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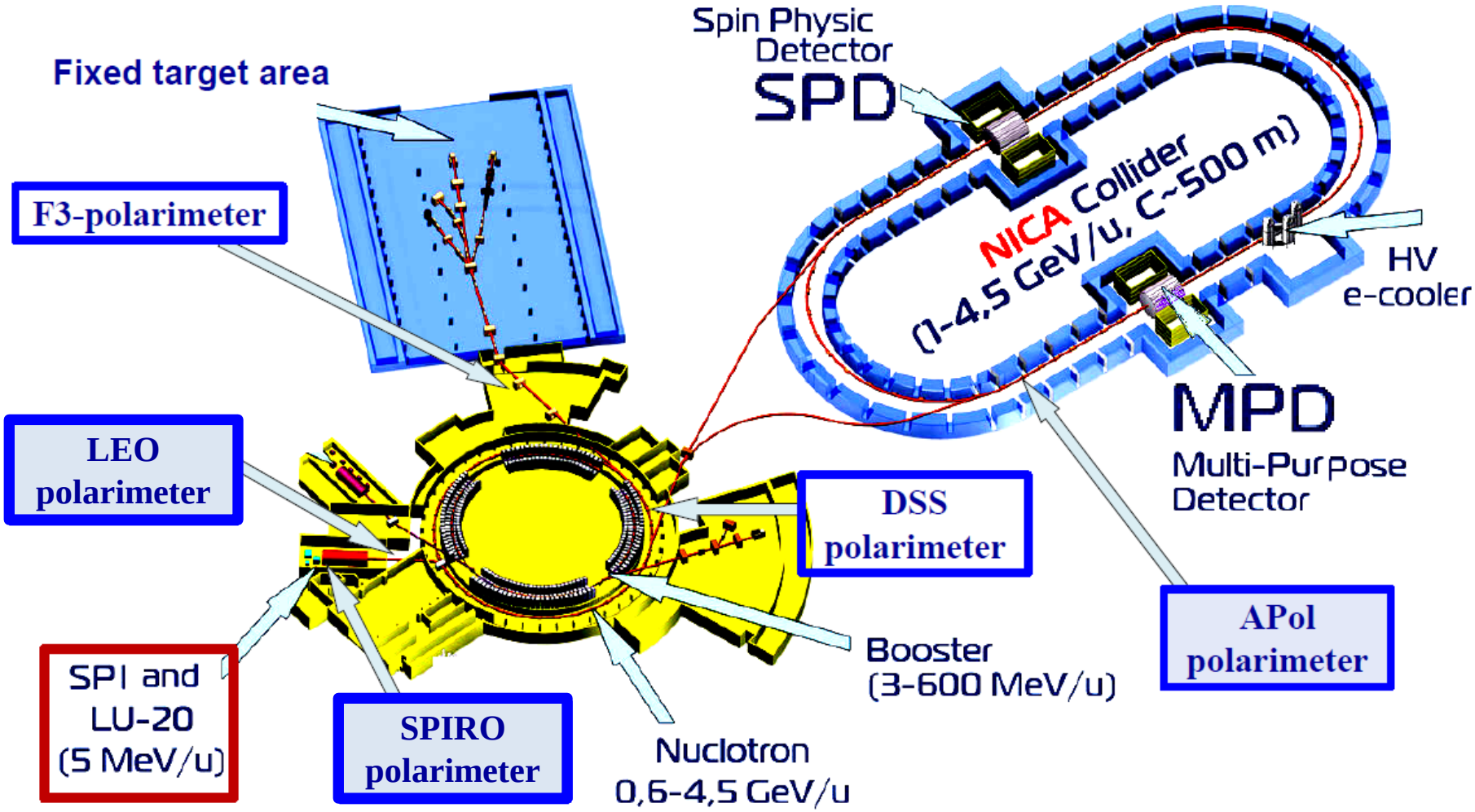
