Vacuum system of the NICA Collider

**General information**

Workplace: JINR, Laboratory of High Energy Physics  
Date of publication: 15 May, 2019  
Contract Period: 3 years  
Expected date of employment: 10 January, 2020  
Proportion of work: Full time  
Remuneration: 35000 Euro per year; social package: refund of the apartment rent and family insurance;  
13% income tax is applied in accordance with the RF regulations.  
Desired level of education: PhD  
Experience required: 5 years

**Missions**

JOB DESCRIPTION: The postdoctoral fellow will be a member of the Accelerator division at VBLHEP JINR. The division’s work focuses on the development of the NICA accelerator facility, which includes two storage rings of the NICA Collider. The collider magnetic system is based on twin aperture superconducting magnets located in the common cryostat. To provide required luminosity life-time the residual gas pressure in the beam pipes has to be of the order of 10^{-10} Torr. The present position will support principally
- design of the Ultra High Vacuum (UHV) pumping system of the NICA collider,
- Participation in design of the devices located in the beam pipes,
- Design and construction of test benches for conditioning of the UHV elements,
- participation with test and conditioning of the beam pipes elements,
- participation in assembly and test of the UHV Collider system.

**Activities**

The postdoctoral fellow will be involved in the operation of the existing UHV system of the NICA Booster, in the conditioning of elements of the collider UHV system, tuning and commissioning of the Collider UHV system. He will also undertake the analysis of the commissioning and operational results. The interpretation and publication of the results of this work is expected.

**Skills**

The successful applicant is expected to have a solid background in physics and technique of UHV systems. Experience with peculiarities of dynamic vacuum problems at superconducting accelerators is highly desirable. The handling and analysis of pressure dynamics, including the use of a computer analysis tools would be considered an asset.

Proficiency in English is essential. Knowledge of Russian would be an asset.

**Work Context**

WORKPLACE: The position will be held within VBLHEP vacuum group. The group is a part of the Accelerator division comprises some 350 staff (scientists and technical support). The division is situated on the VBLHEP working area.

**Constraints and risks**

The postdoctoral fellow will be expected to undertake travels, in particular to Germany, for periods varying from some 1 to 4 weeks. During experiments shift work and working on weekends may be necessary. The experiments will be carried out at accelerator facilities whereby the necessary authorizations will be attributed following a yearly medical examination arranged by the laboratory.

**To apply**

Applicants should include a detailed CV, a brief statement of research interests, list of publications highlighting representative publications and arrange to have at least two letters of reference forwarded to:
Dr. Butenko A. V. butenko@jinr.ru  
Prof. V.D. Kekelidze, via e-mail to kekelidze@jinr.ru, before 1st of September 2019.

Short-listed candidates will be invited to an interview, remotely, or in person.