

ISSN 1822-8283



IFTOMM National
Committee of
Lithuania



MSM 2007

3RD INTERNATIONAL CONFERENCE

**MECHATRONIC SYSTEMS
AND MATERIALS 2007**

27–29 September, Kaunas

ISSN 1822-8283

**Kaunas University of Technology
Vilnius Gediminas Technical University
Lithuanian Academy of Sciences
Opole University of Technology
Bialystok Technical University
IFTToMM National Committee of Lithuania**

**3rd International Conference
Mechatronic Systems and Materials (MSM 2007)
27 - 29 September, 2007, Kaunas, Lithuania**

Abstracts of Reviewed Papers



Editors:

Egidijus Dragašius, Kazimieras Juzėnas,
Algimantas Bubulis, Arūnas Lipnickas

Konferenciją remia:

Lietuvos valstybinis mokslo ir studijų fondas
Lietuvos Respublikos Švietimo ir mokslo ministerija
Kauno technologijos universitetas

Conference is supported by:

Lithuanian State Science and Studies Foundation
The Ministry of Education and Science of the Republic of Lithuania
Kaunas University of Technology

Maketavo: Inga Skiedraitė
Layout done by: Inga Skiedraite

©Kauno technologijos universitetas, 2007

AIM OF THE CONFERENCE

The aim of the conference is to provide an opportunity to share information and facilitate co-operation in mechatronics and new materials and dissemination of current research results in this multidisciplinary field.

CONFERENCE VENUE

City of Kaunas

MSM 2007 will be organized in Kaunas. Kaunas with nearly 400 000 inhabitants is one of the most significant cities of Lithuania. It is not only a city of old traditions, but also large centre of business and industry. It can also claim to be a city of young people with over 35,000 students studying at six state universities. Hundreds of years of cultural heritage are preserved in the historical and architectural monuments, museums, theatres, art galleries and churches of Kaunas.

Kaunas University of Technology

Kaunas University of Technology is the largest technological University in the Baltic States. The University shares the best traditions of classical Universities, offering almost all fields of technological studies and research. The Social and Physical Sciences are being particularly emphasized at the University, as a modern University graduate is expected to bear much more beyond the knowledge of his profession. Meanwhile the studies and research in the fields of Humanities and Biomedicine, as well as in the interdisciplinary fields, have recently been very successfully launched. New study programmes in Mechatronics, Sport Engineering, Musical Engineering, and Biomedical Engineering appeared to be very popular among the students.

ABOUT MSM 2007

The Program Committee of MSM 2007 has accepted 167 papers by authors coming from 25 countries of Europe, America and Asia. We would like to thank very much all the reviewers of the submitted papers - their names are listed later on in the proceedings, their contribution to the quality and success of this Workshop is hereby grateful acknowledged. As a result of the selection process 76 papers have been chosen and scheduled for oral presentations and 91 papers - for poster presentations, they are organized in 8 oral and 2 poster sessions.

A selection of best papers will be proposed for publication in a Special Issues of the International Journals: "Solid State Phenomena", "Journal of Vibroengineering", "Elektronika ir Elektrotechnika", "Mechanika".

SCIENTIFIC EDITORIAL COMMITTEE

Chairman

R. Bansevicius, Lithuania

Vice Chairman

V. Ostasevicius, Lithuania

Members

G. Amza, Romania
V. Augutis, Lithuania
S. Backaitis, USA
V. Bagdonas, Lithuania
B. Baksys, Lithuania
V. Barzdaitis, Lithuania
I. Blekhman, Russia
C. Cempel, Poland
A. Fedaravicius, Lithuania
R. Fourounjiev, Belarus
V. Gelezevicius, Lithuania
J. Holnicki-Szulc, Poland
R. Jonusas, Lithuania
C. Kajdas, Poland
H. Kawasaki, Japan
S. Kausinis, Lithuania
V. V. Kliuev, Russia
J. A. G. Knight, UK
G. Kulvietis, Lithuania
J. Laugis, Estonia
H. Loose, Germany
M. Meyyappan, USA

M. Min, Estonia
W. Ostachowicz, Poland
A. Palevicius, Lithuania
A. E. Panich, Russia
R. Parkin, UK
A. Preumont, Belgium
V. P. Royzman, Ukraine
A. Rovetta, Italy
A. Sachenko, Ukraine
J. Sa da Costa, Portugal
J. Sawicki, USA
J. Sapragonas, Lithuania
J. Skliba, Czech Republic
H. E. Stephanou, USA
S. Tamulevicius, Lithuania
T. R. Tolocka, Lithuania
J. Vantomme, Belgium
V. Vekteris, Lithuania
J. Viba, Latvia
V. Volkovas, Lithuania
W. Zwierzycki, Poland

ORGANIZING COMMITTEE

Chairman

A. Bubulis, Lithuania

Vice Chairman

E. Dragasius, Lithuania

Members

V. Jurenas, Lithuania
K. Juzenas, Lithuania
A. Lipnickas, Lithuania
A. Marcinkevicius, Lithuania

I. Skiedraite, Lithuania
A. Vilkauskas, Lithuania
P. Ziliukas, Lithuania

LIST OF REVIEWERS

Adamiv O.
Adaskevicius R.
Ailon A.
Augutis V.
Bagdonas V.
Baksys B.
Balasevicius L.
Bansevicius R.
Barauskas S.
Bartkevicius V.
Barzdaitis V.
Blaziunas G.
Bogdevicius M.
Bubulis A.
Dallet D.
Dauksevicius R.
Dervinis G.
Dosinas A.
Dragasius E.
Endo T.
Fedaravicius A.
Gecys S.
Gelezevicius V.
Grinko A.
Gurbuz R.
Holnicki-Szulc J.
Ivanescu M.
Jokinen T.
Kausinis S.
Kawasaki H.

Klytta M.
Kulvietis G.
Lipnickas A.
Mandru D.
Marcinkevicius A.
Mariunas M.
Mouri T.
Mzyk G.
Niemenmaa A.
Ostasevicius V.
Panovko G. Y.
Ragulskis K.
Ragulskis M.
Ramonas C.
Reuter M.
Rinkeviciene R.
Rutkauskas R.
Sauk S.Y.
Simutis R.
Stambolov G.
Tolocka R. T.
Ueki S.
Vaitkus V.
Vekteris V.
Vilkauskas A.
Vodovozov V.
Volkovas V.
Zhurauski M.
Ziliukas A.
Zvironas A.