Materials, Integration and Packaging Issues for High-Frequency Devices

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PREFACE

This volume is a collection of half of the papers given at Symposium B, the first MRS symposium on "Materials, Integration and Packaging Issues for High-Frequency Devices," held December 1–3 at the 2003 MRS Fall Meeting in Boston, Massachusetts. The symposium grouped together the various issues of materials technology that are key factors for the advancement of high-frequency devices. The competition for better performing mobile phones is the main driving factor in this field. In mobile phones, passive components constitute 70–90% of the number of components, volume, and costs. The spirit of the conference was to bring together scientists of the various branches in processing, characterization, packaging, device design and applications of passive devices, and to offer the possibility to gain an overview over the various paths on which technology of passive components is progressing. The main topics were improvements in low-temperature co-fired ceramics, microstructure–property relationships in perovskites for new materials compositions with lower firing temperatures for microwave dielectrics with high-quality factors, tunable ferroelectrics allowing low-cost solutions for frequency tuning and phase shifters, new integration platforms and packaging concepts, embedded capacitors, integration of RF switches based on MEMS technology, bulk acoustic wave resonators, and finally above chip integration. All seven sessions were well attended, and we were very pleased with the favorable response of the attendees.

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