

Information

VI North Caucasus Organic Chemistry Symposium

The VI North Caucasus Organic Chemistry Symposium (NCOCS-2022) was held on April 18 to 22 in Stavropol at the North Caucasus Federal University (NCFU). This Symposium continued the series of meetings in the chemistry of heterocyclic compounds held in 2009 (Kislovodsk), 2011 (Zheleznovodsk), 2013 (Pyatigorsk), 2016 (Dombay), and 2018 (Vladikavkaz). This representative scientific forum, organized by the Department of Organic and Analytical Chemistry of the Faculty of Chemistry and Pharmacy of NCFU, was attended by more than 240 leading scientists from various regions of Russia: Cheboksary, Chelyabinsk, Chernogolovka, Ivanovo, Irkutsk, Kazan, Krasnodar, Kaliningrad, Moscow, Nizhny Novgorod, Novosibirsk, Novocherkassk, Omsk, Perm, Peterhof, Rostov-on-Don, Samara, St.-Petersburg, Stavropol, Saratov, Syktyvkar, Tolyatti, Tomsk, Ufa, Vladikavkaz, Volgograd, Volzhskiy, Yaroslavl, and Yekaterinburg and by foreign scientists from Azerbaijan, Armenia, Belarus, Kazakhstan, and Uzbekistan.

The Symposium covered a broad range of topics, including fundamental aspects and new trends in the development of organic chemistry. Primary attention was paid to new synthetic methods, conceptual approaches related to physicochemical properties and practical applications of organic compounds, including medicinal chemistry issues.

More than 220 reports were presented at the Symposium, including 3 plenary, 6 keynote, and 27 invited lectures, 83 oral reports, including 31 reports of young scientists, and more than 100 posters. The plenary

lectures were delivered by well-known Russian scientists: Academicians of RAS I. P. Beletskaya, V. P. Ananikov, and A. A. Spasov. At the plenary session, attention was focused on the theoretical aspects of organic chemistry, first of all, catalysis and the search for biologically active compounds. Academician I. P. Beletskaya demonstrated the role of various types of catalysis in modern organic chemistry for the development of chemo-, regio-, and enantioselective reactions, gave examples of transition and main group metal catalysis, considered the relationship between the homogeneous and heterogeneous catalysis, nanocatalysis, asymmetric catalysis, and organocatalysis. Academician V. P. Ananikov's report was concerned with the development of a new generation of efficient catalysts and approaches to the understanding of mechanisms that considerably contributed to the disclosure of the nature of catalytic active sites. Academician A. A. Spasov noted the role of medicinal chemistry, which is a highly important area of fundamental research determining the prospects for the development of pharmaceutical industry in Russia and the readiness of the Russian health service to respond to global challenges. In his report, he emphasized that medicinal chemistry is ever becoming a more sophisticated science that uses advanced inventory of methods for the synthesis of organic substances; the proportion of enantiopure drugs is increasing, the views on biotargets and mechanisms of drug action are being upgraded, and the analytical base of research is developing.

The keynote lectures were delivered by well-known Russian scientists: Corresponding Members of RAS

I. S. Antipin, A. O. Terent'ev, and S. A. Ponomarenko and Professors A. V. Aksenov and N. G. Nenaidenko. I. S. Antipin focused attention on the use of metacyclophane for the design of supramolecular systems, devices, and smart materials: colloidal nanoparticles, catalytic systems, metal-organic polymers, Langmuir–Blodgett nanolayers, molecular magnets, *etc.* Efficient oxidative coupling reactions resulting in the formation of carbon–carbon, carbon–heteroatom, and heteroatom–heteroatom bonds were described in the report of A. O. Terent'ev. S. A. Ponomarenko compared several classes of organic molecules, considered characteristic features of their synthesis, properties, and applications in organic electronic and photonic devices. V. G. Nenaidenko demonstrated the advances of the chemistry of organophosphorus compounds in relation to the use of fluorine-containing alkenes and acetylenes for the synthesis of various heterocycles. The report of Professor A. V. Aksenov addressed the synthetic approaches to alkaloid analogs containing an indole moiety, which had exhibited pronounced cytotoxicity against glioma, melanoma, esophageal cancer, and

many other cancer cell lines that are inherently resistant to induction of apoptosis and poorly treated with pro-apoptotic agents. The reports of young researchers were also at a high level.

At the Symposium, commercial companies made presentations offering their products and services in the field of organic and medicinal chemistry, laboratory instruments and equipment, consumable materials, and chemical reagents. The Symposium was financially supported by Tokyo Boeki Group, IKA, GalaChem group, Millab group, and InterAnalyt.

The Symposium is very important for popularization of chemical science in the south of Russia. This is the only regularly held scientific event of this level for both the North Caucasus and the Southern Federal Districts.

The next conference is planned for September, 2024. It will be devoted to the 30th year anniversary of the Stavropol school of organic chemists.

