

**Jobbnorge ID:** 298111  
**Deadline:** 5/4/2026  
**Website:** <http://www.ntnu.no>  
**Scope:** Fulltime  
**Duration:** Fixed Term

The Department of Geosciences has a vacancy for a PhD Candidate in Ore forming processes in Fen alkaline-carbonatitic system across the magmatic hydrothermal transition

## PhD Candidate at Department of Geosciences - IV-20/26

### This is NTNU

NTNU is a broad-based university with a technical-scientific profile and a focus in professional education. The university is located in three cities with headquarters in Trondheim.

At NTNU, 9,000 employees and 43,000 students work to create knowledge for a better world.

You will find more information about working at NTNU and the application process [here](#).

Video: <https://youtu.be/Xt-yHCN5QS0>

### About the position

Are you motivated to take a step towards a PhD and open up exciting career opportunities? As a PhD Candidate with us, you will work to achieve your doctoral degree, and at the same time gain valuable experience that qualifies you for a further career in higher education and research, in and outside academia.

Your immediate leader will be the Head of Department.

### About the project

The Fen alkaline and carbonatite complex and associated REE and Nb mineralizations, represents a unique geological and economic resource. Ongoing geological studies aim to elucidate the formation processes and distribution of these valuable metals, contributing to a greater understanding of the complex interplay between magmatic-hydrothermal activity and mineral resource formation. As demand for REEs and niobium continues to rise, the Fen Complex stands as a vital area for both scientific research and economic exploration. The general evolution of the complex is known to a certain extent with a general evolution from calcite-carbonatite through dolomite carbonatite to Fe-dolomite carbonatite, however the distribution of rocks is complex due to low viscosity along with high volatile content of the melt, resulting in brecciation and remobilization of economic elements. The alkali enigma is a common problem in most carbonatite systems. Though carbonatite plutons are surrounded by potassic and sodic alteration (fenitization zones), they rarely contain Na, and K bearing carbonate phases. This is in stark contrast to carbonatite volcanoes in the East African rift, where eruptive carbonatite lavas are rich in K and Na carbonates. The project will include the following approaches:

1. Study of mineral, melt and fluid inclusions related to textures and/or geochemical settings. Study will be done using in-house state of the art Raman equipment (Invia Qontor), fluid inclusion micro thermometry and optical and electron microscopy.
2. Study the relation between REE and high field strength elements (such as Nb and Ta) and the effect of mineralogy on the whole-rock composition throughout the Fen complex using SEM-based automated mineralogy and electron microprobe analysis.
3. Trace element composition of minerals, including apatite, carbonates and oxides.

The candidate will be encouraged to further develop the project through dialogue with the research team from NTNU (Norwegian University of Technology and Science) during the start of the project.

### Duties of the position

- Complete the doctoral education until obtaining a doctorate
- Carry out research of good quality within the framework described above
- Academic publications and popular science dissemination
- Participate in the research groups [Geology and Geophysics](#) and [Mineral Production](#)
- Participate in international activities such as conferences and/or research stays at foreign educational institutions
- Teaching. The student will be responsible for organizing, improving and participating in teaching in optical microscopy and assisting in theory exercises in mineralogy for course TGB4126 Mineralogy, corresponding to 1 year duty-work.

Be prepared for changes to your work duties after employment.

## Required selection criteria

Decide on what is to be defined as absolute qualification requirements and what is to be defined as desired qualifications (the latter are placed in the module below):

- You must have a relevant Master's degree in either mineralogy, igneous/metamorphic petrology, structural geology or ore deposit geology or equivalent. Your course of study must correspond to a five-year Norwegian course, where 120 credits have been obtained at master's level, with exceptions for 4-year integrated master programs such as in some North American Universities and Great Britain. Master students can apply, but the master's degree must be obtained and documented before starting the position and no later than August 2026
- You must have a strong academic background from your previous studies and have an average grade from your Master's degree study, or equivalent education, which is equal to B or better compared to [NTNU's grading scale](#). If you do not have letter grades from previous studies, you must have an equally good academic foundation. If you have a weaker grade background, you may be considered if you can document that you are particularly suitable for a PhD education.
- You must meet the requirements for admission to the faculty's Doctoral Program [PhD in Engineering](#)
- Excellent oral and written English skills as you will be teaching undergrad students in mineralogy and optical mineralogy
- Documented training in optical mineralogy in transmitted and reflected light microscopy

PLEASE NOTE: For detailed information about what the application must contain, see paragraph "About the application".

The appointment is to be made in accordance with [NTNUs guidelines for recruitment positions](#) and [Regulations for the degrees philosophiae doctor \(ph.d.\) and philosophiae doctor \(ph.d.\) in artistic development work at the Norwegian University of Science and Technology \(NTNU\)](#) for general criteria for the position.

## Preferred selection criteria

- It is advantageous if you have previous teaching experience
- Experience with SEM based automated mineralogy
- Collecting quantitative/semi quantitative data on the electron microscope. Advantageous if you have been operating electron microscopy data, including mineral composition data and quantified those yourself
- Interest in REE-HFSE deposits in carbonatite systems or interest in the petrology of carbonatite systems
- Interest and/or experience with fluid-rock melt interactions and their geochemical signatures

## Personal characteristics

To complete a doctoral degree (PhD), it is important that you are able to:

- Work independently
- Work in a structured way, set goals and make plans to achieve them
- Present and discuss your research with other professionals
- Get involved and contribute constructively with feedback
- Work constructively under pressure or in the face of adversity
- Show curiosity and a strong motivation for the subject
- Analyze data, assess different perspectives and draw well-founded conclusions
- Be flexible and open to adjusting the plan for the project as needed

Emphasis will be placed on personal qualities.

