

**THERMAL  
STRESSES  
IN SEVERE  
ENVIRONMENTS**

# **THERMAL STRESSES IN SEVERE ENVIRONMENTS**

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## PREFACE

This volume of Thermal Stresses in Materials and Structures in Severe Thermal Environments constitutes the proceedings of an international conference held at Virginia Polytechnic Institute and State University in Blacksburg, Virginia, USA, on March 19, 20 and 21, 1980.

The purpose of the conference was to bring together experts in the areas of heat transfer, theoretical and applied mechanics and materials science and engineering, with a common interest in the highly interdisciplinary nature of the thermal stress problem. It is the hope of the program chairmen that the resulting interaction has led to a greater understanding of the underlying principles of the thermal stress problem and to an improved design and selection of materials for structures subjected to high thermal stresses.

The program chairmen gratefully acknowledge the financial assistance for the conference provided by the Department of Energy, the National Science Foundation, the Army Research Office and the Office of Naval Research as well as the Departments of Engineering Science and Mechanics and Materials Engineering at Virginia Polytechnic Institute and State University. A number of professional societies also provided mailing lists for the program at no nominal cost

The Associate Director, Mr. R. J. Harshberger and his staff at the Conference Center for Continuing Education at VPI and SU should be recognized especially for their coordination of the conference activities, lunches and banquet. Provost John D. Wilson gave a most enlightening and provocative after-dinner speech. Finally, we also wish to thank our secretaries: Mrs. B. Johnson, Mrs. P. Epperly and Mrs. M. Taylor for their patience in helping us with typing of many of the manuscripts and the almost endless stream of correspondence.

Blacksburg, Virginia  
March 21, 1980

D. P. H. Hasselman  
R. A. Heller

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