



Preface

This special issue of the International Journal of Heat and Fluid Flow contains a selection of papers from the Third International Symposium on Turbulence, Heat and Mass Transfer, held from 3 to 6 April 2000, in Nagoya, Japan. The papers reflect the profile and flavor of this triennial conference held earlier in Lisbon, Portugal (1994), and in Delft, Netherlands (1997), which focuses on novel developments in convective heat and mass transfer problems specifically related to turbulence.

A total of 117 papers (chosen from over 150 submitted abstracts) appeared in the Conference Proceedings (Turbulence, Heat and Mass Transfer 3, Nagano, Hanjalić and Tsuji, (Eds.), Published by Aichi Shuppan, Tokyo, Japan, 2000). 21 papers were selected for this special journal issue. The papers were chosen on the basis of their quality, scientific impact and relevance to the journal's scope. The authors of the selected papers were invited to expand their manuscript beyond the conference volume page limitation and to revise the papers to meet the criteria of archival journal publications. All papers have been subjected to the journal's standard review procedure.

We hope that the selected papers give a good impression of recent trends and of some of the achievements in experimental, theoretical and computational research. As compared with previous conferences in the series, a shift of focus is visible, both in techniques and in applications. This time there are more papers dealing with direct numerical and large eddy simulations, while turbulence modelling is directed towards complex configurations with curvature and rotation, and use of general structured and unstructured grids. Other novelties include simultaneous multi-sensor velocity and scalar measurements, studies of the role of organized vortical structure in heat and mass transfer enhancement, particulate and droplet flows and their interaction with turbulence, with application to aero- and reciprocating engines, unsteady and combustion related heat and mass transfer. This, by no means, exhausts all aspects and areas of active research. Also, not all high-quality papers from the conference volume have been included, either because their authors had already committed themselves to publication of the extended papers in other journals, or because the topic covered does not fully correspond with the journal's publishing policy. However, we believe that the selection offers a representative cross-section through the current top quality research in turbulent heat and mass transfer.

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