## SIMULATION OF A 5 MICRON CRITICAL DIMENSION ELECTRO OPTIC ADAPTIVE MICROLENS USING SUPREM SIMULATION SOFTWARE. *P. Whiting* and D. Ewbank\*, Department of Microelectronic Engineering, pgw5378@rit.edu

One of the most commonly used software packages in all semiconductor modeling is the SUPREM suite of simulation programs. This suite includes Athena, a program which allows the user to build device structures, and Atlas, which is used to run electrical simulations on a device that was built and defined in Athena. In these tools, any sort of material or process may be selected from a list of available materials or processes or may be defined explicitly by the user. This versatility makes SUPREM capable of modeling nearly any imaginable micro-electronic device used in the world today. The purpose of this experiment was to build a device structure that would allow a user to run electrical simulations on the pixels of an Electro Optic Adaptive Microlens using Polymer Dispersed Liquid Crystals (PDLC). Following device creation, material parameters for PDLC would be input into the model and several tests would be performed in order to determine the electrical field characteristics between pixels with differing or uniform voltage biases. In addition, the spacing between the structures would be tested for any electrical current, a non-ideality for the device being fabricated. The results of this experiment were the confirmation that no current was passing between the different structures of the device being simulated as well as the discovery of significant nonuniformities in electrical field between devices with differences in voltage in excess of a hundred volts.