



**THE ELEVENTH INTERNATIONAL SCIENTIFIC-PRACTICAL CONFERENCE**  
**“Mathematical Modeling and Simulation of Systems. MODS'2016”**  
*June 28 – July 1, 2016, Ukraine, Kyiv - Zhukin*

**Dear Colleagues,**

We invite you to participate in the scientific-practical conference, which is the part of events to implement the Law of Ukraine "About national Program of Informatization" and the plan of scientific and organizational events of the National Academy of Sciences and Ministry of Education and Science of Ukraine.

**ORGANIZERS**

- Ministry of Education and Science of Ukraine
- The National Academy of Sciences of Ukraine
- Academy of Technological Sciences of Ukraine
- Engineering Academy of Ukraine
- Glyndwr University, Wrexham, UK
- Lodz University of Technology, Poland
- Riga Technical University, Latvia
- Tallinn University of Technology, Estonia
- University of Extremadura, Badajoz, Spain
- Francysk Scoryna Gomel State University, Belarus
- Institute of Mathematical Machines and Systems Problems of the NASU
- Keldysh Institute of Applied Mathematics of the RAS, Moscow, Russia
- National Technical University of Ukraine "Kyiv Polytechnic Institute"
- Yuriy Kondratiyuk Poltava National Technical University
- Chernihiv National University of Technology

**IMPORTANT DATES OF THE CONFERENCE**

- May 20 – the last day to submit abstracts and application forms for participation in the conference.
- May 31 – the last day to transfer of payment for participation in the conference.
- June 27 – arrival of participants to IMMSP NASU, Kyiv, registration and plenary session, transfer to Zhukin.
- June 28-30 – work in sections.
- July 1 – closing of the conference: plenary session, centralized leaving of participants from Zhukin.

**PURPOSE OF THE CONFERENCE**

Exchange of experience in research, organizational, scientific and practical work on:

- modern aspects of mathematical modeling and simulation of systems in ecology;
- modern aspects of mathematical modeling and simulation of systems in manufacturing;
- modern aspects of mathematical modeling and simulation of systems in information technology.

**PROGRAM COMMITTEE**

*CO-CHAIRMEN:*

- Borovin G.K., D.Sc. (Phys.-Math.), Russia
- Vasiliev A.I., D.Sc. (Econ.), Ukraine
- Dmitri Vinnikov, Dr.Sc., Estonia
- Ilya Galkin, Dr.Sc.Eng., prof., Latvia
- Demidenko O.M., D.Sc., prof., Belarus
- John Davies, prof., U.K.
- Ireneusz Zbiciński Ph.D., D.Sc, prof., Poland
- Morozov A.A., D.Sc., prof., member of the NASU, Ukraine
- Onishchenko V.A., D.Sc. (Econ.), prof., Ukraine
- Enrique Romero-Cadaval, Dr.Sc., prof., Spain
- Shkarlet S.N., D.Sc. (Econ.), prof., Ukraine

**ORGANIZING COMMITTEE**

*CHAIRMAN*

Kazymyr V.V. – D. Sc., prof.

*SECRETARIES:*

Posadska A., Posadska I., Zhitnick O.

*ORGANIZING COMMITTEE MEMBERS:*

Kryshchenko M., Mykhailiuk I., Lytvyn O.

*PROGRAM COMMITTEE MEMBERS:*

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**TOPICS OF THE CONFERENCE**

- Methods of mathematical modeling and simulation
- Tools of mathematical modeling and simulation

- Mathematical modeling and simulation of systems in ecology, manufacturing, information technologies
- Model-oriented control of technological processes and organizational systems

## PUBLICATIONS OF REPORTS AND OFFICIAL LANGUAGES OF THE CONFERENCE

Abstracts of reports will be published in the conference proceedings prior to the conference.

Articles based on the reports, presented during the conference, will be published in the journal of IMMS "Mathematical Machines and Systems" or in the journal of Chernihiv National University of Technology "Technical sciences and technology", which are included to the list of HAC of Ukraine.

Official languages of the conference are Ukrainian, Russian, English.

