

# INTERNATIONAL MICROFLUIDICS CONGRESS

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International Conference on

# ADDICTION RESEARCH AND THERAPY

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### Design and fabrication of integrated EWOD microfluidic chips for biological applications

TL Biolabs, Santa Clara, California USA Integration of multiple step bioassays on a single platform is a crucial technological development in the field of microfluidics. While various current microfluidic solutions are advancing rapidly, it is challenging to integrate different fabrication techniques on a single device in order to solve a complex problem. Every biological problem poses a unique challenge and the lab on a chip solution has to adapt to the environment of that problem at hand. Electrowetting on dielectric (EWOD) is an emerging technique to manipulate the movement of droplets on a microfluidic device. Electric field is used to control the location and state of every droplet individually

such that the droplet can be moved, mixed with other, or split into multiple droplets. Such a facility aids to establish a complex assay on the chip. Some integration oriented work has been reported previously [1, 2] which demonstrates the usefulness of integrating a variety of fabrication techniques on the same chip. This session will cover different fabrication and design routes to adapt to various challenges in a complex biological application for microfluidic device; design techniques and various materials and their compatibilities to build a working chip housing a bio-application.

### Biography

Manasi Rajee is a microfluidics R&D engineer working in Bay Area, California. She is working at TL Biolabs and developing diagnostic devices for affordable testing of infectious diseases. She holds training in Biomedical Engineering and Electronics Engineering. Manasi has experience in the design and fabrication of a variety of lab-on-a-chip devices. She developed a number of application specific and high-throughput-attempting micro fabrication methods during her time at JBEI that led to a patent. Her microfluidic roots are based in Hui lab at UC Irvine where she developed microfluidic digital logic circuits for on-chip automation of lab processes which led to multiple publications, presentations and a national award. She is involved in multiple conferences and technical committees in field of Microfluidics.

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