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MATERIALS AND STRUCTURES SYMPOSIUM (C2)
Specialized Technologies, including Nanotechnology (8)

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# ENHANCED MICROMACHINE FABRICATION (ENTECH)

**Abstract**

Not only Micro – electric circuits but also Mechanical devices, can be miniaturized and batch – fabricated which can interface extensively with the outside world. The advent precision 3 – dimensional micromachining has seen the birth of an exciting and revolutionary field called Micro Electro Mechanical Systems (MEMS).

MEMS Technology can be used to produce complex electrical, mechanical, fluidic, thermal, optimal, and magnetic structures, devices, and systems on a scale ranging from organs to sub – cellular organelles. MEMS parts tend to be rugged, respond rapidly, consume little power, and occupy small volume, handle microscopic devices with finesse and are often much mess expensive than conventional macro parts. It has been largely adopted from the IC industry and is foreseen that MEMS will support the next generation of the communication systems which will have to exhibit ultimate performances in terms of frequency range, noise, linearity, characteristics, cost and weight.

However, it is becoming clear that if MEMS were to become commercially viable and successful and industrial and academic communities require tackling some of the technical and commercialization issues impending the market presence of such systems. Like in any emerging field, most of the developments have therefore been a haphazard array of

1. New fabrication techniques 2. New materials 3. New device structures for a host of sensor and actuator applications

This paper will present a brief description of the various Micromachining processes and Special focus on New Enhanced Micromachining Technology in light of the efforts for various Industrial, Bio – medical, Hi – Tech, Safe and Arming applications. A synopsis of actions required for MEMS industry to maximize productions is also presented.

Key Words: EN TECH: Enhanced Micromachining Technology, MEMS: Micro Electro Mechanical Systems, Silicon Micromachining.