

**GENERATION OF RFIC ELECTRODE PATTERNS
USING ELECTRON BEAM LITHOGRAPHY AND WET
ETCHING CHARACTERISTIC OF PZT THIN FILM**

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ABSTRACT

This thesis reports on the fabrication technique of electrode pattern using e-beam lithography and wet etching process on lead zirconate titanate (PZT) thin film. The patterns were created using *Raith* software. Polymethyl methacrylate (PMMA) resist was used in e-beam lithography process to form the pattern on the surface of the sample. The purpose of PMMA is to protect the PZT layer.

In order to find the most suitable etchant for PZT, the exposed areas on the PZT thin film were etched in various composition of wet etchant and were examined using scanning electron microscope (SEM). From the SEM images obtained, it was found that etching with the combination of 0.5HF:5HCl:10NH₄Cl:50H₂O for 10 second showed the best etching characteristic.

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