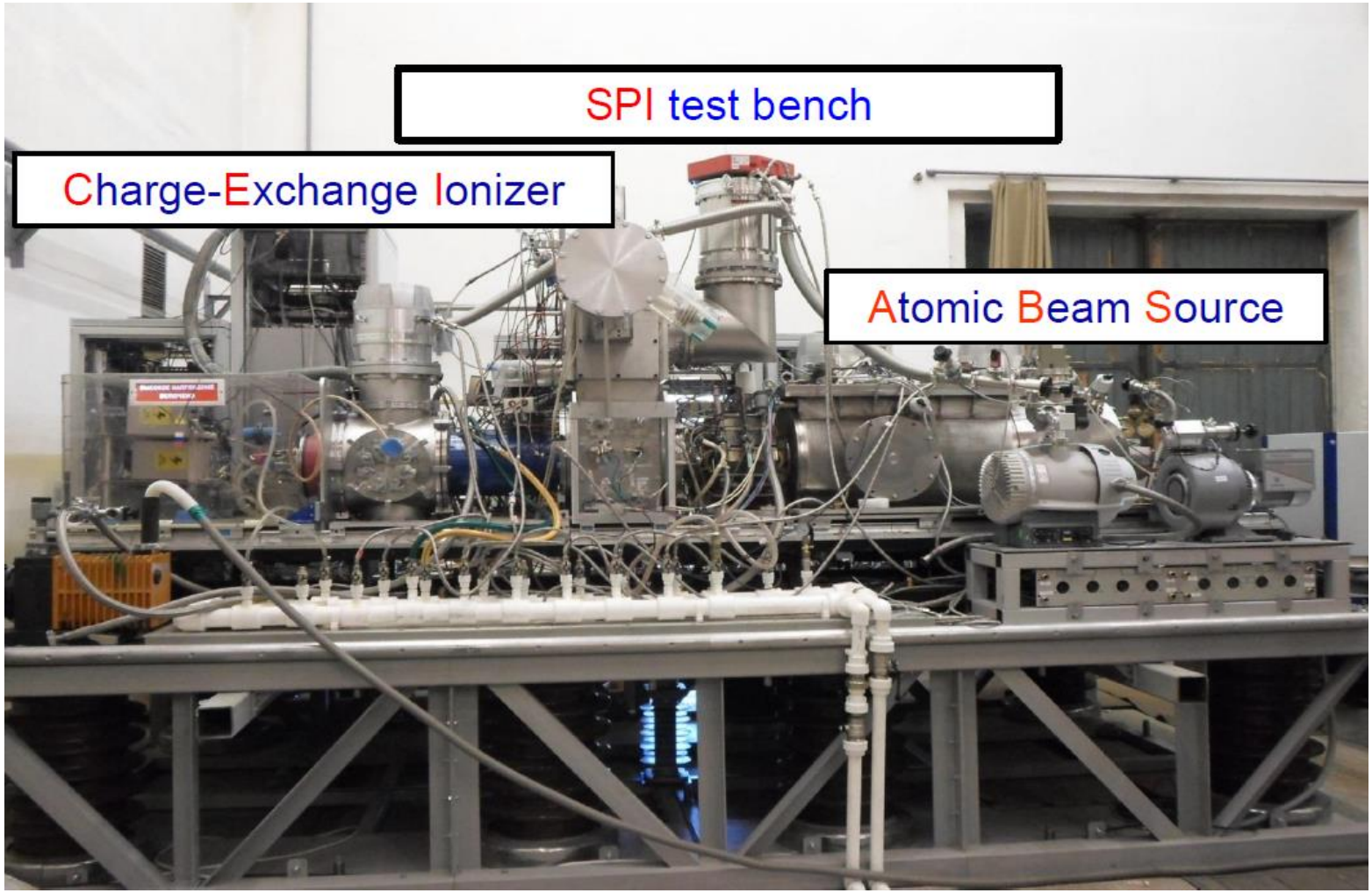
Implementation of polarization program



