Politechnika Łódzka

Published on *Politechnika Łódzka - Rekrutacja* (https://rekrutacja.p.lodz.pl)

Organizational unit running the field of study:
Faculty of Chemistry
Cycle of study:
Second-cycle
Mode of study:
Full-time (degree programme)
Language of instruction:
Polish
Degree awarded:
Master of Science
Duration of study:

1,5 years

Description of the field of study:

The primary objective of education in the field of study nanotechnology is to prepare the graduate to meet professional challenges in the area that bring together chemistry, chemical technology and materials engineering both in the national and international job market. Second-cycle degree in this field are aimed at training specialists in this field who have solid knowledge of disciplines that lie at the base of nanoscience and who also have engineering skills critical for applying this knowledge in practice, which shall enable them to work in national and international academic as well as industrial research centers or continue studies in a third-cycle degree programme. In the course of the studies, students advance their skills of practical applications of their knowledge of design, manufacturing, modification and analysis of nanomaterials. Their awareness of the threats that using nanoparticles and nanomaterials brings is raised as is their awareness of the impact on the natural environment and live organisms. Students advance their knowledge of mathematics, physics, chemistry, biochemistry and broadly defined materials science useful in problem-solving of complex tasks in nanoscience and interactions in the natural world. They acquire knowledge of, among others, contemporary development trends in nanoscience and nanotechnology and chemistry, biochemistry and materials engineering. Students systematically use and firmly establish the principle of precise, based on empirical data, interpretation of natural phenomena and processes in their research work and in their practical activities. They learn about and learn to use principal techniques, devices and tools used in problem-solving of complex engineering tasks concerning sythesis, modification and analysis of nanomaterials. They are able to evaluate, determine the limitations of and use analytical and experimental methods to solve complex engineering problems and simple research problems. They know OSH principles to the extent necessary for independent work in a research or measurement positions; they demonstrate responsibility for evaluation of threats that particular research techniques may entail and they are able

to ensure safe work conditions. They learn to plan and conduct experiments, interpret their results and draw conclusions. They will be able to evaluate fitness for purpose and possibility of applying new nanoscience and nanotechnology solutions, suggest improvements to the existing ones and perform preliminary economic analysis of pending engineering tasks.

Graduate profile:

The scope of education in nanotechnology and nanoscience that students of the second-cycle degree are provided with is extremely broad and concerns, among others, disciplines such as electronics, optics, mechanics, medicine and pharmacy, environment protection, automotive and aircraft industry, cosmetics manufacture or even manufacture of household appliances. Consequently, nanotechnology and nanoscience have, in many cases, an interdisciplinary nature and require specific skills and knowledge in the area of chemical sciences, physics, medicine or biology, materials engineering, electronics and mechanics.

Graduates with a degree in this field are able to become involved in the design of nanomaterials that have predefined characteristics suitable for use in many different disciplines e.g. medicine, and also in the design, testing and development of a method of nanomaterials synthesis. They are able to perform nanomaterials tests unassisted.

Graduates will be well-prepared to work for international companies and research institutes owing to, among other things, the experience they gain while completing various projects.

Date of enrolment:
29.01.- 26.02.2024, Ist recruitment for foreigners: 6.12.2023 - 4.01.2024
Admission requirements:

- Admissions calendar [1]
- Required documents [2]
- Fees [3]

Links
[1] https://rekrutacja.p.lodz.pl/en/deadlines [2] https://rekrutacja.p.lodz.pl/en/documents [3] https://rekrutacja.p.lodz.pl/en/tuition-fees