# Postdoc Position for development of RNA design software

Applications are invited for a fix-termed 2-year postdoc position in the field of RNA design at the Department of Molecular Biology and Genetics, Aarhus University, Denmark.
The position is part of the project RIBOTICS (RNA Origami Technology in Cell Systems) funded by an Advanced Grant from the European Research Council (ERC).

The intended starting date is 01st September 2026 or as soon as possible thereafter.

**Job description**

In the Andersen lab for Biomolecular Design (andersen-lab.dk) we are experts in designing DNA, RNA and proteins to create nanoscale devices for applications in biotechnology and medicine. The lab invented the RNA origami method [1] and have developed basic algorithms and software for RNA design. However, there is a great need to develop new software for the design of advanced RNA origami robots that can sense, compute and actuate [2].

In the recently funded RIBOTICS (RNA Origami Technology in Cell Systems) project, the lab aims to develop RNA origami robots for cell factories (yeast production strains) for improved synthesis of valuable proteins and biochemicals.
The project of this position aims to develop computational methods for design of modular RNA origami robots. The project includes the following tasks:

- Develop computer-aided design software for modular construction of switchable RNA nanostructures.
- Develop databases for RNA modules for automated building of atomistic models.
- Develop multistate sequence design algorithm for rational design of RNA switches.
- Develop database of cell type specific constraints for incorporation in RNA design algorithms.

The RIBOTICS project involves a team of 3 postdocs and 3 PhD students, who will work on design, characterization, and experimental verification of several RNA systems that can regulate gene expression, control enzyme proximity, sense product yields, and do molecular computations for feedback control. The successful candidate will work in close collaboration with the RIBOTICS team and will be part of a vibrant research environment at the Interdisciplinary Nanoscience Center, where the lab is located.

**References:**

[1] A single-stranded architecture for cotranscriptional folding of RNA nanostructures. Science (2014). https://doi.org/10.1126/science.1253920
[2] An RNA origami robot that traps and releases a fluorescent aptamer. Science Advances (2024). https://doi.org/10.1126/sciadv.adk1250

**Your qualifications:**

Required qualifications:

- Applicants must hold a PhD degree in computer science, bioinformatics or similar.
- The applicant must be proficient in programming in Python and Java script.
- Have strong cooperation and communication skills.
- Have good command of the English language, both spoken and written.
- Be independent and capable of assisting younger students in their research projects.

Desirable qualifications:

- Experience with biomolecular prediction, design, and simulation software.
- Experience with object-oriented programming and bioinformatics algorithm development.
- Experience with database construction.

**Who we are**

The Andersen lab for Biomolecular Design (andersen-lab.dk) has long-standing

**Application Deadline:**
01 June 2026

**Institute/Faculty:**
Interdisciplinary Nanoscience Center

**Faculty:**
Faculty of Natural Sciences

**Academic contact person:**
Ebbe Sloth Andersen
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**Vacant positions:**
1

**Number of months:**
24

**Hours per week:**
37

**Expected date of accession:**
01/09/2026

expertise in designing DNA, RNA and proteins to create nanoscale devices for applications in biotechnology and medicine.
The lab is located at the Interdisciplinary Nanoscience Center (www.inano.dk) which combines expertise from the disciplines including physics, chemistry, molecular biology and medicine to carry out world class interdisciplinary research in nanoscience and nanotechnology. The center gives access to a broad range of infrastructure, tools and expertise.

The lab is part of the Department of Molecular Biology and Genetics (mbg.au.dk) at Aarhus University, which is a vibrant, collaborative, and international research community that includes 142 full-time scientific staff and 85 PhD students. The department is committed to fostering an inspiring and inclusive work environment.
Aarhus University offers a wide range of services to support international researchers and their families, including relocation assistance and career counselling for accompanying partners.
English is the primary language used for internal communication and teaching, and international candidates are not required to learn Danish.

