

Work description - Professor in radioecology/environmental radioactivity and Director of CERAD CoE, Norwegian University of Life Sciences (NMBU)

The vacant position: At the Section of Environmental Chemistry, Faculty of Environmental Sciences and Natural Resource Management (MINA) at the Norwegian University of Life Sciences (NMBU) a full university professor permanent position within radioecology/environmental radioactivity is vacant. The position also includes the serving as a Director of the CERAD Centre of Excellence, at least until 2022.

Radioecology: A key nuclear science area focusing on the links between nuclear sources and release conditions (source term) via ecosystem transfer, biological uptake and effects to impact and risk assessments and associated uncertainties, with the aim to protect human and the environment from negative effects from ionizing radiation. NMBU is the host for the only MSc in Radioecology in Europe, and education of young scientists is an integral part of CERAD CoE. The MSc (2 yr) follows the Bologna model and includes course modules with lectures, laboratory exercises, group work, real-life case studies and thematic thesis with interdisciplinary approach.

The Norwegian University of Life Sciences (NMBU): is situated about 30 km south of Oslo. In addition to NMBU, several research institutes are also situated at Campus Ås. NMBU, the former Agricultural University of Norway, has about 1,700 employees and 5,200 bachelor, MSc and PhD students. Thus, NMBU represents a hub of expertise within life sciences, environmental sciences and in the arena of sustainable development. NMBU's interdisciplinary research and study programs generate innovations in food, health, environmental protection, climate and sustainable use of natural resources. NMBU comprises of 7 faculties, including the Faculty of Environmental Sciences and Natural Resource Management (MINA) where the vacant professor position is located. For more information: <https://www.nmbu.no>

The Faculty of Environmental Sciences and Natural Resource Management (MINA): is the university's competence centre on nature and the environment, sustainable use of natural resources, biological and geological processes. MINA has about 180 employees and undertakes teaching, research and dissemination within the fields of geology, soil science, radioecology, analytical, environmental and radiochemistry, forestry, biology, ecology, natural resource management, renewable energy, nature based tourism. The faculty has about 600 students, and about 90 PhD-students. MINA educates professionals who work in all places in society where environmental issues are in focus. Our graduates handle a wide variety of complex issues in public management, at universities, research institutions, NGOs and in the private industry. The faculty consists of 5 sections, where the CERAD CoE as well as the Isotope Laboratory are integrated in the Environmental chemistry section. For more information: <https://www.nmbu.no/fakultet/mina>

Environmental chemistry section: The Section includes the Isotope Laboratory, established in 1952, and the CERAD Centre of Excellence for Environmental Radioactivity established in 2013. The section is responsible for research and education (MSc, PhD), offering MSc within inorganic analytical chemistry, environmental chemistry, radiochemistry, as well as radioecology, offering the only MSc in radioecology in Europe. The Isotope Laboratory has actively participated in international research such as EC projects since early 1990ies. The Isotope Laboratory and CERAD are very well equipped with respect to radio- and analytical chemistry, gamma exposure

facility, temperature controlled aquatic isotope lab etc., and have access to advanced platforms via close collaboration with international partners. The Isotope Laboratory serves as the local radiation protection authority at Campus Ås, and serves as advisor to the national nuclear emergency preparedness committee.

CERAD Centre of Excellence for Environmental Radioactivity: CERAD is the only Center of Excellence at NMBU focusing on basic research and funded by the Research Council of Norway (2013 – 2022). CERAD CoE was established in 2013 at NMBU in collaboration with the Norwegian Radiation Protection Authority, the Meteorological Institute, the National Institute of Public Health and the Norwegian Institute of Water Research. Thus, CERAD has initiated long term basic research to improve the ability to accurately assess the radiological impact and risks from environmental radioactivity, also combined with other stressors. By focusing on key factors contributing to the uncertainties, CERAD represents a state-of-the-art research organisation for the advancement of tools and methods needed for better management of those risks. The scope includes man-made and naturally occurring radionuclides that were released in the past, those presently released, and those that potentially can be released in the future from the nuclear fuel cycle and from non-nuclear industries. Future research activities are highlighted in the Strategic Research Agenda (2017-2021).

