



AL-FARABI KAZAKH NATIONAL UNIVERSITY  
FACULTY OF BIOLOGY AND BIOTECHNOLOGY  
COMMITTEE ON SCIENTIFIC AND TECHNOLOGICAL COOPERATION OF THE OIC  
(ORGANIZATION OF ISLAMIC COOPERATION) COMSTECH  
COMMISSION ON SCIENCE AND TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT  
IN THE SOUTH (COMSATS)  
INSTITUTE OF DENDROLOGY OF THE MINISTRY OF SCIENCE AND EDUCATION  
REPUBLIC OF AZERBAIJAN  
BIOMEDICAL RESEARCH CENTER

### INFORMATION LETTER

## INTERNATIONAL FORUM «MODERN TRENDS IN SUSTAINABLE DEVELOPMENT OF BIOLOGICAL SCIENCES»

*Dear Colleagues!*

*We cordially invite you to participate in the International Forum "Modern Trends in Sustainable Development of Biological Sciences", commemorating the 90<sup>th</sup> anniversary of Al-Farabi Kazakh National University and of the Faculty of Biology and Biotechnology. The event will take place from March 27 to March 28, 2024 at Al-Farabi Kazakh National University.*

*Scientists, University lecturers, research fellows, young researchers and students are encouraged to join the Forum to present their most innovative research results.*

*We look forward to seeing you at the Forum!*

**Organizing committee**

During the forum it is planned to discuss contemporary trends in developing promising areas of biology, solving critical issues in the field of biodiversity, cell and tissue biology, animal and plant morphology, physiology, biophysics, biomedicine, neuroscience, biotechnology, microbiology, bioengineering, genetics and molecular biology, as well as the preservation and development of a single international scientific and educational space.

#### **Organizers of the international forum:**

- al-Farabi Kazakh National University.
- Faculty of Biology and Biotechnology.
- Committee on Scientific and Technological Cooperation of the OIC (Organization of Islamic Cooperation) COMSTECH.
- Commission on Science and Technology for Sustainable Development in the South (COMSATS).
- Institute of Dendrology of the Ministry of Science and Education Republic of Azerbaijan.
- Biomedical Research Center.

#### **Honorary Chairman:**

- **Tuimebaev Zh.K.** – Chairman of the Board-Rector of Al-Farabi Kazakh National University.

#### **Organizing Committee:**

- **Aitzhanova Zh.N.** – Member of the Board, Vice-Rector for Research and Innovation, Al-Farabi Kazakh National University.
- **Erkinbaeva L.K.** – Member of the Board, Vice-Rector for Academic Affairs, Al-Farabi Kazakh National University.
- **Kurmanbayeva M.S.** – **Conference chairman** – Dean of the Faculty of Biology and Biotechnology, Al-Farabi Kazakh National University.
- **Prof. Dr. Muhammad Iqbal Choudhary** – Coordinator General, COMSTECH.
- **Ambassador Dr. Mohammad Nafees Zakaria** – Executive Director, COMSATS.
- **Hasanova Minara Yunis** – Associate Professor, Acting General Director of the Institute of Dendrology, Ministry of Science and Education, Republic of Azerbaijan.
- **Mammadov Ramazan Mustafa** – Professor, Head of Dendrochronology laboratory, Institute of Dendrology, Ministry of Science and Education, Republic of Azerbaijan.
- **Khalilov Rashad Hamid** – Head of the International Relations Department of the Institute of Dendrology, Ministry of Science and Education, Republic of Azerbaijan.
- **Sadvakasova A.K.** – Deputy Dean for scientific-innovational activity and international cooperation, Al-Farabi Kazakh National University.
- **Kusmangazinov A.B.** – Deputy Dean for Academic, Methodological and Educational work, Al-Farabi Kazakh National University.
- **Kustubaeva A.M.** – Head of the Department of Biophysics, Biomedicine and Neuroscience, Director of the Brain Institute, Al-Farabi Kazakh National University.
- **Kistaubayeva A.S.** – Head of the Department of Biotechnology, Al-Farabi Kazakh National University.
- **Zhunusbayeva Zh.K.** – Head of the Department of Molecular Biology and Genetics, Al-Farabi Kazakh National University.
- **Kezenova G.B.** – Head of the Department of Biodiversity and Bioresources, Al-Farabi Kazakh National University.
- **Suleiman Allahverdiyev** – Professor, K.A. Timiryazev Institute of Plant Physiology Russian Academy of Sciences, Russia.
- **Khalil Toktay** – Professor, University of Nigde Omer Halisdemir, Turkey.
- **Bazbek Davletov** – PhD, Professor, University of Sheffield, UK.
- **Jurjan Stefan** – PhD, Professor, Université de Lorraine, Nancy, France.
- **Zoltán Barta** – Professor, Head of the Institute of Biology, Faculty of Science and

