

**LXIX International Conference "Nucleus-2019" on Nuclear Spectroscopy and Nuclear Structure. "Fundamental Problems of Nuclear Physics, Nuclei at Borders of Nucleon Stability, High Technologies"**

**Dubna, Russia, 1–5 July 2019**

**First Circular**

**Organizers**

Russian Academy of Sciences

Joint Institute for Nuclear Research

St. Petersburg State University

Moscow State University

**Organizing Committee**

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**Topics**

*Section 1.*

*Experimental study of properties of atomic nuclei*

- Neutron-rich nuclei of lightest elements;
- Nuclei far from stability valley;
- Synthesis of superheavy elements;
- Giant resonances;

- Multiphonon and multi-quasiparticle states of nuclei;
- High-spin and superdeformed states of nuclei;
- Beta decays of nuclei.

## *Section 2.*

### *Experimental study of mechanisms of nuclear reactions*

- Reactions with beams of radioactive nuclei;
- Reactions with polarized particles;
- Reactions with heavy ions;
- Fusion and fission of nuclei;
- Multifragmentation of nuclei;
- Reactions with neutrons and ultracold neutrons;
- Reactions induced by elementary particles.

## *Section 3.*

### *Theory of atomic nucleus and fundamental interactions*

- Nuclear many-body problem;
- Microscopic description of collective degrees of freedom and their interaction with single-particle degrees of freedom;
- Theory of systems with small number of particles;
- Nonlinear nuclear dynamics;
- Meson and quark degrees of freedom in nuclei, mesoatoms;
- Hypernuclei and other exotic systems;
- Double beta decay and neutrino mass problem;
- Interaction of nucleus with atomic shell electrons;
- Verification of theories of elementary particle interaction and conservation laws;
- Nuclear and particle physics applied to astrophysical objects.

## *Section 4.*

### *Theory of nuclear reactions*

- Theory of direct and statistical nuclear reactions, theory of multiple scattering;
- Theory of reactions involving clusters and heavy ions;
- Theory of relativistic nuclear collisions;
- Theory of polarization phenomena in nuclear reactions;
- Theory of proton, two-proton, cluster radioactivity and fission of nuclei.

## *Section 5.*

### *Application of nuclear physics methods in related fields of science and technology*

- Prospects for development of nuclear medicine;
- Nuclear physics research methods in field of nanophysics and nanotechnology;
- Radiation technologies for micro- and nanoelectronics and production of new materials;
- Problems of radiation reliability and radiation resistance of microelectronics products and spacecraft systems.

**The conference will include plenary sessions with invited and review reports (30 min.), sectional parallel sessions with original reports (15 min.), and poster sessions.**

**The materials presented at the conference will be published in the refereed journals**

- Bulletin of the Russian Academy of Sciences: Physics;
- Physics of Atomic Nuclei;
- Nuclear Physics and Engineering.

**Working language of the conference is English.**

### **Venue**

The conference will be held in Dubna, Russia, 1–5 July 2019. Dubna is a small quiet town located to the north of Moscow on the picturesque banks of the Volga River. There are convenient railway and bus routes from Moscow to Dubna.

### **Registration Fee**

The registration fee for participants is ₰ 5,000 (about € 66). The fee for accompanying persons is ₰ 2,000 (about € 26). Payment is made to the conference account before the start of the conference. The expenses for traveling, accommodation, and meals are borne by the participants.

### **Accommodation**

Accommodation will be organized at the hotel "Dubna". Preliminary prices are ₰ 2,680–3,050 (about € 36–41). Booking will be performed by the Organizing Committee according to the requests of participants.

## **Contacts of the Organizing Committee**

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## **The Organizing Committee asks all future participants to**

- register online at the conference website <http://indico.jinr.ru/event/nucleus2019>;
- send the abstracts to the conference E-mail: [nucleus2019@jinr.ru](mailto:nucleus2019@jinr.ru).

## **In your letters, please indicate the desired**

- sections for your reports;
- types of your reports (oral or poster).

The deadline for registration and abstract submission is **31 March 2019**.