Physics with polarized light ion beams is considered as an important part of the NICA program

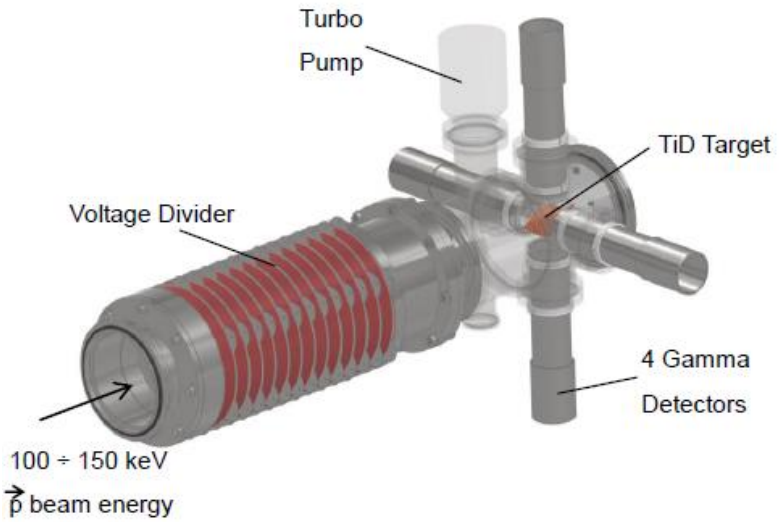
Source of Polarized Ions (SPI)

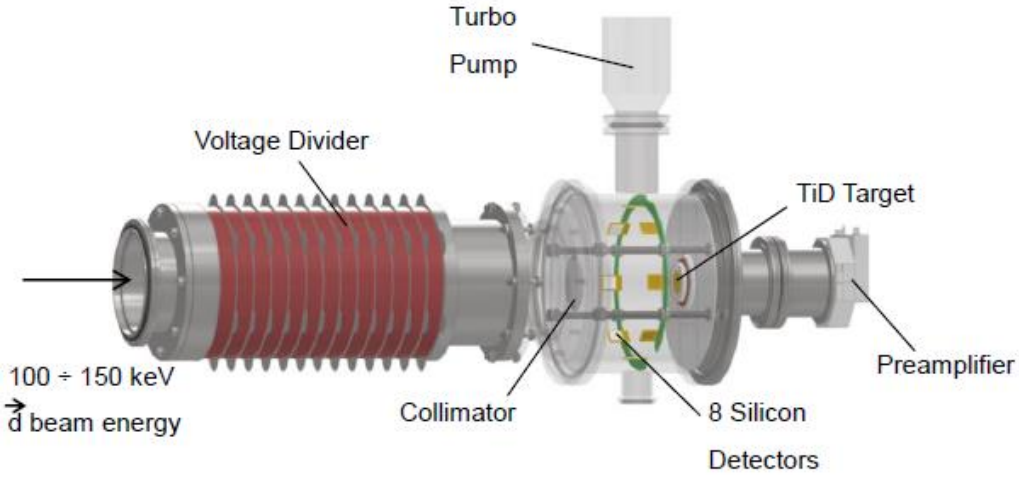


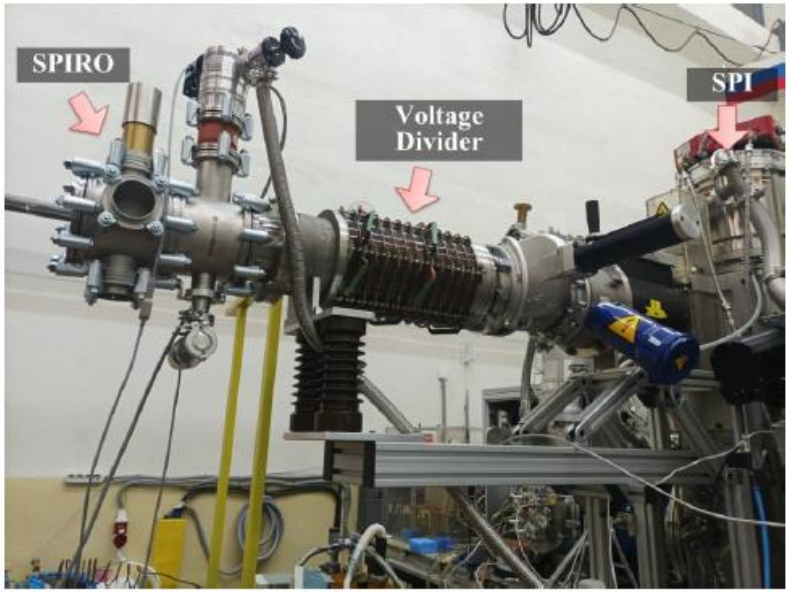
The design output current of the **SPI** is up to **10 mA** for **↑D^+ (↑ H^+).**