- Technology, University of Debrecen, Hungary.
- **Datkhabaeva G.K.** – Deputy Head of the Department of Biophysics, Biomedicine and Neuroscience for scientific-innovational activity and international cooperation, Al-Farabi Kazakh National University.
  - **Narmuratova M.Kh.** – Deputy Head of the Department of Biotechnology for scientific-innovational activity and international cooperation, Al-Farabi Kazakh National University.
  - **Zhusupova A.I.** – Deputy Head of the Department of Molecular Biology and Genetics for scientific-innovational activity and international cooperation, Al-Farabi Kazakh National University.
  - **Zharkova I.M.** – Deputy Head of the Department of Biodiversity and Bioresources for Scientific Innovation activities and international cooperation, Al-Farabi Kazakh National University.
  - **Akhmetova A.B.** – Associate Professor of the Department of Biophysics, Biomedicine and Neuroscience, Al-Farabi Kazakh National University.
  - **Ydyrys A.** – PhD, Director of Biomedical Research Centre, Al-Farabi Kazakh National University.
  - **Inelova Z.A.** – Associate Professor of the Department of Biodiversity and Bioresources, Al-Farabi Kazakh National University.
  - **Sydykbekova R.K.** – Associate Professor of the Department of Biotechnology, Al-Farabi Kazakh National University.
  - **Lebedeva L.P.** – PhD, Lecturer of the Department of Molecular Biology and Genetics, Al-Farabi Kazakh National University.

#### **International Scientific Committee:**

- **Murat Saparbaev** – Professor, University of Paris-Saclay, France.
- **Gabor Shramko** – PhD, University of Debrecen, Hungary.
- **Mária Margit Höhn** – Professor, Hungarian University of Agriculture and Life Sciences, Institute of Agronomy, Hungary.
- **Zhiyong Huang** – PhD, Professor, Tianjin Institute of Industrial Biotechnology of the Chinese Academy of Sciences (TIB CAS), China.
- **Jingjing Wang** – PhD, Professor, Tianjin Institute of Industrial Biotechnology of the Chinese Academy of Sciences (TIB CAS), China.
- **Mehwish Durani** – Additional Director (International Partner Organizations) and Head COMSATS Centre for Climate and Sustainability, COMSATS Secretariat.
- **Huma Balouch** – Deputy Director (International Partner Organizations), Commission on Science and Technology for Sustainable Development in the South (COMSATS).
- **Joze Cheel** – PhD, Senior Researcher, Algatech Centre of Institute of Microbiology of the Academy of Sciences of the Czech Republic.
- **Xingzhi Xu** – PhD, Professor, Executive Dean, Shenzhen University Medical School, China.
- **Digel Ilya** – PhD, Professor, Director of Institute for Bioengineering, Aachen University of Applied Sciences, Germany.
- **Mikolaj Kokosinski** – PhD, Professor, Adam Mickiewicz University, Poland.
- **Mutay Aslan** – PhD, Professor, Medical School of Akdeniz University, Turkey.
- **Abilev Serikbay** – Professor, N.I. Vavilov Institute of General Genetics, Russian Academy of Sciences, Russia.
- **Barry D. Bruce** – PhD, Professor, University of Tennessee, USA.
- **Saitou Naruya** – Professor, National Institute of Genetics, Japan.
- **Aleksander Pogrebnjak** – Professor, Sumy State University, Ukraine.
- **Gulmammadova Shalala Adil** – Associate Professor, Head of Landscape Architecture laboratory of the Institute of Dendrology, Ministry of Science and Education, Republic of Azerbaijan.
- **Salakhova Elnara Khanhuseyn** – PhD in Biology, leading scientist of the Institute of

