



## **Postdoctoral Programme in High Energy Ion Implantation Effects in Wide Bandgap Semiconductors**

**12-month contract**, renewable for another max. 24 months

### **Your mission**

The main objective of this position is evaluation of potential of high energy heavy ion irradiation as a tool for tailoring of electrical and optical properties of wide band gap semiconductors such as GaN and Ga<sub>2</sub>O<sub>3</sub>. This suggests detail examination of radiation damage formation in these materials in wide range of ion fluences at different irradiation temperatures. The work will be carried out in direct collaboration with University of Nizhny Novgorod and the institute of Semiconductor Physics (Novosibirsk).

### **Your tasks**

You will work with sector N8 of Laboratory of Nuclear Reactions “Ion implantation nanotechnology and radiation material science”. Your research programme will be focused on:

- Microstructural examination of ion track associated radiation defects in wide band gap semiconductors irradiated with swift heavy ions using scanning and transmission electron microscopy, XPS and XRD techniques.
- Laser confocal scanning microscopy and Raman spectroscopy studies of optical properties of irradiated semiconductor materials.

### **Constraints and risks**

The candidate is expected to undertake international business trips for periods varying from 1 to 4 weeks. Shift work and work on weekends may be necessary, remote work is allowed.

Depending on your citizenship, you may need to obtain a visa and this process can last several months. JINR offers all the necessary support for obtaining the entry permit for the Russian Federation.

## Your profile

- Highly motivated candidate with a PhD (obtained less than 5 years ago) in physics, semiconductor physics, or in a similar field.
- Age under 40, have not had more than 3 temporary positions.
- Strong background in experimental physics or materials science is a prerequisite.
- Practical experience in structural characterization of semiconductor materials would be advantageous.
- As an international intergovernmental research organization, we are particularly keen to ensure that we also attract applicants from outside Russia. You must have a good knowledge of English and be willing to learn Russian (a language course will be paid for by JINR).

## What we offer

### High quality of life

Called the "Island of Stability", the city of Dubna is ideally located on the bank of Europe's largest waterway — the Volga River (only 2.5 hours from Moscow by train or bus and 1.5 hours by car from Sheremetyevo International Airport). It is important for us that our employees quickly and easily adapt to the new living conditions and have a healthy work-life balance. Therefore, we offer accommodation in comfortable guest-house rooms (for singles), or fully furnished flats owned by JINR, and annual paid leave.

### Prospects

We guarantee you a **12-months postdoctoral contract, renewable for another max. 24 months (36 month in total)**, in a multicultural scientific environment.

### Remuneration

2300 USD per month (paid in Russian rubles at the planned exchange rate (forecasted year-average, adopted in the JINR budget for the current year, which is fixed on the date of conclusion of the contract and valid throughout its entire term). In 2025, the exchange rate is 96.5 Russian rubles per 1 USD, in 2026 the planned exchange rate will be 92.2 Russian rubles per 1 USD).\*

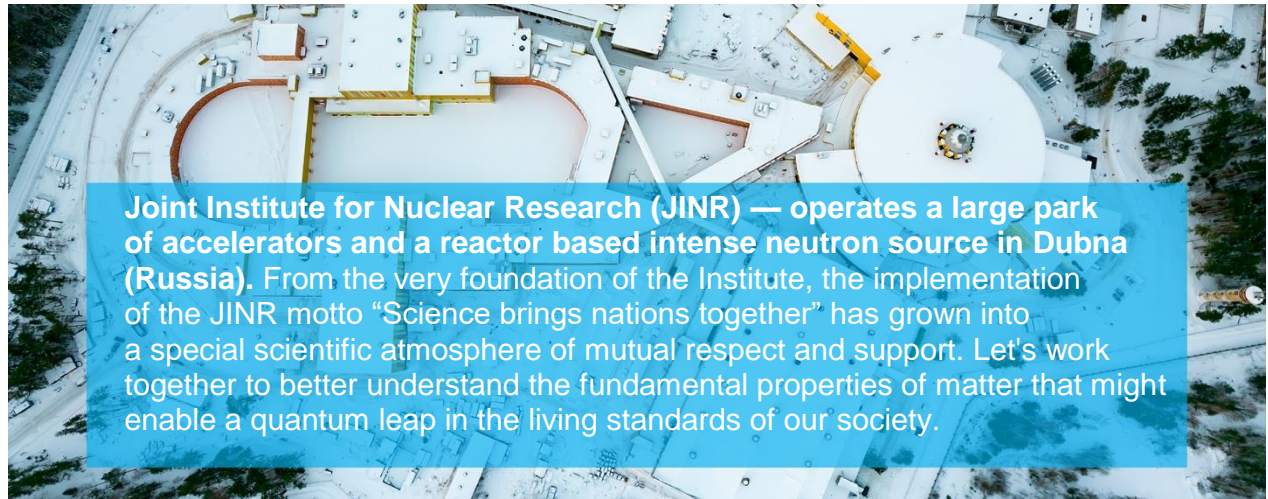
Income tax of 13% is applied. The employer shall pay no pension insurance.

\*The average per capita income in the Moscow region is 110 thousand rubles.

### Benefits

We offer considerable social benefits: annual paid leave of 42 calendar days with an additional one-time payment of 50 % of your monthly salary after one year of work, air fare (except for family members) at the beginning and the end of the employment period in case the terms of the contract are fulfilled, accommodation (50 %, without cost of utilities and furniture rental), free local health insurance for you and your family members, relocation assistance (reimbursement of the cost of excess baggage and transfer from/to airport at the beginning and end of the contract for all family members). We also offer free Russian courses and subsidies for the use of JINR sports infrastructure (Olympic swimming pool, stadium, gym, etc.), as well as access to a variety of cultural activities.

**Apply now**



**Joint Institute for Nuclear Research (JINR) — operates a large park of accelerators and a reactor based intense neutron source in Dubna (Russia).** From the very foundation of the Institute, the implementation of the JINR motto “Science brings nations together” has grown into a special scientific atmosphere of mutual respect and support. Let's work together to better understand the fundamental properties of matter that might enable a quantum leap in the living standards of our society.

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