

Position as researcher at Department of Molecular Sciences

Department of Molecular Sciences

Replace this paragraph with a brief description of your department and unit. You can find previous descriptions at <https://internt.slu.se/stod-service/admin-stod/hr/anstallningar/annonsering-och-rekrytering/institutionsbeskrivningar/> to use as a starting point. Copy the address into a web browser.

Duties:

SLU has as one of its strategic goals to develop circular bio-based economics and efficient use of renewable raw materials. The Department of Molecular Sciences at SLU, where the employment is located, currently consists of approximately 110 employees and together with two other Departments forms an inspiring research environment at BioCentrum in Uppsala with expertise in plant biology, mycology, plant pathology, microbiology, food science, computational genetics, chemistry and biotechnology. It provides a high quality infrastructure including consisting of plant cultivation facilities, advanced microscopy and molecular biology, X-ray and NMR. The Department provides the scientific community, trustee and the public with knowledge about chemical compounds and biological processes, as well as their importance to society and its development. The department conducts research, teaching and environmental monitoring in the field of inorganic, physical and organic chemistry, biochemistry, natural product chemistry, food science and microbiology. Visit us at <https://www.slu.se/institutions/molekylara-vetenskaper/>

SLU is looking for a highly motivated researcher for a biomaterial and food development focusing on how microstructures affect physical properties. Development towards a sustainable society requires new methods of producing materials and food. The position is located at the Department of Molecular Sciences. We generate and convey important information about the composition and properties of food and biomaterials. The department is involved in teaching at Bachelor's as well as Master's levels. The courses range from food science and food technology to basic chemistry.

Research and education focuses on the composition of biomaterials and food and follows the product chain through processing and treatment of raw materials. The composition, quality and functionality of the product in relation to primary production and processing is of interest for an individual consumer. The microstructure is influenced by the physical, chemical and processing conditions. In this work, the impact of the microstructure on quality characteristics such as texture, barrier and release properties, etc. is an important part. An assignment is extraction of proteins and polysaccharides, such as arabinoxylan, in order to design new biomaterials. Another task is to design food or material of protein-cellulose composites, as well as to study how enzymes or microorganisms break down structures. The use of plant-based biorefinery processes to valorize molecular components into sustainable products for food or material sector, is another assignment within the scope of the position. The applicant is expected to apply for research funding and develop his/her own externally funded research over time. The teaching duties will include lectures as well as other forms of teaching at courses mainly within food science, but other subjects are also possible depending on the applicant's competence profile.

Qualifications:

The applicant should have a solid background in microstructure characterization of materials or foods, such as at ultrafine structure level using atomic force microscope (AFM), scanning electron microscope (SEM), fourier transform infrared spectroscopy (FTIR), size exclusion

chromatography (SEC) and high-performance anion exchange chromatography (HPAC-PAD). In addition, knowledge of mechanical and / or physical characterization by TGA, DSC, Instron, XRD is meritorious. In addition, knowledge of biobased material technologies is desirable (i.e, extrusion, injection, hot-press, 3D printing), as well as on the extraction and valorization of plant-based compounds (hemicellulose, proteins, pectins, cellulose, lignin, nanocellulose...)

Doctoral degree in Physical Chemistry, Colloidal Chemistry, Soft Materials, Biophysics, Food Science, or related field is the requirement. Proven skills in both oral and written scientific English are required. Scientific publications and granted applications are meritorious. Experiences of tutoring students are a merit. The candidate is expected to be able to teach and supervise student projects in microstructure and properties. A strong track record in scientific publications, as well as success in research grant applications, will also be considered strong merits for this position. You are expected to hold the academic degree of Associate Professor (Docent) or show the ability to apply for this degree within the first few years of appointment. The applicant need to have a positive attitude to teaching and documented experience in teaching (in topics as food technology, food chemistry and food physics, biopolymers, degradation, sustainability and LCA) and/or course development is an advantage.

Place of work:

Uppsala

Form of employment:

Permanent employment. SLU uses probationary employment.

Extent:

100%

Starting date:

As soon as possible, during the autumn term 2019

Application:

We welcome your application no later than 2019-05-24, use the button below.

Academic union representatives:

<https://internt.slu.se/en/my-employment/employee-associations/kontaktpersoner-vid-rekrytering/>

The Swedish University of Agricultural Sciences (SLU) develops the understanding and sustainable use and management of biological natural resources. The university ranks well internationally within its subject areas. SLU is a research-intensive university that also offers unique degree programmes in for example rural development and natural resource management, environmental economics, animal science and landscape architecture. SLU has just over 3,000 employees, 5,000 students and a turnover of SEK 3 billion. The university has invested heavily in a modern, attractive environment on its campuses in Alnarp, Umeå and Uppsala. www.slu.se SLU is an equal opportunity employer.

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