Materials, Technology and Reliability for Advanced Interconnects and Low-k Dielectrics—2004
Materials, Technology and Reliability for Advanced Interconnects and Low-k Dielectrics—2004

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PREFACE

This proceeding's volume contains 60 papers presented at Symposium F, "Materials, Technology and Reliability for Advanced Interconnects and Low-k Dielectrics," which was held April 13–15 at the 2004 MRS Spring Meeting in San Francisco, California. Over half of the contributions are from universities and national research institutes, testifying to the continuing recognition of the stimulating scientific and engineering challenges advanced interconnects bring to the microelectronics industry. Furthermore, the global importance of the field is apparent by the large number of contributions coming from outside the United States.

The issues addressed in this symposium cannot be dispelled as to simply selecting a low-k material and integrating it into a copper damascene process. The intricacies of the Back End for sub-100nm technology include novel processing of low-k materials, employing pore sealing techniques and capping layers, introducing advanced dielectric and diffusion barriers, and the development of novel integration schemes, in addition to the concerns of performance, yield, and reliability appropriate to nano-scaled interconnects. Although many challenges continue to impede progress along the ITRS roadmap, the contributions in this proceedings confront them head-on in order to provide a scientific understanding of the issues so that solutions may be achieved in the future.

The development of both the symposium and this proceedings volume would not have been possible without the support of the Materials Research Society and the assistance of the MRS staff. We thank them for their dedication and diligence. The financial support of the following organizations is also deeply appreciated:

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