

Abstract Submitted  
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**Micromolding fabrication of SiC SPM probes** CHIAYUN WU, University of Massachusetts Lowell Dept. of Physics, LIAN DAI, CARLOS HERNANDEZ, University of Massachusetts Lowell Dept of Electrical and Computer Engineering, DANIEL SCHMIDT, University of Massachusetts Lowell Dept of Plastics Engineering, JOEL THERRIEN, University of Massachusetts Lowell Dept of Electrical and Computer Engineering — Micromolding techniques have been employed to form SiC cantilevers on silicon substrates for use in SPM. A pre-ceramic polymer is molded into the desired probe shape and then converted to SiC via pyrolysis. Due to SiC's much higher softening temperature compared to silicon, this approach may enable AFM scanning of very high temperature surfaces. Additionally, the use of polymer molding techniques can lead to the creation of cantilever cross sections with unconventional geometries allowing for higher resonant frequencies while maintaining a length  $> 100\mu\text{m}$ .

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