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978-1-107-40839-5 - Microelectromechanical Systems—Materials and Devices II: Materials
Research Society Symposium Proceedings: Volume 1139

Editors: Srikar Vengallatore, Jörg Bagdahn, Norman F. Sheppard and S. Mark Spearing
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**MATERIALS RESEARCH SOCIETY
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Microelectromechanical Systems—Materials and Devices II

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PREFACE

Over the past fifteen years, Microelectromechanical Systems (MEMS) have transitioned from occupying a technology niche to having major industrial significance. The worldwide market for MEMS is now approximately \$10 billion, and the total value of systems enabled by MEMS is several orders of magnitude higher than this figure. Initially, commercially successful MEMS utilized pre-existing materials and processes derived from conventional silicon-based semiconductor microelectronics. As the market has grown the material and process sets have broadened and departed from their semiconductor roots. The opportunities created by this broadening have generated a vibrant research community working on new materials and processes. In addition, during this period, MEMS and microfabrication have become important tools for the development and characterization of materials in general. Beginning in 1998, a series of Materials Research Society symposia has documented these trends. This proceedings volume reports on research presented at the latest of these symposia, Symposium GG, "Microelectromechanical Systems—Materials and Devices II," which was held December 1–2 at the 2008 MRS Fall Meeting in Boston, Massachusetts.

The topics covered by the symposium and in these proceedings provide an accurate reflection of the breadth of topics currently under investigation in this field. Many novel materials and accompanying processes are discussed, as well as detailed analyses of more conventional materials and processes. A consistent theme in previous symposia has been the need to conduct accurate material property assessment at the relevant length scales and the need for suitable metrology tools to support the introduction of new materials. These topics are well represented in the present proceedings. We also note the increasing trend towards the inclusion of papers in the proceedings that demonstrate the close coupling between the materials, processes and the MEMS they have been developed for. The growth in the number of papers with this character is a positive indication of the highly interdisciplinary nature of the field and also the extent to which researchers in the community have embraced the need to address system design issues as well as fundamental material science.

There is every indication that the continued growth of MEMS as an important area of technology will continue to provide a strong motivation for the accompanying development of materials and processes. We fully expect that the MRS symposium will also continue to provide a record of these developments.

Srikar Vengallatore
Jörg Bagdahn
Norm Sheppard
S. Mark Spearing

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