Thermophysics: A Healthy and Active Discipline

I WISH to state first that it has been both a pleasure and an honor to have compiled this JSR special issue on thermophysics. I thank Al Crosbie, Chairman of the AIAA Technical Committee for Thermophysics, for selecting me to compile this special issue. I specially thank Woody Waesche, Editor-in-Chief of JSR, for his guidance and patience throughout the preparation of this issue. It has been an honor to work with Woody on this project: he allowed me to "get on with the job" as I saw fit but was always available for consultation as the project evolved. Thanks, Woody. I thank the authors for providing the high quality manuscripts from which this issue was compiled, and for their timely response with revisions, re-typing, etc. Finally, I thank all reviewer who participated in the review of manuscripts. The success of such a venture as this depends crucially on the effort, attention, and thoroughness of reviewers in providing their reviews promptly. This was done in exemplary fashion for this issue.

As indicated by Woody, this issue comprises papers based on material extracted from that prepared for the 1985 20th Thermophysics Conference. These papers encompass the subject areas of thrusters and rocket flows, contamination, systems studies, heat pipes, and thermal protection, in addition to the general area of thermophysical analysis. The papers have been broadly grouped accordingly, and are presented in the above sequence; they will be of interest to members of the thermophysics community and to others.

The papers by Legge and Hueser deal with various aspects of thrusters and rocket flows, including both experimental measurement and analysis reporting. The contamination papers deal with contamination experienced as a result of rocket stage separation, as reported by Allègre, as well as with contamination resulting from on-board payloads and systems, as reported by Scaldione, Ehlers, and Neff. Systems studies of various spacecraft systems are reported in the papers by Kittel, Otterstedt, and Papula, and in the synoptic by Kuriyama. These studies include examination of new and novel spacecraft systems. A heat pipe paper dealing with performance characteristics of liquid metal pipes, with excess liquid influences in axially grooved pipes, and with high Reynolds and Mach number internal flows, is provided by Prenger. Thermal protection systems including carbon ablation, liquid streams, and multicomponent composite systems are examined by Muntz and Stewart. Thermophysical analysis is provided in the papers of Liu, Cline, and Pitts.

The above spectrum of papers, each dealing with certain aspects of the application of thermophysics, demonstrates that the discipline is indeed healthy and active, there being, in addition, a segment of activity dealing with fundamental and theoretical aspects of the discipline which is not represented in this issue. As noted by Dr. Waesche in his editorial, not all papers dealing with thermophysics will find themselves in the new *Journal of Thermophysics and Heat Transfer*. However, the field is rich in activity and there is an ample supply of material to support the new journal. JTHT will provide a more concentrated forum for the communication of technological developments within the thermophysics and heat transfer community.

I again thank Woody for his cooperation in the preparation of this special issue and anticipate a harmonious and cooperative environment of coexistence of JTHT with JSR as the new journal evolves.

Gerald E. Schneider
Guest Editor