag Tripathi and Nikos Chronis

### **High-Throughput Photodynamic Therapy (PDT) Screening Chip with Oxygen, Photosensitizer and Light Exposure Controls**

Xia Lou, Gwangseong Kim, Yong-Eun Lee Koo, Raoul Kopelman, and Euisik Yoon

### **Ultrasonic Microresonators for Neuron Stimulation**

Rahman Sabahi-Kaviani and Nikos Chronis

### **Microrheometers for Simple and Complex Fluids**

Eric Livak-Dahl and Mark A. Burns

### **Micro- and Nano-structured Dynamic Fluidic Systems**

Ramsey Zeitoun, Thomas Westrich, and Mark A. Burns

### **Dynamic Control of Nanoliter Droplet Volume and Composition**

Ramsey Zeitoun, Marcus Goudie, and Mark A. Burns

### **Microdroplet Enabled Parallel Co-Cultivation of Symbiotic Microbial Communities**

Jihyang Park and Mark A. Burns

**Multi-Analyte Detection Using Asynchronous Magnetic Bead Rotation**

Irene Sinn and Mark A. Burns

**Single Cells to Spheroids: Adaptable Single Cell Handling in Microfluidics for Cancer Stem Cell Screening**

Patrick Ingram, Jaehoon Chung, Kun Yang, Ronald Buckanovich, Max Wicha, and Euisik Yoon

**Smart Rapid Palatal Expander for Pediatric Cleft Lip and Palate Patients**

Venkatram Pepakayala, Dongmin Yoon, Yoonmyung Lee, Tao Li, Yogesh Gianchandani, David Blaauw, Sunil Kapila and Jeanne M. Nervina