

32f Design and Fabrication of Micromachined Sensor Platforms

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Microhotplate devices are novel platforms for conductometric gas sensing applications. We have designed an array of microhotplate devices using Taiwan Semiconductor Manufacturing Corporation's 0.35 μ m process. The goal is to suspend (by etching away surrounding material) microhotplate structures using: 1) a plasma etch to expose the silicon substrate and 2) tetramethylammonium hydroxide to perform an anisotropic wet etch of the silicon substrate. This paper outlines the work completed thus far in the design, fabrication and processing of the devices and a summary of the future work to develop a procedure to fabricate a microhotplate-based sensor device.