

Foreword

The symposium on Materials and Processes for Submicron Technologies II, sponsored by the TMS Electronic, Magnetic & Photonic Materials Division (EMPMD), Thin Films & Interfaces Committee, was held in Seattle, WA from February 17 to February 21, 2001. This symposium was the second in a series devoted to advanced research in thin-film materials and processes for microelectronic systems of submicron-size features. With 25 invited and contributed presentations, this symposium provided an interactive forum for multidisciplinary discussions on the science and technology of advanced materials and processes, and critical reliability issues in microelectronic device fabrication. A majority of the presentations now appear in this special issue of the *Journal of Electronic Materials* as peer-reviewed papers. These papers were critically selected and reviewed by the guest editors and reviewers based on the value and impact of their research in advanced microelectronic materials and processes. Topics discussed in this special issue include recent advances in silicon device processing, electromigration reliability studies on damascene Cu interconnects, an *in-situ* electron microscopy investigation on mechanical properties of nano-scale thin films, fundamental understanding of chemical mechanical planarization, and experimental and simulation studies on thin-film microstructure evolution.

The guest editors are thankful to the invited and contributed speakers, session chairs, and manuscript reviewers for their valuable contribution to this special issue. Special thanks go to Mahesh Sanganeria at Novellus Systems and Charlotte Kobert at TMS for their support in organizing this symposium. The guest editors are also thankful to Theodore C. Harman at MIT Lincoln Laboratory and Ms. Shirley A. Litzinger at TMS for their continuing support for publishing the papers from this series of symposia in special issues of the *Journal of Electronic Materials*.

Seung H. Kang
Device and Module R&D
Agere Systems
Orlando, Florida

N.M. Ravindra
Department of Physics
New Jersey Institute of Technology
Newark, New Jersey

Guest Editors