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# MS Thesis Announcement

## Development of Self-Aligned Interdigitated Electrodes within a Microfluidic Channel for an Electrochemiluminescence Sensor

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Abstract

The aim of this work was to develop a fabrication sequence for forming microchannels with integrated, interdigitated electrodes using only one lithographic step as a platform for developing electrochemiluminescence biosensors. The microfluidic channels and electrode structures are formed by contact lithography using a negative tone photoresist (SU-8), and the pattern contains both the channel structure and an array of walls that are 4mm long, 20 microns wide, 50 microns tall and are spaced 50 microns apart from each other. The electrodes are formed by coating metal on the walls of the polymer by electron beam evaporation through a mask by tilting the substrate on both sides at an angle, thereby allowing for a large selection of electrode materials without the need for multiple lithographic steps or the need to directly pattern the metal. The approach takes advantage of the geometry of the pattern to coat only the sidewalls of the polymer without electrically connecting them through the base of the channel.

Committee Chair: Dr. Paul Ruchhoeft
Committee Members: Dr. Dmitri Litvinov
Dr. Richard Willson

Place: ECE Conference Room
Date: 09/11/2012
Time: 3 pm