

## **THE X-TH CONFERENCE ON MECHANICAL VIBRATIONS WITH INTERNATIONAL PARTICIPATION Timisoara, Romania May 23-24, 2002**

The origin of the Conference goes back to 1975, when Professor Gheorghe SILAS has initiated it. The conference is organized every three years in Timisoara at the Mechanical Faculty of "Politehnica" University. This is the only periodical conference organized in Romania in the vibrations field.

The main objective of the Conference was to bring together researches of several disciplines to share their latest findings in analytical, computational and experimental methods and to provide a better understanding of various dynamic aspects in the area of mechanical vibrations and biomechanics.



Participants of The X-th Conference on Mechanical Vibrations with International Participation  
Timisoara, Romania May 23-24, 2002

The Conference brought together 185 researchers from both, academia and industry, with a substantial number of international participants.

A number of 125 papers were presented during this year's conference. The conference covered the following five sessions:

1. Plenary session;
2. Vibration and vibro-impacts session;
3. Identification of mechanical systems and diagnosis of mechanical structures session;
4. Vibration of biomechanical structures and technical acoustics session;
5. Modeling of biomechanical structures session.

In the *Plenary session*, the following four lectures were presented: Radu VOINEA (Romania) – "On some analogies"; Zarko SPASIC (Yugoslavia) – "Computer based vibration monitoring and its role in predictive maintenance" (co-authors Miroslav PILIPOVIC (Yugoslavia) and Peter B. PETROVIC (Yugoslavia)); Gheorghe MIHALAS (Romania), "Modeling and simulation of biological processes – actual tendencies"; Liviu BRINDEU (Romania) – "The personality of professor Gheorghe SILAS in science and technique".

During the *Vibration and vibro-impacts session*, 36 papers were presented covering a large variety of problems associated with: vibration by impact, tests of materials and equipment at vibro-impacts, oscillations and mathematical modeling of nonlinear systems, methods for studying nonlinear systems, stability of motion, modeling of the vibro-cutting process, study of self sustaining vibrations in the working process, chaotic behavior of mechanical systems, etc.

The *Identification of mechanical systems and diagnosis of mechanical structures session*, consisted of 34 papers covering various topics like vibration state diagnosis, dynamic high strain behavior of concrete and mortar, vibro-diagnosis and mathematical modelling of dynamic systems, modal analysis in bridge vibration monitoring, multiple time scale method in galloping's study, analysis of dynamic behavior of gears with random manufacturing errors.

In the *Vibration of mechanical structures and technical acoustics session*, 32 papers were presented. The session was devoted to dynamic response of some structures as bars, beams, plates, active control of mechanical structures, dual extremum principles in dynamics of linear thermoelasticity of laminated plates, researches concerning the acoustic screens for motorways, transient motions of a railway set, phonic pollution generated by the road traffic.

During the *Modelling of biomechanical structures session*, 22 papers were presented covering a wide range of topics like the relationship between a mechanical vibration generator and the human body receptor, the application of Hertzian contact theory to explain the evolution of artrosis process, modelling and control of an artificial muscle, biomechanical modelling principles of osteo-articular system, modelling and dynamic study of human mandible, higher-order spectral analysis used for phonocardiogram processing.

Many papers having a practical character were presented during the conference.

The authors of the conference papers are to be congratulated for their service to the of the research community. The proceedings of the conference were published in three volumes and a CD-room.

The participants at "The X-th Conference on Mechanical Vibration with International Participation, Timisoara, Romania, May 23-24, 2002" were unanimous in recommending the continuation of the conference in the future. There was also the decision of the participants that in the future this conference should have an International Scientific Committee.

Several personalities participating at the conference put the bases of the future co-operation between "Politehnica" University of Timisoara and the Universities of Belgrade and Nis (Yugoslavia) and also the University of G $\ddot{u}$ ldollo from Hungary.

The conference closed with visit to the Sag's Abbey situated at 12 km from Timisoara, where the participants served lunch. By all considerations, the conference was a success.

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