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Mechanics and Mechanical Engineering publishes original papers, notes, and invited review articles from all fields of theoretical and applied mechanics as well as mechanical engineering. In addition to the classical fields, such as Rigid Body Dynamics, Elasticity, Plasticity, Hydrodynamics and Gas Dynamics, it gives special attention to recently developed and boundary areas of mechanics. As a rule, only contributions written in English will be accepted.

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Technical University of Lodz
Institute of Turbomachinery



POLITECHNIKA ŁÓDZKA
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INSTYTUT MASZYN PRZEPYWOWYCH
INSTITUTE OF TURBOMACHINERY

10th INTERNATIONAL SYMPOSIUM
ON
COMPRESSOR & TURBINE FLOW
SYSTEMS
– THEORY & APPLICATION AREAS

SYMKOM 2011

Łódź, 26 – 28 October, 2011

LETTER FROM EDITORS

It is our great pleasure to submit to our readers issue No 3, Vol. 15 of the journal "Mechanics and Mechanical Engineering", in which the contributions presented at the *SYMKOM 2011* International Symposium are included.

SYMKOM 2011 is already the tenth symposium devoted to turbomachines and organised by the Institute of Turbomachinery, Technical University of Łódź.

The first symposia were devoted to compressors exclusively, hence their name which comes from "SYMpozjum KOMpresorów" (i.e., SYMposium on COMPRESSORS). These symposia were held at the time when the production of first industrial compressors and blowers, designed at the Chair of Thermal Turbomachines, the predecessor of the Institute of Turbomachinery, started in Poland.

The first *SYMKOM* in which foreign participants took part was organised in 1967 in Łódź. The next venues were, respectively: 1977 – Tuszyn, 1987 – Bronisławów, 1991 – Łódź and Bronisławów, 1995 – Bronisławów, 1999 – Łódź and Arturówek, and 2002, 2005, 2008 – Łódź.

Since 1995 English has become the official language of *SYMKOM*s and conference proceedings have been published in this language.

Since 1987 the problem scope covered by *SYMKOM* symposia has included problems of theory and experiment of turbomachines, as well as their verification.

The SCIENTIFIC COMMITTEE of *SYMKOM 2011*, responsible for the merits of the symposium, was represented by:

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The problem scope of *SYMKOM 2011* is focused on the following main topics:

- numerical flow simulations as well as application of new models in the field of turbomachines; experimental verification of their results;
- problems of flow unsteadiness, rotor - stator interaction, noise and surge investigations;
- turbomachine rotordynamics;
- metrology of flow phenomena in turbomachines;
- turbomachinery design and manufacturing technologies; revamp and retrofit of turbines, compressors and pumps;
- turbomachinery maintenance problems;
- thermodynamics of turbomachines, new highly efficient energy and heat generating cycles;
- turbomachines for ‘green energy’ generation;
- AOB of turbomachinery.

We do hope that *SYMKOM 2011* will contribute, like all the previous symposia, to the exchange of experience and knowledge, and to establishing new and tightening the already existing relations and scientific co-operation in the field of turbomachinery, between both Polish and foreign institutions.

Plenary sessions and discussions at posters, which were highly evaluated by participants of previous symposia, will serve these purposes. We also hope that social events will contribute to a nice atmosphere at the symposium.

The Organizing Committee would like to thank all the people and institutions who have provided financial and organizational support.

We wish fruitful sessions, vivid discussions and a nice stay in Łódź to all the participants of the *SYMKOM 2011* symposium.

Scientific and Organizing Committee
SYMKOM 2011

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