PREFACE

This set of Proceedings contains the papers presented at the *Third International Symposium on Turbulence and Shear Flow Phenomena* (TSFP) held at the Sendai International Center, Sendai, in the period 24-27 June 2003. This follows the two successful Symposia held in Santa Barbara, California in September 1999, and in Stockholm, Sweden in June 2001.

The TSFP series of symposia was conceived in 1998 as a successor to the highly regarded series of *Symposia on Turbulent Shear Flows* (TSF), which concluded with the 11th Symposium in 1997. The new series began with a commitment to broaden the scope, so as to cover the increasing breadth of application areas relevant to turbulence research.

TSFP symposia follow, broadly, the well-tested TSF philosophy: a bias towards fundamentals; a balance between experimental, computational and analytical research; and the inclusion of topics which highlight progress in the exploitation of fundamental research for advancing the predictive, design and optimization capabilities of complex industrial and environmental shear-flow phenomena. A new facet has been the inclusion of selected priority themes, such as multiphase and biomedical flows and microelectromechanical systems (MEMS) technology, seen as being somewhat outside the conventional turbulence framework and meriting being especially promoted or highlighted.

Over 280 extended abstracts were received in response to the announcement of Call for Papers. Through a rigorous two-stage review process, 180 papers were selected for oral presentation, and 23 for presentation at a poster session. An invited keynote paper by Yutaka Tsuji provides a review of recent progress in the field of flows with bubbles and particles. A further four keynote lectures by Jean-Pierre Bertoglio, Lennart Löfdahl, Sheldon Weinbaum, and Luc Vervisch deal, respectively, with major aspects of two-point closures, MEMS for turbulence control, biological flows, and DNS/LES for combustion.

The organization of any conference is a challenge and requires much preparatory work. However, TSFP-3 faced an exceptionally difficult problem just before the Symposium, namely the unexpected outbreak of SARS in April 2003, which affected especially Asia and Canada. Careful reference to the advice issued by national and international bodies, including the World Health Organization, led the Organizing Committee to resolve that TSFP-3 should go ahead as originally scheduled. However, the decision was taken, with great regret, to ask our colleagues from the affected areas, specifically China, Hong Kong, Taiwan and Singapore, to refrain from attending the Symposium. We miss all these colleagues, and hope that they will join us at the next symposium.

The Organizing Committee wish to acknowledge the contribution of Mamoru Tanahashi of the Tokyo Institute of Technology and Mami Yamashita, who provided critical staff support for the paper-review process and the assembly of these Proceedings. We are also indebted to all Advisory Committee members for reviewing the hundreds of extended abstracts submitted, to the Executive and Local Committee members for running the Symposium successfully, and to the sponsors, without whose generous financial contributions it would not have been possible to invite dozens of young researchers and post-graduate students to attend TSFP-3.

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