The **D^+ (H^+)** polarization will be up to 90% of the maximal vector **(±1)** & tensor **(+1,-2)** polarization.

SPI Low Energy Polarimeter (SPIRO)







SPIRO is designed to work with beam energies from **25 to 150 keV**.

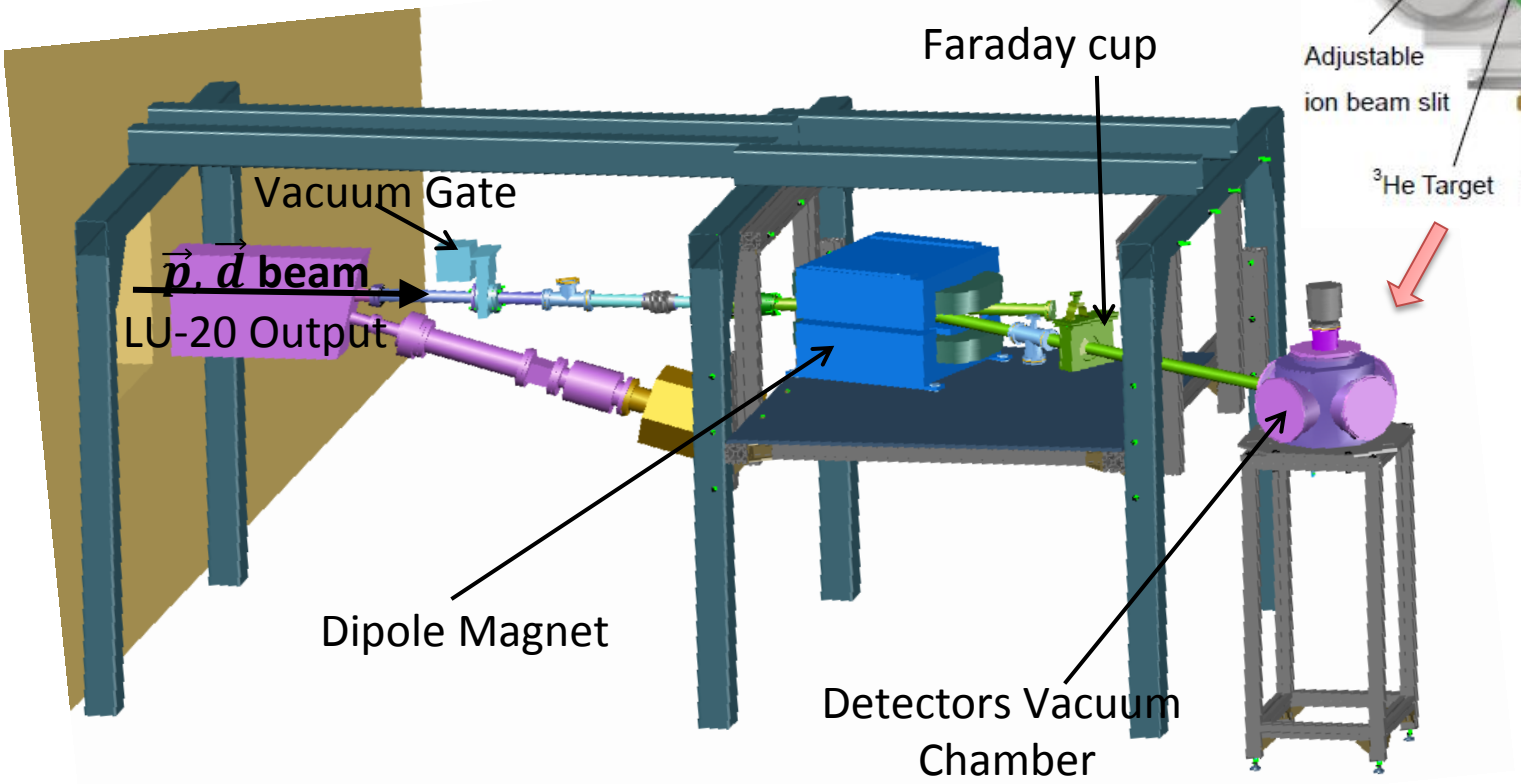
For polarized protons – **D(p,γ)^{3}He** reaction.

