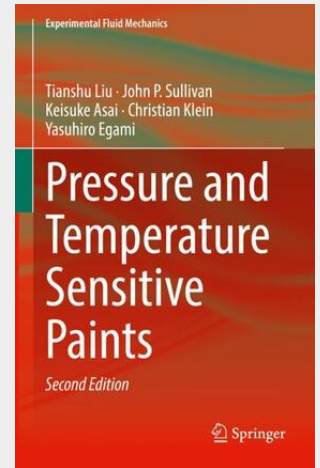


Pressure and Temperature Sensitive Paints

This new edition describes pressure and temperature sensitive paints (PSP and TSP) in global surface pressure and temperature measurements in aerodynamics and fluid mechanics. The book includes the latest progress in paint formulations, instrumentation, and steady and unsteady aerodynamic measurements in various facilities including low-speed, transonic, supersonic and hypersonic wind tunnels. The updated technical aspects of PSP and TSP in the book will be useful for students and researchers in experimental aerodynamics and fluid mechanics.

Luminescent molecule sensors, called pressure-sensitive paint (PSP) and temperature-sensitive paint (TSP), measure factors essential for understanding the aerodynamic performance and heat transfer characteristics of flight vehicles. They provide a powerful tool for experimental aerodynamicists to obtain a deeper understanding of the rich physical phenomena in complex flows around a flight vehicle. This book helps the reader to understand the physics and chemistry and the capabilities of PSP and TSP. It provides an overview of the wide scope of applications and explains the system requirements for using these sensors. The book also includes an extensive table of properties of PTP and TSP. As such, it is a thorough and up-to-date coverage of the underlying physics and applications of luminescent molecules designed for global pressure and temperature mapping



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