

The University of Nova Gorica has an open position for

**ASSISTANT WITH PhD (POSTDOCTORAL ASSOCIATE) IN THE FIELD OF PHYSICS
(m/f/o)**

This position is available to candidates interested in pursuing a research and academic career at the University of Nova Gorica. We offer the opportunity to work in a dynamic environment supported by state-of-the-art research equipment and a strong involvement in international research.

Research activities will take place at the Laboratory of Quantum Optics.

The laboratory specializes in advanced experimental techniques for the investigation of ultrafast and element-specific phenomena in quantum and functional materials. Its core activities include:

- **Femtosecond Angle-Resolved Photoemission Spectroscopy (ARPES):** This technique enables real-time tracking of electron dynamics and band structure evolution with femtosecond temporal resolution. It is applied to a wide range of systems, including 2D semiconductors, topological insulators, and strongly correlated materials.
- **Resonant XUV Magneto-Optical Kerr Effect (MOKE) scattering,** facilitating element-specific ultrafast magnetic studies in thin films, magnetic alloys, and 2D magnetic materials, with temporal resolution enabled by femtosecond laser pumping.

These setups are powered by a high-energy femtosecond laser system, capable of generating coherent radiation in the optical and extreme ultraviolet (XUV) regions via high-harmonic generation (HHG) in gases.

- **X-ray and Ultraviolet Photoelectron Spectroscopy (XPS/UPS):** Utilizing laboratory-based sources (Al K α X-ray source and He discharge lamp), these techniques provide surface-sensitive chemical and elemental analysis of thin films, oxides, catalytic materials, and 2D systems.

Key responsibilities:

- hands-on operation and maintenance of femtosecond laser systems and related laboratory instrumentation,
- develop an independent research line aligned with the laboratory's activities and scientific goals,
- participate in teaching activities for undergraduate physics courses,
- contribute proactively to the preparation and management of research projects, pursuing national and international funding opportunities,
- support recruitment and supervision of PhD students.

Candidates are expected to:

- PhD in natural sciences from the field of solid state physics or materials research,
- knowledge of photoemission and/or other ultrafast spectroscopies,
- practical experience with high-power ultrafast lasers and assembly of complex optical setups, especially for pump-probe studies
- proactive attitude towards research funding acquisition and development of scientific collaborations,
- requirements for election to the title of assistant at the University of Nova Gorica,
- ability to work effectively in multidisciplinary teams,
- strong communication skills and aptitude for university-level teaching,
- excellent command of the English language.

Offer:

- stimulating international research environment at a leading center in ultrafast spectroscopy,
- opportunities for professional growth and collaboration with international research groups.

Please submit:

- CV including a description of degree certificate,
- description of previous research experiences,
- list of publications,
- signed statement of proficiency in English,
- motivation letter.

The position will be available as soon as the selection process is completed. The contract is for full-time working hours over a fixed term of 12 months with possibility of renewal.

Deadline for applications: **September 18, 2025**

Application procedure:

Applications should be sent by e-mail **as a single file in pdf format** to the University of Nova Gorica Personnel office, e-mail address: careers@ung.si

Inquiries regarding the application procedure should be directed to: Jasna Vukmir (e-mail careers@ung.si or phone +386 5 6205 822).

Inquiries regarding the research work - giovanni.deninno@ung.si

Univerza v Novi Gorici
Vipavska cesta 13, Rožna Dolina
5000 Nova Gorica, Slovenija