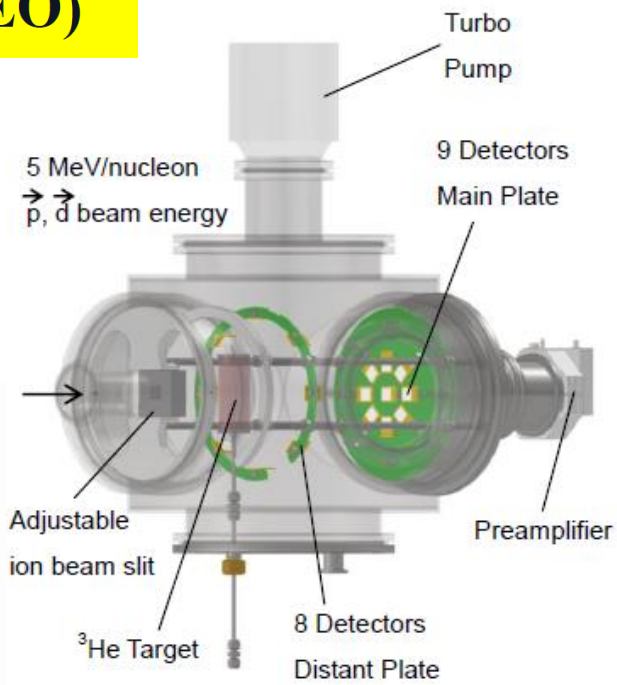
For polarized deuterons – **D(d,p)T** reaction.

Low Energy Polarimeter (LEO)

