

Advanced Marine Vehicles Newsletter

The first issue of AIAA's new quarterly four-page *Advanced Marine Vehicles Newsletter* has been mailed free of charge to 2000 Members who either subscribe to the *Journal of Hydronautics*, have profiles in advanced marine vehicles, or were recommended by the Marine Systems and Technologies Committee. Editor Joseph F. Sladky, Jr., who heads mechanical and marine engineering at Giannotti & Associates and serves on the TC, intends to feature reports on technical developments, news of people and activities, and a calendar of events.

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From the AIAA Progress in Astronautics and Aeronautics Series..

AERODYNAMIC HEATING AND THERMAL PROTECTION SYSTEMS—v. 59 HEAT TRANSFER AND THERMAL CONTROL SYSTEMS—v. 60

Edited by Leroy S. Fletcher, University of Virginia

The science and technology of heat transfer constitute an established and well-formed discipline. Although one would expect relatively little change in the heat transfer field in view of its apparent maturity, it so happens that new developments are taking place rapidly in certain branches of heat transfer as a result of the demands of rocket and spacecraft design. The established "textbook" theories of radiation, convection, and conduction simply do not encompass the understanding required to deal with the advanced problems raised by rocket and spacecraft conditions. Moreover, research engineers concerned with such problems have discovered that it is necessary to clarify some fundamental processes in the physics of matter and radiation before acceptable technological solutions can be produced. As a result, these advanced topics in heat transfer have been given a new name in order to characterize both the fundamental science involved and the quantitative nature of the investigation. The name is Thermophysics. Any heat transfer engineer who wishes to be able to cope with advanced problems in heat transfer, in radiation, in convection, or in conduction, whether for spacecraft design or for any other technical purpose, must acquire some knowledge of this new field.

Volume 59 and Volume 60 of the Series offer a coordinated series of original papers representing some of the latest developments in the field. In Volume 59, the topics covered are 1) The Aerothermal Environment, particularly aerodynamic heating combined with radiation exchange and chemical reaction; 2) Plume Radiation, with special reference to the emissions characteristic of the jet components; and 3) Thermal Protection Systems, especially for intense heating conditions. Volume 60 is concerned with: 1) Heat Pipes, a widely used but rather intricate means for internal temperature control; 2) Heat Transfer, especially in complex situations; and 3) Thermal Control Systems, a description of sophisticated systems designed to control the flow of heat within a vehicle so as to maintain a specified temperature environment.

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