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Materials Science of Microelectromechanical Systems (MEMS) Devices IV

Editors: Arturo A. Ayón, Thomas E. Buchheit, Harold Kahn and S. Mark Spearing

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PREFACE

In recent years, MEMS has successfully acceded to several markets, including pressure sensors, gyroscopes, accelerometers, fluidics and data storage, representing a total revenue of some \$2 billion in 2000. However, MEMS has the potential to offer reliable and cost-effective solutions to many other fields. In fact, current market predictions place the total sales of MEMS devices will exceed \$7 billion in 2005.

Thus the current expectation is that we will witness in the near future the appearance of diverse MEMS structures for power generation, propulsion, biomedical applications, optical switching, infrared sensing, microphones and displays, to name a few. This plethora of activity is being made possible due to the increased understanding of the properties of the micromanufacturing materials involved, the availability of processing equipment with enhanced capabilities, and the effort of a large number of researchers and scientists.

The fourth MRS MEMS symposium, "Materials Science of Microelectromechanical Systems (MEMS) Devices IV," held November 25–28 at the 2001 MRS Fall Meeting in Boston, Massachusetts, focused on the materials science of MEMS structures and the films involved to create those structures. Although much remains to be done and understood, the current market penetration of MEMS devices already demonstrates that the effort has proceeded in the right direction.

We hope that additional symposia will follow to continue the development of the MEMS materials science infrastructure, and that the effort will be extended to the nano world.

Arturo A. Ayón
Thomas F. Buchheit
Harold Kahn
S. Mark Spearing

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