I. Preamble

The Chair of the PAC for Condensed Matter Physics, D. L. Nagy, welcomed the PAC members, the ex officio members from JINR, the invited experts A. Ioffe, A. Ivanov, N. Froitzheim, F. Schilling, as well as the members of the JINR Directorate and presented an overview of the implementation of the recommendations made at the previous PAC meeting concerning JINR research in the area of condensed matter physics. The PAC is pleased to note that these recommendations were accepted by the Scientific Council and the Directorate of JINR.

JINR Vice-Director B. Sharkov informed the PAC about the resolution of the 128th session of the JINR Scientific Council (September 2020) and the decisions of the JINR Committee of Plenipotentiaries (November 2020).

II. Development of the concept for a new neutron source at FLNP

The PAC took note of the progress report on the development of a new neutron source at FLNP presented by V. Shvetsov.

Recommendation. The PAC welcomes the planned organization of a dedicated IBR-3 unit and feels that the extent of the work demanded to achieve milestones and deliverables according to the project plan requires an acceleration of this process.

III. Construction of the SOLCRYS laboratory at the SOLARIS National Synchrotron Radiation Centre

The PAC took note of the report on the progress of the SOLCRYS laboratory construction presented by N. Kučerka. A slight delay in the planned schedule occurred last year due to the unforeseen pandemic, however it appears to be manageable within the timeframe of the entire project schedule.

The PAC also took note of the results of the regular meetings of the working group for the construction of the SOLCRYS laboratory held in remote mode during 2020. The base elements discussed at the meetings were the superconducting wiggler and the construction project for extension of the experiment hall. Close attention was paid to the versions of the beamlines, the final specifications of which are to be proposed in 2021.

Recommendation. The PAC welcomes the progress in constructing the SOLCRYS laboratory and recommends paying closer attention to the construction schedule and design details of the laboratory. The PAC looks forward to receiving regular progress reports.

IV. Reports on the spectrometer complex of the IBR-2 facility

The PAC took note of the plans for the IBR-2 instrumentation development for 2021–2025 presented by D. Kozlenko and of the status of the DRV neutron diffractometer (real-time diffraction) at beamline 6A of the IBR-2 facility, presented by V. Turchenko. In particular, the PAC notes that the construction of the new small-angle neutron scattering and imaging option at beamline 10A of IBR-2 equipped with the cryogenic moderator is to complement the YuMO spectrometer and to meet high demands of the user community for small-angle scattering experiments. The development of the new inelastic neutron scattering spectrometer in inverse geometry at beamline 2 of IBR-2 is essential for extending the capacities of experiments in studying the dynamics and vibrational properties of condensed matter. The activities focused on the development and modernization of other instruments are important for providing competitive research opportunities compared to other leading neutron centres, for the successful realization of the FLNP scientific programme and User Programme, as well as for the extension of the research scope at the facility.

Recommendation. The PAC supports the reported modernization and the suggested measures planned for improving the performance of the instruments by increasing the signal-to-background ratio.

V. Information about the FLNP User Programme

The PAC took note of the report presented by D. Chudoba on the statistics of the FLNP User Programme at the IBR-2 spectrometers and implementation of the new web application intended for collecting and evaluating research proposals. The PAC is pleased to note that the IBR-2 facility has been operating according to the User Programme even in the pandemic period.

Recommendation. The PAC supports further development of the FLNP User Programme and recommends its extension. The PAC appreciates the implementation of the new web application.

VI. Scientific report

The PAC heard with interest the scientific report “Experimental studies and multiscale modelling of latent tracks in radiation-resistant insulators” presented by V. Skuratov. The PAC thanks the speaker for his excellent presentation.

VII. Information about an international conference

The PAC took note of the information about the International Conference “Condensed Matter Research at the IBR-2” (12–16 October 2020, Dubna) presented by T. Ivankina. The PAC recognizes the significant attention of the international scientific community to the recent research results in condensed matter physics obtained at the IBR-2 facility. The PAC appreciates a wide range of the discussed issues on the application of neutron scattering and supplementary experimental techniques in condensed matter physics, chemistry, life sciences, materials science, engineering, and earth sciences. The PAC appreciates the importance of similar interdisciplinary conferences and the permanent increase of the quorum of participants.

Recommendation. The PAC recommends that the practice of holding similar international conferences should be continued in future.

VIII. Prioritization of projects

Following the discussion at the meeting with members of the JINR Directorate, the PAC expresses its intension to proceed with the ranked assessment of all the JINR research themes and projects within the competence of the PAC for Condensed Matter Physics based on their scientific merit of the project and theme and the performance of the JINR group involved. The PAC declared its readiness to act in this process and asked the JINR Directorate for a full list of such themes and projects categorized according to directions of research. The PAC offered to set up the required priority list by electronic means.

Recommendation. The PAC recommends organizing an extraordinary follow-up meeting in videoconference mode in April 2021 to finalize the priority list of the themes and projects.

IX. Next meeting of the PAC

The next meeting of the PAC for Condensed Matter Physics is scheduled for 28–29 June 2021.

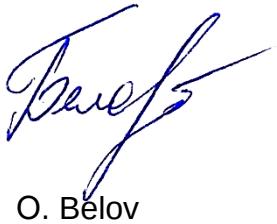
The preliminary agenda for the next meeting of the PAC includes:

- report by the PAC Chair on implementation of the recommendations of the current PAC meeting;
- report by the JINR Directorate on the sessions of the Scientific Council (February 2021) and of the Committee of Plenipotentiaries (March 2021);

- reports and recommendations on themes and projects to be completed in 2021 and on new themes and projects;
- progress in developing the concept for the new neutron source of JINR;
- status reports on the upgrade of FLNP instruments;
- information about scientific meetings;
- scientific reports (not more than three);
- poster session.

D. L. Nagy

Chair of the PAC
for Condensed Matter Physics



O. Belov

Scientific Secretary of the PAC
for Condensed Matter Physics