### What we offer

The department offers a dynamic, interdisciplinary research environment with many industrial, national and international collaborators. The city of Aarhus is the second largest in Denmark located on the eastern coast of the peninsula of Jutland.
Aarhus offers a rich cultural life with its many international students and cultural events. It is easily accessible from major European cities either by train or plane.
Furthermore, the workplace offers:

- a well-developed research infrastructure, laboratories and access to shared equipment including world-class cryo-EM and FACS core facilities.
- a research climate encouraging lively, open and critical discussion within and across different fields of research
- a work environment with close working relationships, networking and social activities
- a workplace characterised by professionalism, equality and a healthy work-life balance.

### Place of work and area of employment

The place of work is Gustav Wieds Vej 14, 8000, Aarhus, Denmark, and the area of employment is Aarhus University with related departments.

As of 1 August 2026, iNANO's educational and research activities will be transferred to the faculty's departments. Consequently, your employment will as of that date be with a department.

### Contact information

For further information, please contact: Professor Ebbe Sloth Andersen, +45 4117 8619, esa@inano.au.dk.

### Application procedure

Shortlisting is used. This means that after the deadline for applications – and with the assistance from the assessment committee chairman, and the appointment committee if necessary, – the head of department selects the candidates to be evaluated. All applicants will be notified whether or not their applications have been sent to an expert assessment committee for evaluation. The selected applicants will be informed about the composition of the committee, and each applicant is given the opportunity to comment on the part of the assessment that concerns him/her self.

### Letter of reference

If you want a referee to upload a letter of reference on your behalf, please state the referee's contact information when you submit your application. We strongly recommend that you make an agreement with the person in question before you enter the referee's contact information, and that you ensure that the referee has enough time to write the letter of reference before the application deadline. Unfortunately, it is not possible to ensure that letters of reference received after the application deadline will be taken into consideration.

If you wish to add a referee **after** you have submitted your application, you must send this person's details (name, job title, place of work, and email address) as well as the name of the position you have applied for to: HR.Nattech@au.dk

### Formalities and salary range

Natural Sciences refers to the Ministerial Order on the Appointment of Academic Staff at Danish Universities under the Danish Ministry of Science, Technology and

Innovation.

The application must be in English and include a curriculum vitae, degree certificate, a complete list of publications, a statement of future research plans and information about research activities, teaching portfolio and verified information on previous teaching experience (if any). Guidelines for applicants can be found here.

Appointment shall be in accordance with the collective labour agreement between the Danish Ministry of Taxation and the Danish Confederation of Professional Associations. Further information on qualification requirements and job content may be found in the Memorandum on Job Structure for Academic Staff at Danish Universities.

Salary depends on seniority as agreed between the Danish Ministry of Taxation and the Confederation of Professional Associations.

Aarhus University's ambition is to be an attractive and inspiring workplace for all and to foster a culture in which each individual has opportunities to thrive, achieve and develop. We view equality and diversity as assets, and we welcome all applicants.

Research activities will be evaluated in relation to actual research time. Thus, we encourage applicants to specify periods of leave without research activities, in order to be able to subtract these periods from the span of the scientific career during the evaluation of scientific productivity.

Aarhus University offers a broad variety of services for international researchers and accompanying families, including relocation service and career counselling to expat partners. Read more here. Please find more information about entering and working in Denmark here.

Aarhus University also offers a Junior Researcher Development Programme targeted at career development for postdocs at AU. You can read more about it here.

At the Faculty of Natural Science at Aarhus University, we strive to support our scientific staff in their career development. We focus on competency development and career clarification and want to make your opportunities transparent. On our website, you can find information on all types of scientific positions, as well as the entry criteria we use when assessing candidates. You can also read more about how we can assist you in your career planning and development.

*The application must be submitted via Aarhus University's recruitment system, which can be accessed under the job advertisement on Aarhus University's website.*

**Aarhus University**

*Aarhus University is an academically diverse and research-intensive university with a strong commitment to high-quality research and education and the development of society nationally and globally. The university offers an inspiring research and teaching environment to its 37,000 students (FTEs) and 8.700 employees and has an annual revenue of EUR 1.106 billion. Learn more at www.international.au.dk/*