According to the international Mid-term Evaluation Committee established by the Research Council of Norway (RCN): “CERAD is a global Centre of Excellence and a flagship for Norwegian science with an agenda that is also highly relevant for society.” The summary also states: “The scientific results are excellent in terms of publication quantity and very good for publication quality”, that “CERAD is unique, both in the research field and support of policy development in Norway and internationally in the field of risks from radioactivity,” and “Network building both nationally and internationally, also with practitioners and politicians, has been outstanding“. In 2017, CERAD included about 60 part-time scientists. Totally, 24 PhDs and PostDocs have so far been associated with CERAD. More information about CERAD: www.nmbu.no/cerad

- ***The position:*** The full professor position acting as Director of CERAD is directed towards natural science state-of-the-art research within radioecology/environmental radioactivity and associated nuclear fields such as radiation protection and emergency preparedness. It is expected that the professor will actively take part in ongoing research projects and initiate new projects funded nationally or internationally, teach in courses as well and act as supervisor of MSc and PhD students. At least until 2022, the professor position is focused on the role as director of CERAD, leading a multidisciplinary and multi-institutional research organization, focusing on basic research where leadership experience and administrative skills are needed. The main role of the director of CERAD is leading the work to fulfil the Centre objectives and research goals, as well as planning for the future, in close collaboration with the Scientific Advisory Committee and the Relevance Advisory Committee. Thus, an important part of the work will be to develop a strategy for the prolongation of the CERAD Consortium after 2022.

Using a holistic scientific approach, the CERAD research focuses on different source term and release scenarios, ecosystem transfer of radionuclides, biological uptake and effects in organisms exposed to radiation combined with other stressors such as metals and UV radiation under varying temperature/ climate conditions, to assess the environmental impact and risks and the associated overall uncertainties. The strategic research agenda (SRA) developed in 2013 has been revised bi-annually, and it is believed that the revised SRA covers new challenges to be focused during 2017-2021. As the present research effort of CERAD has made significant contributions to the development of radioecology internationally, it is believed that the revised CERAD research focus for the next period will play a major role when priorities are set on the international arena in the years to come. Thus, the combined position, professor in environmental radioactivity as well as Director of CERAD, calls for a highly competent and internationally well-merited scientists with well documented leadership experience and administrative skills.

The main tasks of the professor in radioecology/environmental radioactivity are:

- To further develop the forefront of the natural science research fields in radioecology/ environmental radioactivity at NMBU, within CERAD CoE, nationally and internationally
- Act as Director of CERAD CoE until 2022, and possibly beyond.
- Stimulate publication and project acquisition, and interact with society and media
- Contribute significantly to the development of relevant education and training programmes at NMBU, relevant also for international students
- Contribute significantly to the national nuclear emergency preparedness, being a key advisor to the national committee.
- Participate actively in relevant scientific committees and organizations nationally as well as internationally
- Develop a strategy for the prolongation of the CERAD Consortium after 2022.

Required academic qualifications

- PhD/Dr. Scient./Dr. Phil. degree within radiochemistry, radioecology, nuclear chemistry, biophysics or nuclear physics
- Excellent publication and project acquisition record within radioecology/environmental radioactivity
- National and international network – establishment and participation
- Organization of international conferences/workshops

The applicant should also document research experience associated with nuclear events, ecosystem transfer, impact and risk assessments associated with man-made and Natural Occurring Radioactive Materials (NORM) situations, as well as emergency preparedness associated with nuclear events.

Besides the above mentioned academic qualifications, teaching experience will also be considered. Applicants without formal training in pedagogics commits to, within two years, to undertake NMBUs course in university teaching.

Required personal skills

- Enthusiasm and creativity in research and education
- Leadership experience and administrative skills from a relevant scientific organization of international standard, and also from conducting field expeditions
- Ability to work individually and in teams
- Ability to work in a result-oriented environment
- Flexibility with respect to work tasks
- Ability to create a positive working environment
- Excellent capabilities in English, both orally and in writing

NMBU offers:

- A constructive and research oriented academic institution with focus on research competence, professional development and dissemination
- CERAD CoE as a creative and proactive interdisciplinary and inclusive research environment that provides exciting research- and development opportunities
- Daily contact with inspiring students, young scientists, and skilled colleagues from Norway and abroad
- Possibility to visit relevant institutions
- Various welfare schemes.
- Beautiful surroundings just outside Oslo
- Kindergarten for children of employees