

Tananaev Institute of Chemistry – Subdivision of the Federal Research Centre of the Russian Academy of Sciences (ICT KSC RAS)

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Tananaev Institute of Chemistry was established on the base of the Laboratory for Geochemistry and Analytical Chemistry of the Geological Institute, the Kola Branch of the USSR Academy of Sciences, in accordance with the decision of the Presidium of the USSR Academy of Sciences on December 27, 1957. A great contribution to the establishment and development of the Institute was made by I.V.Tananaev, an academician of the Russian Academy of Sciences after whom the Institute was named in 1997. In the period of 1981-2015, the Institute was headed by Academician V.T.Kalinnikov, a prominent scientist and science organizer. His name is associated with great progress made by the Institute. The researchers of the Institute are winners of honourable prizes and awards, such as L.A.Chugayev prize and V.A.Koptyug prize awarded by the Russian Academy of Sciences, the Government of Russia award, and two State awards in the field of science and technology. The scientific contribution of researchers has been rewarded by numerous prizes at international exhibitions in Russia, China, Belgium, Kuwait, Switzerland, Germany, Spain, etc. Since its foundation, the Institute's scientists have been granted over 800 Author's Certificates and Patents. Currently about 100 patents are supported. The Institute cooperates with foreign research organizations in Armenia, Belarus', Ukraine, France, Sweden, Slovakia, Japan and other countries.

The Institute consists of 11 laboratories attached to four Departments. The staff of the Institute includes one Corresponding Member of the Russian Academy of Sciences, 12 researchers with Doctorate Degree and 58 researchers with Ph. Degree.

The Institute is one of the world's leading centers for the development of chemical technologies for natural and man-made raw materials and functional materials.

At the Institute, the chemical and technological bases for processing non-traditional rare earth and titanium raw materials and a basic technology package ensuring the choice of the most efficient options for producing materials necessary for import substitution of critical products based on titanium dioxide, rare and rare earth metals have been developed.

The main areas of the Institute's scientific activity include:

- complex theoretical and experimental studies on chemical structure and substance reactivity in order to gain new fundamental knowledge about the chemical structure and properties of substances that allow new chemical processes and advanced materials to be developed, including nanomaterials;
- development and evolution of the methods for calculation and modeling the structure and properties of disordered systems; study of structural and phase transformation of nanostructured materials; development of new methods for physical and chemical research and analysis of substances and materials;
- establishment of scientific principles for development of new materials with desired properties and functions including high-purity materials; development of physical and chemical bases and highly efficient methods for production of new construction, metal, ceramic and composite materials, including nanocrystalline powders and ultra-refractory compounds; development of new generation catalysts;
- development of physical and chemical principles of metallurgical and chemical-and-technological methods for complex processing of mineral raw materials, recycling and industrial waste disposal, including radioactive waste;
- chemical problems of power generation and conversion; development of new promising electrolytes for highly efficient current sources and new materials for battery electrodes;
- development of component base and new metallic, ceramic composite materials, including nanostructural materials with high resistance to intense mechanical and thermal effects.