Dendrology, Ministry of Science and Education, Republic of Azerbaijan.

- **Nasirova Afruz Sattar** – PhD in Biology, senior scientist of the Institute of Dendrology, Ministry of Science and Education, Republic of Azerbaijan.

#### **Editorial Office:**

- **Shalakhmetova T.M.** – Professor of the Department of Biodiversity and Bioresources, Al-Farabi Kazakh National University.
- **Nurtazin S.T.** – Professor of the Department of Biodiversity and Bioresources, Al-Farabi Kazakh National University.
- **Bissenbaev A.K.** – Professor of the Department of Molecular Biology and Genetics, Director of Biology and Biotechnology S&R Institute, Al-Farabi Kazakh National University.
- **Aytasheva Z.G.** – Professor of the Department of Molecular Biology and Genetics, Al-Farabi Kazakh National University.
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- **Orazova S.B.** – PhD, Senior Lecturer of the Department of Biotechnology, Al Farabi Kazakh National University.
- **Tastambek K.T.** – PhD, Director of the Ecology S&R Institute, Al-Farabi Kazakh National University.
- **Akimbekov N.Sh.** – PhD, Principal Investigator of the Ecology S&R Institute, Al-Farabi Kazakh National University.
- **Kamzanova A.T.** – Associate Professor, Department of Biophysics, Biomedicine and Neuroscience, Al-Farabi Kazakh National University.
- **Tormanova A.N.** – PhD, Senior Lecturer, Department of Biophysics, Biomedicine and Neuroscience, Al Farabi Kazakh National University.
- **Lovinskaya A.V.** – PhD, Acting Associate Professor, Department of Molecular Biology and Genetics, Al-Farabi Kazakh National University.
- **Taipakova S.M.** – PhD, Leading Researcher of Biology and Biotechnology S&R Institute, Associate Professor of the Department of Molecular Biology and Genetics, Al-Farabi Kazakh National University.

#### **Secretariat:**

- **Kazakbaeva A.S.** – Lecturer of the Department of Biophysics, Biomedicine and Neuroscience, Al-Farabi Kazakh National University – Secretary of the Section No. 1.
- **Gabitkyzy A.** – Specialist of the Department of Biotechnology, Al-Farabi Kazakh National University – Secretary of the Section No. 2.
- **Serbaeva A.D.** – Senior Lecturer of the Department of Molecular Biology and Genetics, Al-Farabi Kazakh National University – Secretary of the Section No. 3.
- **Bakiyeva A.A.** – Specialist of the Department of Biodiversity and Bioresources, Al-Farabi Kazakh National University – Secretary of the Section No. 4.

#### **Directions of work:**

- **Section No. 1. Interdisciplinary Research in Biophysics, Biomedicine, and Neuroscience**  
– Cognitive Neuroscience Issues.