*Chairman of the Organizing Committee
Professor A. V. Aksenov*

V Russian Conference on Medicinal Chemistry with international participation MedChem-Russia 2021

Currently, the conference MedChem-Russia is the most prominent Russian meeting devoted to drug development. This conference is held every two years at large scientific, educational, and cultural centers of the Russian Federation. The first meeting took place in Moscow in 2013, the second one was in Novosibirsk in 2015, the third one was held in Kazan in 2017, and the fourth conference was in Yekaterinburg in 2019.

The 5th Russian Conference on medicinal chemistry with international participation, MedChem-Russia 2021, was held on May 6–19, 2022, in Volgograd. The main goal of the Conference was to carry out comprehensive analysis of relevant research, new approaches, and advanced technologies in medicinal chemistry and in the development of innovative drugs. Due to the difficult epidemiological situation related to the spread of COVID-19, it was decided to conduct the Conference as a hybrid (in-person/virtual) meeting. The Conference was initiated by the Russian Academy of Sciences, particularly, the Scientific Council for Medicinal Chemistry. The Conference was held under the auspices of the European Federation of Medicinal Chemistry (EFMC). The Conference organizers included the

Russian Academy of Sciences (RAS), the Ministry of Science and Higher Education of the Russian Federation, the Ministry of Health of the Russian Federation, the Division of Chemistry and Materials Sciences of RAS, the Scientific Council for Medicinal Chemistry of RAS, the Faculty of Chemistry of the M. V. Lomonosov Moscow State University, the Institute of Physiologically Active Compounds of RAS, the D. I. Mendeleev Russian Chemical Society, the Volgograd Region government, the Volgograd State Medical University, and the Volgograd State Technical University.

Leading universities of the Volgograd region were the venues of the Conference in 2022, namely, the Volgograd State Medical University (VolgSMU) and the Volgograd State Technical University (VolgSTU). The scientific schools of these universities are widely known in Russia and abroad for achievements in pharmacology and medicinal chemistry, development of new physiologically active compounds, as well as training of specialists for chemical and pharmaceutical industries and for health service of the country.

The welcome speeches at the Conference opening were presented by Vice Governor of the Volgograd

Region A. V. Dorzhdeev; President of the Conference and President of VolgSMU, Academician of RAS, V. I. Petrov; Chairmen of the Conference, Chancellor of VolgSMU V. V. Shkarin and Chancellor of VolgSTU A. V. Navrotsky; and Chairman of the Scientific Council for Medicinal Chemistry of RAS, Corresponding Member of RAS S. O. Bachurin.

The Conference program included three plenary sessions and eight concurrent sessions addressing new synthetic approaches in medicinal chemistry, target-oriented drug design, scientific and methodological grounds for the search and development of new medicinal agents, medical and bioinorganic chemistry, radiopharmaceuticals, search for new drugs based on natural compounds, computer-aided drug design, biotechnological aspects of medicinal chemistry, pharmaceutical platform of medicinal chemistry, technology of substances and dosage forms, their standardization and development prospects, and the search and development of new antiviral agents (including COVID-19). In total, 763 participants from eight countries and 48 cities registered on the Conference website. All foreign participants chose to attend virtually. The number of participants who attended in-person was 247; the number of virtual participants was 212. The reports at the plenary sessions were presented by Professor Reuben Jih-Ru Hwu (National Tsing Hua University, Taiwan) and Professor Ramesh K. Goyal (Vice Chancellor of the Delhi Pharmaceutical Sciences and Research University (DPSRU), India). Representatives of pharmaceutical companies and chemical industry actively participated in the Conference.

In total, 249 oral reports were presented at the three plenary and eight concurrent sessions; of these 151 reports were made in-person and 82 reports were made online; 116 online posters were presented, including 42 posters presented by young scientists. The total number of poster views was 1456.

The Conference hosted a satellite youth symposium in which 24 young scientists presented oral reports. Six participants received third degree diplomas, four of them got second degree diplomas, and two young scientists were awarded first degree diplomas.

The Conference hosted two round-table discussions on the educational programs in medicinal and pharmaceutical chemistry and chemical engineering, which were headed by Deputy Chairman of the Federal Educational Methodological Association in Higher Education (FEMA HE, specialty Chemistry), a member of the FEMA Presidium, I. A. Uspenskaya. One more round-table discussion was devoted to ways to promote the commercialization of innovative pharmaceutical products; the discussion was headed by Deputy Director General of the S-GROUP Corporate Communication Center, I. V. Tsvetkov. The reports were presented by Chairman of the Board of Directors of the ChemRar Group, A. A. Ivashchenko; Director of the LLC Unicorn Capital Partners, A. A. Vinogradov, and others.

During the Conference, those who wished to could visit and get acquainted with the Scientific Center for Innovative Medicines with a pilot production plant of VolgSMU, which was constructed according to the Federal Program Pharna 2020 and commenced in 2019. At this Center, studies aimed at the development of new domestic pharmaceuticals are carried out at a high modern level.

The Conference was a success and aroused great interest among both scientists and representatives of the pharmaceutical industry engaged in the field of medicinal chemistry and drug development. It was decided to hold the next MedChem-Russia conference no later than 2025.

*Co-chairman of the Organizing Committee,
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