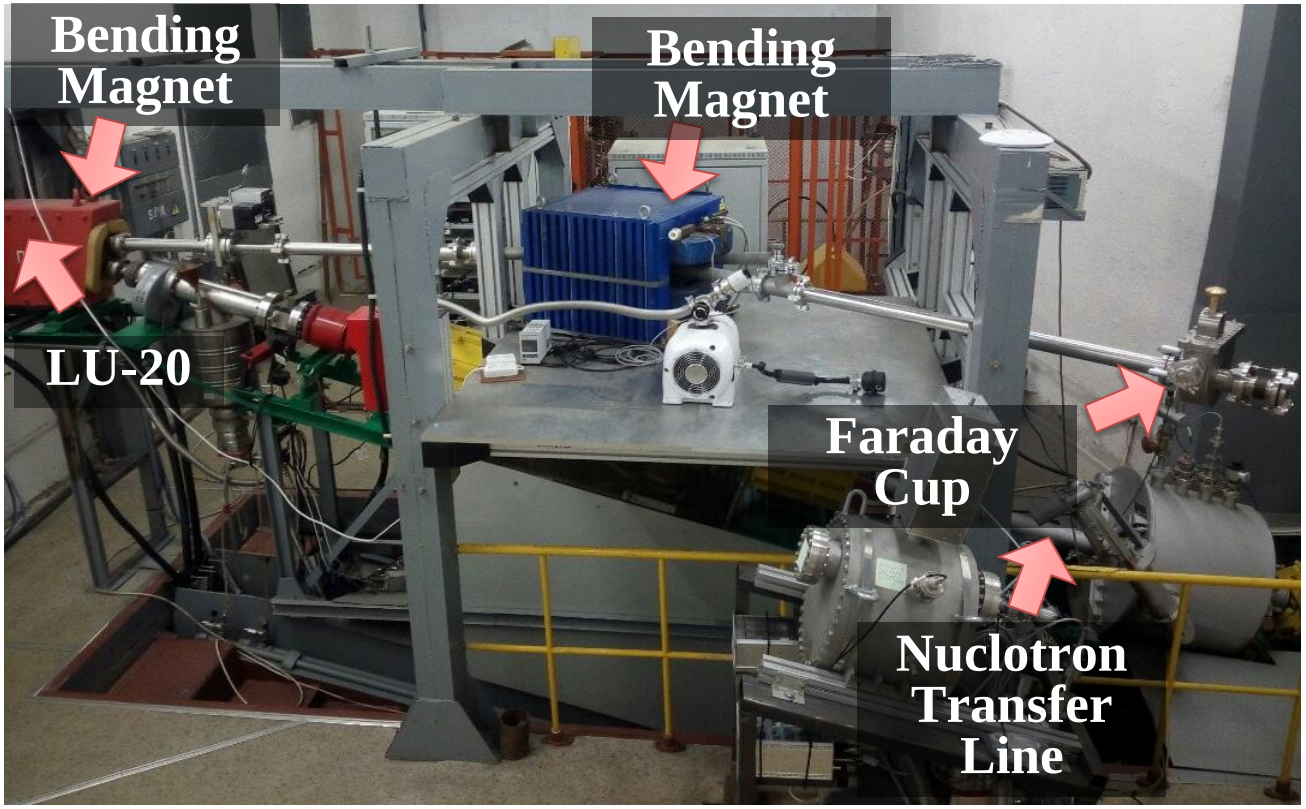
LEO is placed behind the linear accelerator Lu-20.

Its operating energy is **5 MeV** per nucleon.





Low Energy Polarimeter (LEO)



For polarized protons – ^{3}He(p,p)^{3}He elastic scattering reaction.

For polarized deuterons – ^{3}He(d,d)^{3}He elastic scattering reaction and ^{3}He(d,p)^{4}He reaction.

Список научных трудов

1. M.V. Kulikov et al. *NICA absolute Polarimeter*, J. Phys.: Conf. Ser. **1435**, 012038 (2020).

2. M.V. Chushnyakova, I.I. Gontchar, R.A. Kuzyakin, *Computer simulating of nanoprocesses: Thermal jumps over a low barrier in the overdamped regime*, J. Phys.: Conf. Ser. **1546**, 012115 (2020).

3. V.V. Fimushkin et al. *Polarization Facilities at the JINR Accelerator Complex*, JPS Conf. Proc. **37**, 020802 (2022).

Список конференций

1. Spin 2021 – 24rd International Spin Symposium (18-22 October 2021, Matsue, Japan), устный доклад, **докладчик**.

2. Симпозиум «Вопросы поляризационной физики легких ядер» (27-30 Июня 2022 г., ПИЯФ им. Б.П. Константинова НИЦ «Курчатовский институт», г. Гатчина, Ленинградская обл.), соавтор доклада.

3. SPD collaboration meeting (3-6 October 2022, VBLHEP, JINR, Dubna), соавтор доклада.

4. THE XV-th INTERNATIONAL SCHOOL-CONFERENCE "THE ACTUAL PROBLEMS OF MICROWORLD PHYSICS" (Minsk, Belarus, 27 August – 3 September, 2023), соавтор доклада.

5. XV Международный семинар по проблематике ускорителей заряженных частиц памяти проф. В.П. Саранцева (15-20 сентября 2024 г., Алушта, Крым), соавтор доклада.

6. JINR-IMP collaboration (26 September 2024, VBLHEP, JINR, Dubna), соавтор доклада.

7. JINR-IMP collaboration (26 September 2024, VBLHEP, JINR, Dubna), устный доклад, **докладчик**.