

FABRICATION AND TESTING OF A RESISTIVE CHEMICAL SENSOR

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A chemical sensor was designed, fabricated, and tested as part of a Science Research Program between Naples High School and Microelectronic Engineering at Rochester Institute of Technology. The chemical sensor consisted of a polymer carbon film in contact with interdigitated gold electrodes. The electrical resistance is measured using an ohmmeter. Sensed chemical vapors cause the polymer to swell and results in an increase in electrical resistance. The sensor response as a function of time was measured while presenting various amounts and types of chemical vapors. The sensors response and recovery time where found to be a function of the type of chemical and its concentration.