

## Job vacancy advertisement template PhD candidate

The Department of Manufacturing and Civil Engineering at NTNU has a vacancy for a

# PhD candidate in Polymer Science and Engineering with a focus on Conductive polymer composites

## About the position

For a position as a PhD Candidate, the goal is a completed doctoral education up to an obtained doctoral degree.

Joining our team offers a unique opportunity to engage in cutting-edge research on pyroresistive polymer composites, with applications ranging from electric vehicle safety to medical devices. You will work in a supportive and innovative environment at the Department of Manufacturing and Civil Engineering of NTNU, collaborating closely with leading experts and international partners. This position not only promises access to state-of-the-art research facilities, including micro-CT tomography and advanced polymer processing equipment, but also includes a significant period at Imperial College, London, enhancing your global research experience. With us, you will contribute to pioneering solutions for tomorrow's challenges while advancing your academic career in a vibrant and supportive community.

Your immediate leader is the Head of the Department.

## Duties of the position

The duties of the PhD candidate will include:

- **Conducting Experimental Research:** Design and perform experiments on pyroresistive polymer composites to understand and optimize their electrical resistivity and temperature behaviours. This includes systematically investigating polymer matrices, conductive fillers, and their interactions under various conditions.
- **Numerical Simulations:** Develop and validate numerical models, including finite element (FE) models and discrete particle dynamics, to simulate the behaviour of conductive polymer composites. Utilize these models to analyse and predict the materials' responses to thermal cycles and their PTC (Positive Temperature Coefficient) effects.
- **Advanced Material Characterization:** Utilize advanced imaging techniques, such as micro-CT scanning and synchrotron radiation, for in-depth characterization of conductive polymer systems.
- **Publication and Dissemination:** Publish the research findings in well-known international journals. Present research outcomes at national and international conferences to disseminate knowledge.

The candidate is expected to contribute to a collaborative and inclusive research environment, actively participate in group meetings and departmental activities, and adhere to project timelines and milestones.

### **Required selection criteria**

- You must have a professionally relevant background in Material Science, Mechanical Engineering, Polymer Chemistry, or Applied Physics with specialization in materials science.
- Your education must correspond to a five-year Norwegian degree program, where 120 credits are obtained at master's level.
- You must have a strong academic background from your previous studies and an average grade from the master's degree program, or equivalent education, which is equal to B or better compared with NTNU's grading scale. If you do not have letter grades from previous studies, you must have an equally good academic basis. If you have a weaker grade background, you may be assessed if you can document that you are particularly suitable for a PhD education.
- Master's students can apply, but the master's degree must be obtained and documented prior to employment start.
- You must meet the requirements for admission to the faculty's doctoral program (link): <https://www.ntnu.edu/iv/doctoral-programme>

The appointment is to be made in accordance with Regulations on terms of employment for positions such as postdoctoral fellow, Phd candidate, research assistant and specialist candidate and Regulations concerning the degrees of Philosophiae Doctor (PhD) and Philosophiae Doctor (PhD) in artistic research at the Norwegian University of Science and Technology (NTNU)

### **Preferred selection criteria**

- Expertise in polymer science, composite materials.
- Experience in conductive polymer composites and their applications is preferred.
- Previous involvement in research projects related to materials science, especially those focusing on polymer composites, conductive materials, or similar fields.
- Experience in material testing is considered a plus.
- Proficiency in finite element modelling, particularly with commercial software, is highly desirable.
- Knowledge of programming and machine learning principles is desirable.
- Experience in publishing research findings in peer-reviewed journals, with a preference for publications in the field of polymer composites, materials science, or electrical properties of materials.
- Good written and oral English. Knowledge of Norwegian language is a plus.

### **Personal characteristics**

- Collaborative and team player
- Creative Problem-Solver
- Strong Communicator
- Research-driven and Committed Individual

Emphasis will be placed on personal and interpersonal qualities.

