

## **JURY'S RECOMMENDATIONS ON JINR PRIZES FOR 2024**

### **For theoretical research papers**

#### First prize

"Theoretical advances in the structural characterization of complex systems: fractals, hierarchical and multiphase materials".

Author: E. M. Anitas.

#### Second prizes

"High energy hadron elastic scattering ( $\sqrt{s} = 3.6$  GeV up to  $\sqrt{s} = 13\ 000$  GeV)".

Author: O. Selyugin.

"New physical effects caused by the gravitational field of objects moving at the speed of light".

Authors: E. Davydov, D. Fursaev, I. Pirozhenko, V. Tainov.

### **For experimental research papers**

#### First prize

"<sup>7</sup>He structure from the deuteron stripping reaction".

Authors: A. Bezbakh, R. Wolski, M. Golovkov, A. Gorshkov, A. Denikin, S. Krupko.

#### Second prizes

"Nucleon and cluster transfer in reactions with the <sup>9</sup>Be nucleus".

Authors: A. Azhibekov, D. Aznabayev, T. Issatayev, S. Lukyanov, V. Maslov, K. Mendibayev, M. Naumenko, Yu. Penionzhkevich, V. Samarin, T. Zholdybayev.

"Pressure-induced phase transitions in perovskite-like layered titanates".

Authors: A. Asadov, S. Kichanov, D. Kozlenko, E. Lukin, A. Mammadov, R. Mehdiyeva.

### **For methodology, research and technology papers**

#### First prize

"Development of the BM@N spectrometer at the NICA accelerator complex".

Authors: S. Bazylev, M. Kapishin, S. Khabarov, E. Kulish, A. Makankin, S. Piyadin, M. Rumyantsev, S. Sedykh, V. Yurevich, N. Zamyatin.

#### Second prizes

"Development of the software complex for the implementation of a unified architecture for distributed data processing and storage at the BM@N/NICA experiment".

Authors: E. Alexandrov, I. Alexandrov, N. Balashov, A. Chebotov, I. Filozova, K. Gertsenberger, P. Klimai, A. Moshkin, I. Pelevanyuk, G. Shestakova.

“Creation of a full-cycle technological complex for the development, production and testing of Micromegas coordinate detectors”.

Authors: D. Dedovich, A. Gongadze, I. Gongadze, L. Gongadze, N. Kaurtsev, N. Kovyazina, I. Lyashko, I. Minashvili, I. Potrap, T. Rudenko.

### Third prizes

“The MONUMENT experiment: ordinary muon capture studies for the  $0\nu\beta\beta$  decay”.

Authors: V. Belov, K. Gusev, I. Zhitnikov, D. Zinatulina, S. Kazartsev, N. Romyantseva, E. Shevchik, M. Shirchenko, M. Fomina.

“Creation a hardware and software complex to study the characteristics of the cathode strip chambers of the CMS experiment at the LHC in proton-proton interactions and studying their performance under conditions of high background”.

Authors: A. Golunov, N. Gorbunov, A. Kamenev, V. Karzhavin, A. Lanev, V. Matveev, V. Palchik, V. Perelygin, S. Shmatov, N. Voytishin.

“Numerical methods and problem-oriented program complexes for solving some partial differential equations of physical processes and systems”.

Authors: A. Gusev, O. Chuluunbaatar, G. Chuluunbaatar, J. Buša Jr., S. Vinitzky, T. Zhanlav, B. Batgerel, V. Ulziibayar, L. Hai, P. Wen.

### **For applied research and technology papers**

#### First prize

“Deep learning methods for various problems in agriculture”.

Authors: A. Uzhinskiy, G. Ososkov, A. Nechaevskiy.

#### Second prizes

“Development of contrast agents for multi-energy computed tomography”.

Authors: O. Medvedev, V. Rozhkov, G. Shelkov, D. Shashurin, R. Sotenskii, E. Suslova.

“Composite and hybrid functional nanomaterials based on track membranes”.

Authors: A. Nechaev, P. Apel, A. Rossouw, I. Vinogradov, O. Kristavtchuk, E. Andreev, L. Kravets, V. Kukushkin, B. Gorberg, L. Petrik.