

ANNOUNCEMENT: 12 PHD-POSITIONS WITHIN THE ENABLING TECHNOLOGIES AT NTNU

The Rector of NTNU has allocated four PhD-positions to each of the following areas:

- Biotechnology
- Nanotechnology, nanoscience and functional materials
- Digital technologies (information and communication technology)

The positions will be allocated to highly innovative projects that have clear potential to contribute to NTNU's ambition of substantially increasing the number of major national and international research grants. *This year, we would like to particularly encourage young researchers to apply for the PhD-positions.*

DEADLINE FOR PROPOSALS: 30TH OF JANUARY 2022

Scientific staff at NTNU are invited to submit research proposals by completing this [online application form](#).

THE PROPOSALS WILL BE EVALUATED ACCORDING TO THE FOLLOWING CRITERIA:

- Proposals should outline internationally competitive "ground-breaking research" and should specifically identify new opportunities and research directions of transformative character.
- Proposals that are part of a plan for building a successful application for EIC Pathfinder or ERC starting, -consolidator, -advanced or -synergy grants within a three-year period will be prioritized. All proposals should clearly set out how the proposed PhD project will enable this.
- Proposals should primarily address new topics or technologies at an early stage of development but, at the same time, they should be based on documented competence.
- Projects should have the potential to yield high-level publications and should serve as the basis for a research program that is likely to attract substantial external funding besides EIC Pathfinder and ERC.
- Proposals addressing topics that require significant interaction between several scientific groups within or across enabling technologies may apply for more than one PhD-position.
- Preference is likely to be given to projects involving project leaders who do not currently hold an enabling technology PhD position.

Specific requirements:

- For proposals involving BIOTECHNOLOGY, only interdisciplinary projects that address topics in accordance with the definition of biotechnology used by Norwegian authorities will be considered, *i.e. the application of science and technology to living organisms as well as parts, products and models thereof, to alter living and non-living materials for the production of knowledge, goods and services.*
- For proposals involving NANOTECHNOLOGY, NANOSCIENCE AND FUNCTIONAL MATERIALS: At least two of the positions will be allocated to experimental projects involving work at NTNU NanoLab. The PhD students associated with these two positions will be expected to carry out duty work in the general area of process development and competence building within nano-structuring, in particular thin-film processing and lithography. They may also be required to contribute to training of Master students within the lab. There are no restrictions on the other two projects, which may be of a

theoretical or experimental nature, but the students will be expected to contribute to duty work in a related area in the NanoLab where possible. We particularly encourage applications that involve open science, advanced nanofabrication techniques, or interdisciplinary research at the health/engineering or health/natural-sciences interface.

- For proposals involving DIGITAL TECHNOLOGIES, proposals addressing fundamental issues in information and communication technology (ICT) and in the application of digital technology are particularly welcome. The proposals aligned with NTNU Digital's strategic research such as Artificial Intelligence, Cyber Security and Reliability, IoT and others will be particularly welcomed. Projects containing cross-disciplinary research cooperation will be favourably regarded, as will support from other sources, e.g. matching funding/positions from the applicants' faculty.

SUBMISSION OF PROPOSALS

Project proposals must be submitted through Machform by 30th of January 2022 using the following link: <https://www.ntnu.no/machform/view.php?id=849458>

Note: It is not possible to save in Machform, so the application must be completed and submitted in one go. We therefore recommend you use the application template below while you develop the proposal.

Questions regarding the announcement may be sent to [Liv E. Falkenberg](#) and [Trygve Brautaset](#).

APPLICATION TEMPLATE

NTNU ENABLING TECHNOLOGIES – PHD-POSITIONS

PART ONE: PROJECT INFORMATION

Project title: (max 20 words)

Relevant enabling technologies:

YOU MAY SELECT MORE THAN ONE ENABLING TECHNOLOGY AREA IF APPROPRIATE: NANO, BIOTECH, ICT

Project leader:

NAME, TITLE, E-MAIL ADDRESS, DEPARTMENT, FACULTY

Co-applicants:

NAME, TITLE, E-MAIL ADDRESS, DEPARTMENT, FACULTY; MAXIMUM OF TWO

Does the project leader have a permanent position?

YES, NO

IF THE ANSWER TO THIS QUESTION IS NO, THEN AT LEAST ONE OF THE CO-APPLICANTS POSSESSING A PERMANENT POSITION MUST BE WILLING TO TAKE FORMAL RESPONSIBILITY FOR THE SUPERVISION OF THE PHD CANDIDATE IF THE PROJECT LEADER'S EMPLOYMENT COMES TO AN END BEFORE THE PROJECT IS COMPLETED. PLEASE STATE WHO THIS WILL BE.

How many PhD positions are you applying for?

ONLY APPLICATIONS INCLUDING TWO OR MORE OF THE ENABLING TECHNOLOGIES WILL BE AWARDED MORE THAN ONE POSITION. IN YOUR PROJECT PLAN, YOU MUST EXPLAIN CLEARLY THE NEED FOR MULTIPLE STUDENTSHIPS.

Which funding scheme will you apply for?

ERC Starter, ERC Consolidator, ERC Advanced, EIC Pathfinder, RCN Young Talents, RCN FRIPRO

If the answer to this question is other, please state what this is.

PART TWO: PROJECT PLAN

Background, status of knowledge and level of excellence: (max 600 words)

- 1. Provide a brief description of the scientific context motivating the project and the relevant state-of-the-art.*
- 2. What is the main idea or hypothesis underlying your project that would potentially lead to a major conceptual and/or methodological advance?*
- 3. Make a qualified assessment of the originality of your idea or hypothesis in an international context.*
- 4. Include key references.*

What are the specific objectives of the project? (max 150 words)

Explain why the fulfilment of these objectives will provide the prior needed to position you for an ERC grant, EIC Pathfinder grant or other funding: (max 150 words)

Project implementation: (max 800 words)

Provide a description of how the project will be carried out (task structures linked to objectives, task interdependencies, timelines, responsibilities, risk profile).

Figures: (max 15 MB in total)

YOU MAY ATTACH UP TO TWO FIGURES/DIAGRAMS THAT ARE RELEVANT TO YOUR PROPOSAL; PLEASE REFER TO THEM EXPLICITLY IN THE TEXT; NO OTHER ATTACHMENTS WILL BE ACCEPTED.

PART THREE: TRACK RECORD

Relevant track record: (max 300 words)

Describe the experience and track record of the applicants in the specific area of the project proposal, giving specific examples of international competitiveness. State clearly the role each applicant will play in the project with reference to track record.

Relevant publications:

List up to eight of your team's publications that are relevant to the project plus the number of citations they have received as documented on Google Scholar.

Relevance of publications: (max 150 words)

Explain how the listed references demonstrate competence in your selected project area.