



Vipavska cesta 13, 5000 Nova Gorica

**The University of Nova Gorica has a vacancy for
a post-doctoral position in ultra-fast characterization of complex magnetic materials
(m/f)**

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](#).

Applications are welcomed for a post-doctoral position in experimental physics at the Laboratory of Quantum Optics, University of Nova Gorica (Slovenia). The focus of the research project is the investigation of static and dynamic properties of magnetically ordered systems utilizing laser-based magneto-optic effects, such as Kerr and Faraday. The research will delve into the realms of magnetism in diverse metal/semiconductor heterostructures and the impact of spin diffusion on ultra-fast magnetism phenomena.

Experimental activities will be conducted using a setup that generates high-order (XUV) harmonics of an infrared high-power laser, yielding short pulses in the tens-of-femtoseconds range. Such radiation can be precisely tuned at the M and N absorption edges of various transition metal and rare-earth compounds, enabling element-sensitive, time-resolved investigations of complex magnetic materials, in response to electronic and crystal excitations.

The project entails further development and characterization of the experimental setup, encompassing the generation of ultra-short (few-femtosecond and attosecond) XUV pulses, carrying both spin and orbital angular momenta.

The research work will take advantage of a network of international collaborations, involving, in particular, the teams working with the FERMI free-electron laser at Elettra Sincrotrone Trieste (Italy).

Additionally, the selected applicant will have the opportunity to establish and pursue their own research field, within the scope of the project.

Candidates are expected to:

- PhD in the field of physics, physical chemistry, materials, or a related discipline,
- requirements for election to the title of assistant at the University of Nova Gorica,
- have good command of the English language.

Please submit:

- CV including a description of previous research experience,
- list of publications,
- proof of education,
- letter of motivation.

Preference will be given to candidates with experience in working with complex magnetic materials and proficiency in setting up optical schemes involving ultra-fast lasers.

In accordance with their appointment, the successful candidate will also take on teaching duties on selected study programmes at the University, School of science.

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 the opportunity of further extension, subject to performance and organizational needs.

Deadline for applications: 27. 5. 2024

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

For further details regarding the scientific aspects of the call, please reach out to Prof. Giovanni De Ninno (giovanni.de.ninno@ung.si). For more information about the Laboratory of Quantum Optics at the University of Nova Gorica, applicants can consult the webpage <https://www.ung.si/en/research/laboratory-of-quantum-optics/>.