

Wszystkie dokumenty powinny zawierać podpis kandydata lub jego skan.

Project title:

2D-Material-Inspired Photonic Architectures

Position:

PhD student

Number of positions: 1

City: Toruń

Website: <https://www.fizyka.umk.pl>

Requirements:

- Msc diploma in Physics or a related field
- basic knowledge of quantum mechanics and electrodynamics
- basic skills in programming, preferably in Python
- fluency in English

Description of duties:

Extension of GRANAD code in Python: adjusting the code, originally dedicated to describe electron dynamics in 2D material nanostructures, to account for light dynamics in analogous photonic architectures. Preparation of code documentation. Modelling of selected phenomena in photonic nanostructures, e.g., analysis of edge states in zigzag-edged geometries, modelling of transfer of physical properties between impinging radiation and light in nanostructures, modelling of impact of optical nonlinearities on light propagation in selected structures. Analysis of results and their presentation in the form of scientific articles and conference contributions.

Tasks:

- familiarising with the code structure and modifications planned to adjust the code to account for photonic architectures
- code extension
- modelling selected optical phenomena, promotion of results

Competition type: Sonata BIS

Field of science: ST

Application deadline: 30.03.2026 23:59

Application form: e-mail karolina@fizyka.umk.pl

Employment conditions:

A scholarship in the amount of PLN 5000 per month (gross gross) for a period of up to 48 months.

Additional information:

The scholarship is awarded in accordance with the rules contained in the Regulations for granting research scholarships of the National Science Center introduced by the resolution of the Council of the National Science Center No. 25/2019 of 14 March 2019.

Required documents (send to karolina@fizyka.umk.pl /with annotation "MAPS call"):

- Cover letter
- CV
- Copies of obtained diplomas and certificates (if any)
- Copy or scan of candidate's publications (if any)
- Information about scientific awards, scholarships and other distinctions (if any)
- Description of current research activity (if applicable)
- Consent to the processing of personal data (https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.umk.pl%2Fuczelnia%2Fiod%2FKonkurs_EN.docx&wdOrigin=BROWSELINK).
- Certificate of student status (if applicable)

Applicants will be evaluated by a selection committee appointed by the Dean of the Faculty of Physics, Astronomy and Informatics. The committee will recommend the awarding (or rejection) of the scholarship no later than 06 April 2026. Candidates will be notified of the outcome of the competition by e-mail.