**INSTITUTION**: UNIVERSITY OF WARSAW, FACULTY OF PHYSICS  
**CITY**: WARSAW, POLAND  
**POSITION**: Independent engineering and technical employee  
**DISCIPLINE**: Physical Sciences  
**NUMBER OF POSITIONS**: 1  
**EXPIRES**: 03.11.2021  
**WEBSITE**:  
**KEY WORDS**: Topological effects in Liquid Crystal optical cavities, strong light-matter coupling

**DESCRIPTION (field, expectations, comments):**

This research will be carried out in the Polariton Laboratory at the Division of Solid State at the Institute of Experimental Physics at the Faculty of Physics of the University of Warsaw, under the FET-Open program Horizon 2020 project No. 964770 TOPOLIGHT entitled: "Soft matter platform for optical devices via engineering of non-linear topological states of light".

The Faculty of Physics at the University of Warsaw is coordinating the TopoLight research project selected in the prestigious international competition of the European Innovation Council (EIC) FET-Open under the Horizon 2020 action. TopoLight is a consortium of five renowned research centers. It is created by the Faculty of Physics of the University of Warsaw (coordinator, Poland), IBM Zurich (Switzerland), University of Southampton (Great Britain), Institut Pascal CNRS (France), Military University of Technology (Poland). Scientists will work together on liquid crystal optical devices that will use nonlinear topological states of light.

Liquid crystals (LC) are advanced materials known for their anisotropic optical properties allowing to control the polarisation of light and are used in various optical devices. Now the time has come to push the LC applications further by implementing them into novel polariton devices to control topological properties of light. TopoLight deals for the first time with non-linear effects in room temperature Bose-Einstein condensate (BEC) and topological states of light uncovering astonishing possibilities of external electrical control over spin-orbit interaction...
interaction due to artificially engineered fields acting on photons. With a two main technological approaches: originating from solid-state physics and developing molecular control of LC devices, we aim to demonstrate novel systems of tunable topological emitters based on room temperature BEC substantial in topological photonics and information encoding.

Within the TopoLight project we will fabricate and investigate photonic structures to start an innovative integrated hybrid organic/liquid-crystal system for room temperature BEC research and applications. We will create topologically protected states of light: unidirectional flow robust against backscattering and vortex states carrying quantised angular momentum. We will utilise the strong non-linearities observed in organic microcavities and SOC in liquid-crystal cavities to demonstrate single photon polarisation switches capable for ternary logic. Our OLC microcavities (MCs) platform will combine a strong emissivity with the ease of fabrication, low costs, and scalability and room temperature operation.

At the Faculty of Physics of the University of Warsaw, the project will be carried out in the Polaritone laboratory in the group of Prof. Jacek Szczytko, who coordinates the work of the entire consortium.

The requirements

1. At least 5 year of experience in scientific research in the optical laboratory: measurements of reflection, transmission, luminescence, work with continuous-wave and pulsed laser sources.
2. Scientific publications in Q1 journals in the field (according to Web of Science).
3. Conference presentations in the form of posters and oral presentations of candidate results at prestigious scientific conferences or seminars.
4. Ability to theoretical modeling of physical phenomena. Knowledge of Mathematica, Matlab etc.
5. Ability to program laboratory devices (e.g. LabView, Python, etc.).
6. Ability to create graphic visualizations (e.g. Corel Draw, Blender, etc.) confirmed by the attached graphics.
7. Knowledge of the English language at the level of at least B2.
8. MSc in physics or MSc in engineering sciences related to physics is required.

Key responsibilities

The candidate will conduct research in the optical laboratory. His/Her duties will include preparing experimental setups, helping MSc and PhD students, collecting and analyzing data, modeling physical phenomena, writing scientific publications, and data visualization.

Conditions

1. Full time position.
2. Salary 67,298.76PLN / year (with taxes). There is also a possibility to receive a supplementary remuneration.
4. Contract for 7 months with the possibility for extension till the end of the projects duration 39 moths in total.
5. Work will be carried in the in the Polariton Laboratory at the Division of Solid State at the Institute of Experimental Physics at the Faculty of Physics of the University of Warsaw.

**Application procedure**

Candidates should send to Jacek.Szczytko@fuw.edu.pl till 03.11.2021 documents listed below.

1. Information on the processing of personal data, the form is attached to this announcement (also available on the website [https://bsp.adm.uw.edu.pl/wp-content/uploads/sites/18/2021/01/Klauszula-informacyjna-przy-rekrutacji-do-pracy_11_2019_EN.docx](https://bsp.adm.uw.edu.pl/wp-content/uploads/sites/18/2021/01/Klauszula-informacyjna-przy-rekrutacji-do-pracy_11_2019_EN.docx)). The file should contain a scanned signature.
2. CV containing, among others, all relevant academic information.
3. List of publications and conference presentations.
4. Copy of higher education transcript.
5. Copy of possessed higher education diplomas.
6. Graphic visualizations (eg Corel Draw, Blender, etc.) created by the candidate.
7. If possible: recommendation letter from past employers / supervisors.
8. If possible: contact details of previous employers / supervisors.
9. MSc in physics or PhD in physics is required.

