

Gas Turbine Heat Transfer

This issue has papers selected by the Scientific Committee from the symposium Turbine-09 sponsored by the International Center for Heat and Mass Transfer (ICHMT). *Turbine-09* was held in Antalya, Turkey, August 9–14, 2009. It was the third symposium related to heat transfer in high-performance gas turbines sponsored by the ICHMT. The first, held in Marathon, Greece, in August 1992, resulted in the book *Heat Transfer in Turbomachinery*. The second, Turbine 2000, conducted in Cesme, Turkey, in August 2000, was published in the book *Heat Transfer in Gas Turbine Systems*. The three symposia offered invited keynote lectures and contributed papers by some of the world's best-known authorities on gas turbine heat transfer. Each of the two proceedings volumes and these special issues (Vol. 41, Nos. 6–8, 2010 and Vol. 42, Nos. 1 and 2, 2011) contain a wealth of information from key industrial, academic, and nonprofit laboratories.

The objective of the symposia and of these special issues is to provide an opportunity to present and review the most recent developments in heat transfer and thermal control applied to modern, high-temperature gas turbine systems. Presented are: experimental results and techniques, computational studies and methods, and design recommendations. Aspects of heat transfer in rotating machinery include:

- combustor and transition section heat transfer,
- heat exchange to turbine airfoil and endwall surfaces within the gas path,
- stator internal heat transfer,
- disk cavity and blade internal flow and heat transfer,
- innovative cooling techniques, and
- heat exchange in turbines with combined cycles.

The results published in these issues should be valuable to researchers in heat transfer as well as to designers of gas turbine systems.

The papers for these special issues were selected from the symposium papers by the International Scientific Committee of the Symposium:

- Sumanta ACHARYA, Louisiana State University, U.S.A.
- Tony ARTS, Von Karman Institute for Fluid Dynamics, BELGIUM
- David BOGARD, University of Texas, U.S.A.
- Ronald BUNKER, General Electric Company, U.S.A.
- Cengiz CAMCI, Pennsylvania State University, U.S.A.
- Ping-Hei CHEN, National Taiwan University, TAIWAN
- Minking CHYU, University of Pittsburgh, U.S.A.
- Eva DORIGNAC, LET ENSMA, University of Poitiers, FRANCE

- Ken-ichi FUNAZAKI, Iwate University, JAPAN
- Richard J. GOLDSTEIN, University of Minnesota, U.S.A.
- Je-Chin HAN, Texas A&M University, U.S.A.
- Alexander I. KIRILLOV, St.Petersburg State Polytechnic University, RUSSIA
- Lee S. LANGSTON, University of Connecticut, U.S.A.
- Philip LIGRANI, Oxford University, U.K.
- Joon Sik LEE, Seoul National University, SOUTH KOREA
- Alexander I. LEONTIEV, Moscow State Technical University, RUSSIA
- Francesco MARTELLI, University of Florence, ITALY
- Ricardo MARTINIZ_BOTAS, Imperial College, U.K.
- Pierre MILLAN, ONERA — CERT, FRANCE
- Hee-Koo MOON, Solar Turbines Inc., U.S.A.
- J. Michael OWEN, University of Bath, U.K.
- B.V.S.S.S. PRASAD, Indian Institute of Technology-Madras, INDIA
- Heinz-Peter SCHIFFER, Technische Universität Darmstadt, GERMANY
- Achmed SHULTZ, University of Karlsruhe, GERMANY
- Terrence SIMON, University of Minnesota, U.S.A.
- Kenichiro TAKEISHI, Osaka University, JAPAN
- Zhi TAO, Beihang University, CHINA
- Bernhard WEIGAND, Stuttgart University, GERMANY

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