## We offer

- An exciting job with an important [mission](#) in society
- Developing tasks in a strong and international professional environment
- Career guidance and [follow-up during the PhD period](#)
- Open and inclusive working environment with committed colleagues
- Favorable terms as a member of the [Norwegian Public Service Pension Fund \(SPK\)](#)
- Free Norwegian language training at a basic level ([A2](#)).

As a PhD Candidate at NTNU, you will have access to [employee benefits](#).

## Diversity

Diversity is a strength, and at NTNU we aim to be an employer that reflects the diversity in society and that makes use of the potential of the population's collective skills. Our vision is [Knowledge for a better world](#) and [our values are creative, critical, constructive and respectful](#). We believe that an organization that is equal, diverse and gender-balanced is essential for us to achieve our goals.

We strive to attract employees with different skills, life experiences and perspectives to contribute to even better problem solving of our societal mission in research and education.

If you think this position is relevant and interesting, we encourage you to apply, regardless of gender, functional ability and cultural background, or whether you have been out of work for a period of time.

At NTNU we want to increase the proportion of women in scientific positions. We have a number of [measures](#) to promote equality.

## Salary and conditions

In the position of PhD Candidate, code 1017, your gross salary will normally be NOK 550 800,-per annum depending on qualifications and seniority. A 2% statutory contribution to the State Pension Fund is deducted from the salary.

The employment period is 3 years for the doctoral work in addition to 12 months of career promotion work as teaching. (A minimum of three work years of the total term period must be dedicated to doctoral work.)

For employment as a PhD Candidate, it is a prerequisite that you gain admission to the PhD programme in [Engineering](#) within three months of your employment contract start date, and that you participate in an organized doctoral programme through out the period of employment.

As an employee at NTNU, it is important that you keep yourself up to date with academic and organizational changes and adapt to them.

For the necessary professional and social interaction, it is a prerequisite that you are physically present and available to the institution on a daily basis.

The appointment is carried out in accordance with the principles of the [State Employees Act](#), and [Export control](#) (legislation that regulates the export of knowledge, technology and services). Candidates who, after assessment of the application and attachments, are considered to be in conflict with the criteria in the latter act, will not be able to be employed.

Please note that the candidate holding the announced position is expected to work with critical infrastructure and areas affected by control of the export of strategic goods, services and technology. Candidates with the potential of not fulfilling requirement for security clearance, access clearance and authorization as described in the Act Relating to National Security, The Export Control Act and Act on the Implementation of International Sanctions (Sanctions Act) cannot be considered for the position (e.g., candidates from Russia, Iran, North Korea, China, among other countries).

## About the application

The attachments (including a description of your scientific work) must accompany the application as these documents form the basis of the application assessment. The documents must be in English.

Please note: the application will only be assessed on the basis of the information we have received by the application deadline. Therefore, make sure that your application clearly shows how your skills and experience meet the criteria described above. The application and all attachments must be sent electronically via [Jobbnorge.no](#). If you are invited to an interview, you must bring certified copies of certificates and diplomas upon request.

The application must include:

- Transcripts and diplomas for Bachelor's and Master's degrees
- CV
- Copy of Master's thesis. If you have recently 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.
- Project outline containing proposals for an overall description of research questions, theoretical perspectives, methodological design for the project and progress plan (maximum 1500 words/4 pages)
- Short letter of motivation (400 words/1 page)
- Possibly publications etc. other relevant research work
- Possibly certificates
- Names and contact information of three relevant referees

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. If your institution uses "diploma supplement" (normal for most European institutions), you must attach this. A description of the documentation required can also be found [here](#). If you already have a statement from [Norwegian Directorate for Higher Education and Skills \(HK-dir\)](#), please attach this as well.

Joint work will be considered. If it is difficult to identify your contribution to joint work, you must attach a brief description of your participation.

When assessing the best qualified, we emphasize necessary qualifications such as education, experience and personal suitability. Motivation for the position, ambitions, and potential for research will also count when assessing the candidates.

NTNU recognizes a wide range of academic contributions and has committed itself to [The San Francisco Declaration on Research Assessment](#) and [CoARA](#) (responsible assessment of research and recognition of a greater breadth of academic contributions in accordance with NTNU's social mission).

## General information

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you wish to be exempt 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 exemption is not granted.

If you think this position looks interesting and in line with your qualifications, you are welcome to apply.

If you have any questions about the position, please contact Associate Professor Bjørn Eske Sørensen, telephone +47 47 28 44 51, email [bjorn.sorensen@ntnu.no](mailto:bjorn.sorensen@ntnu.no).

If you have any questions about the recruitment process, please contact Senior Adviser HR Eli Meistad, e-mail: [eli.meistad@ntnu.no](mailto:eli.meistad@ntnu.no).

**Application deadline: 04.05.2026**

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For practical information about [working at NTNU](#), please visit [this webpage](#).

[The city of Trondheim](#) is a modern European city with a rich cultural scene. [Trondheim is the tech capital of Norway](#) with a population of

200,000. The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world. Professional subsidized day-care for children is easily available. Furthermore, Trondheim offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life and has low crime rates and clean air quality.

## **NTNU - knowledge for a better world**

### **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 Geosciences**

We conduct teaching and research related to management of Earth's geological resources. Norway's rich resources of wind, water, oil, gas and minerals have been and are essential to the country's prosperity, and will continue to be in the future. The Department plays a key role in the development of technology and the education of graduates who enable value creation based on our natural resources. [The Department of Geosciences](#) is one of eight departments in the [Faculty of Engineering](#).

### **Additional information**

#### **Contact person:**

Bjørn Eske Sørensen, Førsteamanuensis

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#### **Place of service:**

S.P. Andersens veg 15A 7491 Trondheim (Trondheim Municipality)