## We offer

- exciting and stimulating tasks in a strong international academic environment
- an open and [inclusive work environment](#) with dedicated colleagues
- favourable terms in the [Norwegian Public Service Pension Fund](#)
- [employee benefits](#)

## Salary and conditions

As a PhD candidate (code 1017) you are normally paid from gross NOK 491 200 per annum before tax, depending on qualifications and seniority. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

The period of employment is **3 years** years.

Appointment to a PhD position requires that you are admitted to the PhD programme in [subject area] (Link to website, if applicable) within three months of employment, and that you participate in an organized PhD programme during the employment period.

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The engagement is to be made in accordance with the regulations in force concerning [State Employees and Civil Servants](#), and the acts relating to Control of the Export of Strategic Goods, Services and Technology. Candidates who by assessment of the application and attachment are seen to conflict with the criteria in the latter law will be prohibited from recruitment to NTNU.

After the appointment you must assume that there may be changes in the area of work.

It is a prerequisite you can be present at and accessible to the institution on a daily basis.

## About the application

The application and supporting documentation to be used as the basis for the assessment must be in English.

Publications and other scientific work must follow the application. Please note that your application will be considered based solely on information submitted by the application deadline. You must therefore ensure that your application clearly demonstrates how your skills and experience fulfil the criteria specified above.

The application must include:

- CV and certificates
- Transcripts and diplomas for bachelor's and master's degrees. If you have not completed the master's degree, you must submit a confirmation that the master's thesis has been submitted or will be submitted on time.

- A copy of the master's thesis. If you recently have submitted your master's thesis, you can attach a draft of the thesis. Documentation of a completed master's degree must be presented before taking up the position.
- Name and contact information of three referees
- Publications or other relevant research work, if applicable.

If all, or parts, of your education has been taken abroad, we also ask you to attach documentation of the scope and quality of your entire education, both bachelor's and master's education, in addition to other higher education. Description of the documentation required can be found [here](#). If you already have a statement from NOKUT, please attach this as well.

We will take joint work into account. If it is difficult to identify your efforts in the joint work, you must enclose a short description of your participation.

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal and interpersonal qualities. Motivation, ambitions, and potential will also count in the assessment of the candidates.

NTNU is committed to following evaluation criteria for research quality according to [The San Francisco Declaration on Research Assessment - DORA](#).

## General information

### [Working at NTNU](#)

NTNU believes that inclusion and diversity is our strength. We want to recruit people with different competencies, educational backgrounds, life experiences and perspectives to contribute to solving our social responsibilities within education and research. We will facilitate for our employees' needs.

NTNU is working actively to increase the number of women employed in scientific positions and has a number of [resources to promote equality](#).

**The city of Gjøvik** has a population of 30 000 and is a town known for its rich music and cultural life. The beautiful nature surrounding the city is ideal for an active outdoor life! The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world.

As an employee at NTNU, you must at all times adhere to the changes that the development in the subject entails and the organizational changes that are adopted.

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you want to reserve yourself from entry on the public applicant list, this must be justified. Assessment will be made in accordance with [current legislation](#). You will be notified if the reservation is not accepted.

If you have any questions about the position, please contact [Associated professor Shifteh Mihanyar](#), telephone: +47-46823319, email: [shifteh.mihanyar@ntnu.no](mailto:shifteh.mihanyar@ntnu.no) or Professor Stergios Goutianos, telephone: +4746933240, email: [stergios.goutianos@ntnu.no](mailto:stergios.goutianos@ntnu.no). If you have any questions about the recruitment process, please contact [Kristine Rognlid Hagaseth](#), e-mail: [kristine.r.hagaseth@ntnu.no](mailto:kristine.r.hagaseth@ntnu.no)

If you think this looks interesting and in line with your qualifications, please submit your application electronically via [jobbno.no](https://jobbno.no) with your CV, diplomas and certificates attached. Applications submitted elsewhere will not be considered. Upon request, you must be able to obtain certified copies of your documentation.

**Application deadline: 15.04.2024**

**NTNU – knowledge for a better world**

The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

**Department of Manufacturing and Civil Engineering (IVB), NTNU-Gjøvik**

(Her flettes forhåndsdefinert info om instituttet inn i Jobbno)