- Neurodegenerative diseases and Psychopathology.
- Advances in Computational Neuroscience.
- Perspectives on Molecular Neuroscience.
- Physiology of Health, Diseases, Diagnostics and Therapy.
- Temporal Organization of Biological Systems.
- Structure and dynamics of Biopolymers and Biomacromolecular Systems.
- Membrane and Transport Processes.
- Mechanisms of Energy Transformation in Biological Systems.
- Impact of Physicochemical Factors on Biological Systems.
- Integration of Science and Education as the basis of Professional Competencies in Biology Teachers.
- Biomarkers of Diseases and Effectiveness of Therapy.
- Interdisciplinary Approaches to understanding Disease Pathogenesis.
- Therapeutic Potential of Herbs and Plant Metabolites.
- Physiological and Biomedical Aspects of Adaptation.

### **Section No. 2. Current Issues in Biotechnology, Microbiology, and Bioengineering**

- Microbiology and virology. Microbial Biotechnologies.
- Role of Microorganisms in Ecosystems and Human Health.
- Industrial Application of Microorganisms for Production of Bioproducts.
- Application of Microbes in Bioremediation and Waste Treatment.
- Agrobiotechnology.
- Plant Biotechnology and Physiology.
- Food Biotechnology and Innovative Products.
- Biotechnologies in Medicine.
- Biomaterials.
- Environmental Biotechnology.
- Photobiotechnology and Bioenergy.
- Biodiversity and Ecosystem Conservation.
- Utilization of Biotechnologies for Environmental Issues.
- Development of Sustainable Agricultural and Production Methods.
- Development of New Medicines and Vaccines through Biotechnologies.
- Cell and Gene Therapy in Medical Practice.
- Use of Biomarkers for Disease Diagnosis and Monitoring.
- Bioinformatics and Computational Biology.
- Genome and Proteome Data Analysis.
- Modeling of Biological Systems and Virtual Hypothesis Testing.
- Application of Artificial Intelligence in Biological Research.
- Application of Genetic Engineering in Medicine, Agriculture, and Industry.
- CRISPR/Cas9 and Other Genome Editing Tools.
- Ethical Issues and Regulation of Genetic Engineering.
- Synthetic Biology.
- Creation and Programming of Artificial Biological Systems.
- Biological Computers and Logic Elements Based on Living Organisms.
- Evolution and Design of Living Systems in Laboratory Conditions.
- Ethical Issues in Biotechnology and Bioengineering.
- Interaction of Science with Society and the Impact of Technologies on Culture.
- Legislative Aspects and Regulation in Biotechnologies.

### **Section No. 3. Fundamental and Applied Research in Genetics and Molecular Biology**

- Medical Genetics, Oncogenetics, and Molecular Diagnostics.
- Experimental Mutagenesis.
- Genotoxicology and Genetic Monitoring.

- Cellular and Genetic Technologies.
- Molecular Genetics, Genomics, Bioinformatics, and Data Analysis.
- Genetics for Agriculture.

#### **Section No. 4. Current issues and modern principles of studying biodiversity**

- Problems of biodiversity conservation.
- Modern aspects and trends in the conservation of the gene pool of plants and animals of Kazakhstan.
- The current state of the bioresources of Kazakhstan and neighboring countries.
- Problems of desertification.
- Modern research in the field of plant biomorphology.
- Ecological and pharmacognostic issues of growing medicinal plants.
- Current issues of infectious diseases in crop production.
- Research in the field of flora.
- Actual problems of studying the fauna of Kazakhstan and neighboring countries.
- Current state of fisheries research and aquaculture.
- Actual problems of studying the morphology of animal cells and tissues.
- Current problems of environmental protection.
- The impact of anthropogenic and climatic factors on aquatic and terrestrial ecosystems.
- Applied aspects of developmental biology.
- Modern problems of anthropology.

**Dates of the international forum:** March 27-28, 2024.

#### **Forum venue:**

Republic of Kazakhstan, 050040, Almaty, al-Farabi Ave., 71, al-Farabi Scientific Library, 4<sup>th</sup> floor (opening, plenary reports, sectional reports).

