

FORM FOR EMPLOYERS

INSTITUTION **UNIVERSITY OF WARSAW, FACULTY OF PHYSICS**

CITY **WARSAW, POLAND**

POSITION **ASSISTANT PROFESSOR IN THE FNP “FIRST TEAM”
RESEARCH PROJECT (Grant No. FIRST TEAM/2016-2/17)**

DISCIPLINE **THEORETICAL PHYSICS / CONDENSED MATTER
THEORY**

NUMBER OF POSITIONS **1**

POSTED **6 September 2017**

EXPIRES **2 October 2017**

WEBSITE **WWW.FUW.EDU.PL and WWW.STOBINSKA-GROUP.EU**

KEY WORDS **Condensed matter physics, theoretical physics, quantum
plasmonics, graphene, quantum optics**

JOB TYPE **FULL-TIME JOB / WORK AGREEMENT FOR THE
PERIOD: 1 November 2017 – 31 May 2020**

DESCRIPTION:

**Foundation for Polish Science “First Team” project entitled *Integrated optics in time-frequency domain: a new versatile platform for quantum technologies*
(Principal Investigator: Dr. habil. Magdalena Stobińska)**

Quantum technologies enable solutions providing e.g. unconditionally secure information transfer or ultrasensitive detectors. They use entanglement, superposition and interactions at a single quanta level. Time-frequency integrated quantum optics is ideally suited for these tasks: flexible, scalable, robust to losses, offers high control of single photons. Its potential has not yet been explored. In this project, we plan to build high-quality random number generator and nanodevices based on graphene plasmons. To this end, we will advance the platform, producing pure spectrally-shaped single photons. Its features will allow to surpass the present technology to produce true randomness and study photon-plasmon interactions in 2D nanomaterials. Additional training will be provided by top specialists in integrated optics: the University of Paderborn and the University of Oxford.

Key responsibilities:

1. Performing theoretical research under supervision of the principal investigator
2. Timely achieving scientific goals enumerated in the project research programme
3. Developing numerical software and performing computations
4. Studying literature on a regular basis and suggesting solutions to scientific problems
5. Managing research notes, preparation of publications, conference posters and presentations
6. Participation in scientific conferences and workshops
7. Monitoring of the Ph. D. students' work
8. Performing helper organizational and administrative tasks
9. Reporting

The candidates have to conform to the conditions stated in art. 109 of Higher Education Law dated 27.07.2005. (uniform text: Journal of Laws of the Republic of Poland 2016, item 1842 with further amendments).

Requirements:

1. Ph. D. degree in theoretical physics, with specialization in condensed matter physics (experience in analytical and numerical modelling of research of two-dimensional plasmon-polariton systems is a plus)
2. Ambitious hard-working with high motivation for scientific work and strong will for self-development
3. Numerical programming practice, good knowledge of mathematical tools (e.g. Matlab or Wolfram Mathematica) and general computer software (e.g. Microsoft Office, Skype) as well as LaTeX typesetting environment
4. Good practical knowledge of English (C level or native speaker)
5. Ability to work collaboratively
6. Mobility (ability to travel within the EU and worldwide)

The candidate should provide the following documents:

1. Application for the position required together with the acceptance for the treatment of personal data: "I hereby give consent for my personal data to be processed for the purposes of recruitment, in accordance with the Personal Data Protection Act dated 29.08.1997 (uniform text: Journal of Laws of the Republic of Poland 2016, item 922)";
2. A copy of the Ph. D. diploma or a certificate of obtaining the Ph.D. degree
3. Recommendation letter from the Ph. D. supervisor; recommendation letters from other senior scientists are welcome
4. Scientific curriculum vitae describing education, employment history, previous participation in research projects, collaborations, internships, stipends, conferences, other achievements as well as scientific interests
5. List of publications
6. Motivational letter stating why the candidate is willing to participate in this research project
7. Optional: a copy of a document certifying candidate's knowledge of English

The candidate should send the documents to email address **magdalena.stobinska@fuw.edu.pl**.

The entire procedure will be concluded before **5 October 2017** The candidate might be asked for an interview with the commission appointed by the Dean of the Faculty.

This announcement is the first step in the procedure of employing an academic teacher and its positive result will be a base for consecutive steps.