

## DTU Nanolab PhD School

The purpose of DTU Nanolab's PhD school is to educate scientists in the field of micro/nano fabrication and characterization. Being awarded a PhD degree from DTU Nanolab's PhD school requires the completion of an approved program of advanced studies and the proven ability to communicate scientifically and conduct original research of high quality.

DTU Nanolab's PhD school graduates have an overview over a broad variety of state-of-the-art nanoscale characterization and top-down nano fabrication technologies. The graduates possess hands-on experience as well as theoretical understanding within cleanroom processing and characterization methods with special emphasis on electron microscopy.

DTU Nanolab's PhD graduates are self-driven and are involved in formulation of hypotheses underpinning their research project as well as identifying and developing the appropriate methods that can be tested and lead to verification or falsification of their hypothesis. The candidates are required to establish a project plan including, a research plan, a specific study program, their teaching and communication responsibilities and a data management plan. In addition the study plan should contain plans for a stay abroad where the PhD student collaborates with another research organization to advance the project.

All these aspects are planned and conducted with help and supervision but driven by the PhD student.

All research at DTU Nanolab is carried out in full compliance with the principles for good scientific practice. Graduates from DTU Nanolab's PhD school have shown that they carry out research according to the Danish Code of Conduct for research integrity, which overarching principles are honesty, transparency and accountability.

### Specific Requirements

Beside the general rules and requirements for a PhD at DTU, the DTU Nanolab PhD school has some additional requirements.

#### Courses

The following courses are mandatory for PhD students at the DTU Nanolab PhD school:

- **56868** (previously 10868) Methods in micro- and nanofabrication (5 ECTS points)
- **56867** (previously 10867) Methods in Electron microscopy and spectroscopy (5 ECTS points)

The following courses are mandatory for PhD students at the DTU:

- **Course 12950 or 12951 or 12952** Sustainability evaluation and communication (2,5 ECTS points)
- **Course:** [Supervision and facilitation of learning \(dtu.dk\)](https://www.dtu.dk/en/education/graduate-education/doctoral-education/doctoral-education-at-dtu-nanolab)

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### *Dissemination*

The PhD student is required to maintain a subpage on the DTU Nanolab LabAdviser homepage dedicated for the students PhD research. The subpage must contain:

- Project description
- Links to accepted papers
- Equipment, fabrication and characterization development work relevant to each paper with links to other parts of LabAdviser, describing equipment, fabrication and characterization development work that has been conducted while obtaining (the published) results.

### *Teaching Assistance*

The PhD student is expected to participate in courses at DTU Nanolab as teaching assistant. Training of new users of the DTU Nanolab infrastructure is also expected to part of the PhD student's tasks.

The workload and tasks are planned in the PhD study plan and documented and detailed in the respective half year reports. Overall, a workload of 300h for department work is expected.

### *At the end of the PhD project*

The duration of a PhD project at DTU is 3 years to the day. The duration can in rare cases be extended due to special circumstances (illness, force majeure, paternity/maternity leave). The extension is normally without salary.

At the time of handing in the thesis, the aim of the PhD schools is that the PhD student has at least, one first author manuscript accepted in a peer-reviewed scientific journal as well as at least one co-authored manuscript accepted.

The PhD students should have presented his or her results at least once orally at an international scientific conference.

It is expected that the PhD student has taken all vacation days before handing in the thesis. Vacation and holidays are part of the labor regulations in Denmark and should be taken accordingly (reflected in the study plan).

### *Meetings with Head of DTU Nanolab PhD school*

At the beginning of the PhD all students meet with the Head of PhD school and the director of DTU Nanolab for a short welcome and introduction meeting.

A meeting around month 12 and month 27 will be scheduled between the PhD student and the Head of the DTU Nanolab PhD School (Prof. Jakob B. Wagner).

The meetings are without supervisor(s).

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## Important links

Code of conduct <https://ufm.dk/publikationer/2014/the-danish-code-of-conduct-for-research-integrity>

Data management plan <https://dmponline.deic.dk/>

PhD at DTU <https://www.dtu.dk/english/education/phd/rules/phdguide>