**Format of the forum:** hybrid format (online & offline).

**Working languages of the forum:** Kazakh, Russian, English.

#### **Registration form and article submission**

To participate in the international forum “Modern trends in sustainable development of biological sciences”, the corresponding author must fill out the registration form on the website [bioconference.kaznu.kz](http://bioconference.kaznu.kz) and attach MS Word file in 2003/2007 (.doc/.docx) format by February 29, 2024, which in addition to the article (4-6 pages) in English, will include signed and scanned license agreement ([https://www.e3s-conferences.org/doc\\_journal/woc/publication\\_right\\_form.pdf](https://www.e3s-conferences.org/doc_journal/woc/publication_right_form.pdf)). The file should be named by the last name of the first author, indicating the initial of his/her first name and section number, e.g., Conference-Petrov V.-1. Within 5 days after submission, you should receive a letter confirming that your application has been accepted; If you have not received this letter, please contact the organizers by e-mail ([bioconference@kaznu.edu.kz](mailto:bioconference@kaznu.edu.kz)).

#### **The order of publication**

All articles submitted to the international forum undergo a mandatory check for plagiarism (system <https://kaznu.kz.antiplagiat.com/>) and are sent for double-blind review. The percentage of originality of each article must be at least 80%. Based on the results of the expert assessment, articles received by the Organizing Committee of the international forum will be recommended for publication in the proceedings of BIO Web of Conferences, E3S Web of Conferences, indexed in the international databases. The final decision on publication/ refusal to publish an article is made by an international publishing house.

Please note that if an article is rejected by an international publishing house, the registration fee is non-refundable.

### **Registration fee**

After reviewing and deciding to publish the article by the Organizing Committee of the international forum, the authors will be issued an invoice for payment.

**The registration fee is \$200.**

A receipt for payment must be sent to the organizers ([bioconference@kaznu.edu.kz](mailto:bioconference@kaznu.edu.kz)). The file should be named by the last name of the first author, indicating the initial of his/her first name and section number, e.g., receipt-Petrov V.-1.

### **Requirements for formatting the articles:**

- All materials submitted for publication must have both theoretical and practical value, and also correspond to one of the conference;
- The recommended number of authors should not exceed 5;
- The same person cannot be the author or co-author of more than two articles;
- The main part of the article should contain the following sections: Introduction, Materials and methods, Results, Discussion, Conclusion, Authors' contribution (The Acknowledgments section, including the source of funding, is included as necessary);
- The article must contain an abstract (150-200 words), keywords (5-10 words);
- The text must be typed in Times New Roman, 12 pt. Line spacing is single. Paragraph indent – 1 cm;
- The text must be illustrated with diagrams and tables. All illustrations must be within the boundaries of the main text;
- The list of references must comply with the requirements (Appendix A). It is recommended to provide links to the articles from highly-ranked international journals. The number of references in the bibliography must be at least 10;
- Self-citation should not exceed 15%;
- Authors are advised to strictly adhere to the ethical rules and general editorial guidelines [https://www.e3s-conferences.org/doc\\_journal/woc/e3sconf\\_editorial\\_guidelines.pdf](https://www.e3s-conferences.org/doc_journal/woc/e3sconf_editorial_guidelines.pdf)

### **To the authors attention!**

The text of the article must be carefully verified by the authors and must not contain spelling, punctuation and stylistic errors. The organizing committee of the international forum reserves the right to reject articles submitted outside the designated directions of work of the international forum, as well as the publication of articles that do not meet the above requirements. The organizing committee does not edit the text of the articles submitted by the authors.

### **Type of participation**

1. Plenary report – 15 minutes
2. Sectional report – 7 minutes

To participate in the Gala-dinner, which will be held on the occasion of the closing ceremony of the International Forum “Modern Trends in Sustainable Development of Biological Sciences” in the River Hall restaurant complex (Koktem-2 microdistrict, 11/3, just below Timiryazev street and the main University campus of Al-Farabi Kazakh National University) on March 28, 2024, it is necessary to reserve a place in advance. **The cost of the banquet is \$50.**

### **The address of the organizing committee of the conference:**

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