

JOINING TECHNOLOGIES FOR THE 1990s

**Welding, Brazing, Soldering,
Mechanical, Explosive,
Solid-State, Adhesive**

Edited by

John D. Buckley and Bland A. Stein

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Foreword

This book presents recent advances in joining technologies for the 1990s—welding, brazing, soldering, mechanical fastening, explosive welding, solid-state bonding, and adhesive bonding—based on the proceedings of a recent conference held at Langley Research Center. A major consideration in the fabrication of any commercial, military, or space products is attachment systems which are safe and reliable. The subject matter covered includes technology developed in current research programs relevant to welding, bonding, and fastening of structural materials, for fabricating structures and mechanical systems used in the aerospace, automotive, and related industries.

Specific topics include equipment, hardware and materials used when welding, brazing, and soldering; mechanical fastening; explosive welding; use of unique selected joining techniques; adhesive bonding; and nondestructive evaluation. A concept of "The Factory of the Future" is presented, followed by advanced welding techniques, automated equipment for welding, welding in a cryogenic atmosphere, blind fastening, stress corrosion resistant fasteners, fastening equipment, explosive welding of different configurations and materials, solid-state bonding, electron beam welding, new adhesives, effects of cryogenics on adhesives, and new techniques and equipment for adhesive bonding.

This book presents a substantial amount of technical data pertinent to innovative techniques for joining advanced materials and structures.

The information in the book is from *Welding, Bonding, and Fastening* edited by John D. Buckley and Bland A. Stein, NASA Langley Research Center, September 1985. This is the proceedings of a symposium sponsored by the National Aeronautics and Space Administration, the American Society for Metals, the George Washington University, the American Welding Society, and the Society of Manufacturing Engineers, held at NASA's Langley Research Center, Hampton, Virginia, October 1984.

The table of contents is organized in such a way as to serve as a subject index and provides easy access to the information contained in the book.

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