

Electronic packaging and interconnections have experienced exciting growth stimulated by the recognition that systems, not just silicon, provide the solution to evolving applications. In order to have a high density/performance/quality/reliability, low cost, and light weight system, a more precise understanding of the system behavior is required. Mechanical and thermal phenomena are among the least understood and most complex of the many phenomena encountered in electronic packaging systems and are found on the critical path of nearly every design and process in the electronics industry. *In recognition of the growing importance of thermal and mechanical responses in electronic packaging systems, the American Society of Mechanical Engineers (ASME) Electrical and Electronic Packaging (EEP) Division sponsored several symposia at the 1991 ASME Winter Annual Meeting (WAM), December 1-6, in Atlanta, Georgia. Scientists and engineers converged together to share their problems, findings, and solutions in applying the principles of mechanics to electronic packaging and interconnections. This special volume of the Transactions contains 20 peer-reviewed papers selected from the Symposium on Mechanics of Surface Mount Assemblies.*

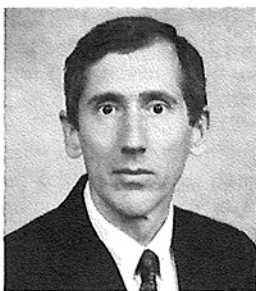
The selected 20 papers included in this volume represent a cross section of the topics of the symposium and reflect the state of the art in mechanical and thermal design, modeling, analysis, and testing of surface mount systems. The collection begins with seven papers dealing with the fundamental aspects of solder materials. The next two papers present thermomechanical fatigue life prediction of solders. The next four papers discuss fatigue phenomena of solder joints and component leads and are followed by two papers which examine the thermal characterization and behavior of multilayered strips. The next two papers deal with the molded plastic leaded chip car-

riers subjected to mechanical and thermal loads. The next paper determines the ductility of a copper film and is followed by a paper dealing with the materials and structures for multichip modules. The special topics include a paper describing the Ramberg-Osgood parameters for eutectic solder.

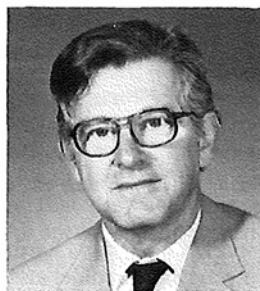
The multiplicity of disciplines involved in designing, analyzing, testing, and solving the problems associated with mechanical and thermal characterization of electronic packaging and interconnections is evident in the papers presented in the volume. The EEP Division, and more generally ASME, provided a common meeting ground for mutual education and enlightenment. It is hoped that the present collection of papers will stimulate the reader to the challenges and opportunities presented by mechanical and thermal phenomena in electronics packaging. We thank the attendees, reviewers, and especially the authors for their help, contributions, and cooperation in preparing this issue. It is through their efforts that our JOURNAL OF ELECTRONIC PACKAGING remains a dynamic and interesting organ.

Please join us again this year, when we meet at the ASME WAM, November 8-13, 1992, in Anaheim, California. More than 60 papers in applying the principles of mechanics to electronic packaging systems will be presented.

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