Upon successful application the candidate will have to provide originals of the above listed documents.

The entire procedure will be concluded before 05.11.2021. The candidate might be asked for an interview with the commission appointed by the Dean of the Faculty. An email will be sent to such candidates.
Information on personal data processing

Controller

Controller of your personal data processed in connection with the recruitment process is the University of Warsaw, ul. Krakowskie Przedmieście 26/28, 00-927 Warszawa, as the Employer.

Contact with the controller:
- by traditional mail at: University of Warsaw, ul. Krakowskie Przedmieście 26/28, 00-927 Warszawa (name the organizational unit to which your letter is addressed);
- by phone: 22 55 20 355.

Data Protection Officer (DPO)

Controller has designated Data Protection Officer whom you may contact via email at iod@adm.uw.edu.pl. You may contact the DPO in all matters relating to your personal data processing by the University of Warsaw and the exercise of rights in relation to the processing of personal data.

The DPO, however, does not proceed other matters, like handling recruitment procedures, collecting recruitment documents, providing information on current recruitment process.

Purpose and legal grounds of data processing

Personal data of candidates for employment shall be processed for recruitment purposes only.

Your personal data shall be processed in the scope as indicated by employment law¹ (given name (names) and family name, date of birth, contact information as provided, education, professional qualifications, previous employment) for the purposes of this recruitment process², whereas other data³ shall be processed based on your consent which may take the following wording:

I agree to the processing of personal data provided in .... (e.g. CV, cover letter, and other submitted documents) by the University of Warsaw for realising my recruitment process.

¹ Art. 22¹ of the law of June 26, 1974 Labour Code (i.e. Journal of Laws 2019 item 1040 with subsequent changes);
² Art. 6 section 1 letter b of the Regulation of the European Parliament and the Council (EU) 2016/679 of April 27, 2016 on protection of individual persons with regard to the personal data processing and on the free flow of such data, and also repealing Directive 95/46/EC (general regulation on data protection) (Official Journal EU L 119 of 04.05.2016, page 1, with subsequent changes) (hereinafter as the GDPR);
³ Art. 6 section 1 letter a of the GDPR;
If your documents include data as mentioned in Art. 9 section 1 of the GDPR (special categories of personal data), processing shall be possible upon your consent to processing such data which may take the following wording:

I agree to the processing of special categories of personal data, as mentioned in Art. 9 section 1 of the GDPR, provided in ................. (e.g. CV, cover letter, and other submitted documents) by the University of Warsaw for realising my recruitment process.

The University of Warsaw shall be also processing your personal data in future recruitment processes upon your consent which may take the following wording:

I consent to processing of my personal data for the purposes of any future recruitment processes at the University of Warsaw for the period of the next nine months.

You may revoke all such consents at any time by, for example, sending an email at ..............................................

Be advised that the revocation of your consent does not affect legal compliance of processing which had been completed upon consent before its revocation.6

Data retention period

Your personal data collected in this recruitment process shall be stored over the period of three months from the date the recruitment process is completed.

In case you agree to process your data in future recruitments, your data shall be used over the period of nine months.

Data recipients

Officers authorized by the Controller shall have access to your personal data, the processing of which is in the scope of their duties.

Recipients of personal data may be other subjects obligated by the Controller to provide specific services involving data processing, like

........................................................................................................
(name all recipients of data)

Data transfer outside the European Economic Area (EEA)

Your personal data shall be disclosed to subjects authorized by law. Signing-in is through Google Forms. Your personal data may be also processed by our provider of G-Suit for education by Google Company in their data processing centres. Your data shall be protected under the standards of the Privacy Shield, accepted by the European Commission. This shall guarantee an adequate level of data security.

4 Art. 9 section 2 letter a GDPR;
5 Art. 6 section 1 letter a GDPR;
6 Art. 7 section 3 GDPR;
7 https://www.google.com/about/datacenters/inside/locations/index.html
8 https://www.privacyshield.gov
Rights of the data subject

Under the GDPR data subjects have the following rights:

- to access data and to receive copies of the actual data;
- to correct (rectify) your personal data;
- to restrict processing of personal data;
- to erase personal data, subject to provisions of Art. 17 section 3 of the GDPR;
- to file a claim with the President of the Personal Data Protection Office, if you believe data processing violates law.

Information on the requirement to provide data

Providing your personal data in the scope resulting from law is necessary to participate in the recruitment process. Providing other personal data is voluntary.

.......................................     ...................................
place and date                     applicant’s signature