## SUBMISSION OF REPORT'S ABSTRACTS

*Abstracts of reports* should be sent in electronic form (file \*.rtf or \*.doc MS Word) by e-mail to the address [mods.ipmms@gmail.com](mailto:mods.ipmms@gmail.com) (a copy to [alinka.posadskaya@gmail.com](mailto:alinka.posadskaya@gmail.com)) or on CD by regular mail to the address of the Organizing Committee.

**Requirements to arrangement of abstracts:** text, graphics and formulas (MS Equation 3.0); page parameters – paper size A4 with indents up and down 2 cm, left 2.5 cm, right 1.5 cm, Times New Roman font, size 10, line interval – 1,0. In the upper left corner indicate UDC. Title of the report (big "bold" letters) is in the center, on the next line are initials and surnames of authors, further there is a name of the institution (in italics), after a free line the text of the report begins. **The abstract should not exceed two (2) pages size A4.**

*Example of a abstract*

UDC 517.957

### MATHEMATICAL MODELING OF DYNAMICS OF POPULATION DEVELOPMENT

V.G. Malenko

*Institute for Applied System Analysis, Ukraine*

The problem of population dynamics is central to ecological studies. For a more adequate description of population dynamics one must take into consideration heterogeneity of individuals' properties, particularly the age-old structure.

A simpler example of a structured model for age is a von Foerster's linear model [1]. It looks like this:

$$\frac{\partial \tilde{\varphi}}{\partial t} = r \left[ \frac{g}{\omega} \nabla \tilde{Q} - 2\tilde{U} \cdot \nabla \tilde{\varphi} - \gamma_d \tilde{\varphi} \right], \quad (1)$$

## Literature

A. Von Foerster H. Some remarks on changing populations // Kinetics of Cellular Proliferation. - New-York: Grune and Stratton, 1959. - P. 382 - 407.

**Requirements for arrangement of articles** for publication in the journal "Mathematical Machines and Systems" are presented here: <http://www.immsp.kiev.ua/publications/rules.html> and in the journal "Technical sciences and technology" <http://tst.stu.cn.ua/?task=page&l=ua&id=1>

## PROCESS OF APPLICATION FOR PARTICIPATION AND PAYMENT

Information (*name, name of the institution, tel. / fax, e-mail, title of the report, form of participation*) concerning applications for participation in the conference will be accepted by the conference organizing committee by e-mail **till May 20, 2016.**

## ORDER OF THE CONFERENCE:

The conference will be held at the recreation center IMMSP NASU in Zhukin, Vyshgorodsky district, Kyiv. region. The base is located in a picturesque location on the bank of the Desna river among pine trees. Two-bedroom cottages are equipped with everything necessary for living. Everyday catering will be provided by the organizers.

## CONFERENCE FEES

Participants from Ukraine: 350 UAH (part-time participation) and 700 UAH (full-time participation).

Participants from other countries: 30 EUR (part-time participation) and 60 EUR (full-time participation).

Organizing fee for the conference includes organizational expenses, accommodation and catering (for full-time participants), mailing of the conference proceedings (for part-time participants). Payment of the organizing fee can be made by requisites indicated below **till May 31, 2016**, or directly during the registration, in preliminary agreement with the organizing committee.

After payment authors are asked to send scanned copy of receipt to the following e-mail [mods.ipmms@gmail.com](mailto:mods.ipmms@gmail.com) with "MODS'2016 Conference Fee payment" in subject.

### Organizing Committee Address:

Chernihiv National University of Technology,  
95, Shevchenko str., Chernihiv, 14027, Ukraine

Telephone, email:

+38 046 223 28 41

+38 066 399 13 16

[mods.ipmms@gmail.com](mailto:mods.ipmms@gmail.com)

[alinka.posadskaya@gmail.com](mailto:alinka.posadskaya@gmail.com)

### Payment requisites:

Chernihiv National University of Technology,  
Code 05460798 STSU in Kyiv p/p 31251264206996  
IFO 820172

Payment purpose: org.fee for participation in the conference  
MODS' 2016.

### Official sites of the conference:

<http://www.immsp.kiev.ua/conferences>,

<http://stu.cn.ua/staticpages/konf-mods2016/>