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profile feature

novo nordisk®

Mads Krogsgaard Thomsen, *Novo Nordisk's executive vice president and chief scientific officer*

Novo Nordisk has an 87-year history of discovering, developing and marketing protein-based diabetes products globally. Now, the Copenhagen-based biopharmaceutical company is on the verge of making history again. The company, which has a global reach but a strong foothold in Scandinavia—is developing better, and, in some cases, orally available, protein therapies for diabetes patients to replace injectable ones. To further strengthen the capital region's excellence within diabetes and protein research, the commercial but independent Novo Nordisk Foundation is helping fund the region's academic centres. The foundation recently pledged 885 million kroner (US$160 million) for a basic research center for metabolic diseases at the University of Copenhagen and, in April 2007, the foundation donated 600 million DKK (US$107) to establish the Novo Nordisk Foundation Center for Protein Research at the same university. The two non-profit centers are completely independent of the company, as the Novo Nordisk Foundation operates by its own by-laws to support scientific and humanitarian research in Denmark. These centres will employ a significant number of scientists and further foster a strong academic research environment, pave the way for public-private partnerships within diabetes and protein science and create a large academic talent pool from which Novo Nordisk and other regional companies can recruit. The centers' staff will work on basic and translational research in a truly international atmosphere. These two new academic centers, plus Novo Nordisk's 3,500 R&D staff, will transform Copenhagen region into a global epicenter of diabetes and protein research. Nature talks with Mads Krogsgaard Thomsen, Novo Nordisk's executive vice president and chief scientific officer, about how the company aims to push for preeminence in the diabetes treatment field.

Q: Why has diabetes been a historical strength of Novo Nordisk?

Shortly after the discovery of insulin in Toronto in 1922, the Danish Nobel laureate, August Krogh, and his diabetic wife were on a lecture tour in North America. Following the visit to Toronto University, Krogh returned to Denmark with rights to produce insulin. Since then, the company has been committed to strong protein research and academic ties. Sixty years later, in 1988, Novo discovered the first ever rationally designed therapeutic protein - an analogue of human insulin, able to more closely mimic physiological insulin release at meals[1].

But whereas this molecule, insulin aspart, was delivered subcutaneously; the Holy Grail in protein therapy for diabetes remains to develop stable protein analogues that can be delivered orally without being degraded by the gut before absorption.

Q: How close are you to your goal of making better protein based therapies?

We have taken major strides towards that goal; we are understanding proteins better by combining insights into their enzymatic instability and 3-dimensional structure, followed by rational design of analogue proteins for either pharmacokinetic or dynamic improvements. These protein design technologies have for 20 years been pivotal as part of our R&D efforts. Now 20 years on, we understand extremely well what can be done by protein design. Others have come to the end of the road vis-à-vis improving the insulin protein backbone structure, but we realized that there was a novel way: attaching fatty acids to the protein through acylation in order to extend the half-life and stabilize against enzymatic degradation. We are now starting to see radical improvements in oral bioavailability through use of tailor-made protein-design technology. We may be on the verge of writing new chapters in the diabetes treatment textbook if we succeed in overcoming the physical and chemical barriers to oral therapy with large molecules such as insulin and the gut hormone Glucagon-Like Peptide-1 (GLP-1).

> "I would love someone with great experience in clinical science, someone who can unravel new ways of thinking about diabetes management."

Q: Why are you recruiting for international talent?

One of our ambitions is to make better and more convenient protein based therapies. One of our focus areas is how to make therapeutic proteins orally available. In order to realise that aspiration, we need scientifically curious specialists within protein chemistry, biology and drug delivery. We wish to globalize within Denmark since the tradition of diabetes research is so strong in Scandinavia and specifically around Copenhagen. That is, we want to use our skill base and expand it within this hotspot, where the protein technology platform is fully developed, to get even more of the entrepreneurial spirit that scientists from the US and other parts of the world represent. We need people who offer a fresh set of eyes on how to further use these new technologies.

Q: What skills do you seek from scientists in other countries?

I would love someone with great experience in clinical science, someone who can unravel new ways of thinking about diabetes management. We are 3,500 people in R&D and additional 1,000 people in our global clinical organization with about two third working on diabetes therapies. We are really looking for talented scientists all along the protein value chain with a range of scientific skills—from cellular biology and pharmacology to translational research, all the way to clinical R&D. We want to understand how a new protein therapeutic - once we are ready for it - will behave in patients while fully understanding the underlying science. Whenever we meet excellent physicians, biochemists, pharmacologists with an interest in our industry, we invite them to consider joining our fight against diabetes. Our aspiration is to get new colleagues from all over the world to help us internationalise our approach to defeating diabetes, also in our Denmark-based headquarter.

Q: Why will Copenhagen and Novo Nordisk be great places— not just for Danish scientists, but for scientists all over the world to work?

When I speak to researchers worldwide, whether they are from academia, biotech or pharma, what excites them about location is not only the scientific network, but also the available technological and pharmacological tools for research. Copenhagen offers a cutting-edge pharmaceutical environment at the academic research centers. This coincides with the presence of a company like Novo Nordisk that has the ability to create novel, first-in-class experimental drugs that can then be used in humans to help advance the field of pharmacological research in diabetes and even better understand the underlying pathophysiology. Taken together, this provides a rather unique situation in which academic researchers can create research hypotheses and new ideas for therapeutic intervention and Novo Nordisk can subsequently create relevant amounts of experimental therapeutic proteins normally unavailable to academic researchers. The academic researchers can then, in collaboration with Novo Nordisk, test out various hypotheses, by using the pharmacological tools available to them, ultimately bringing their ideas into the clinic via companies such as ours.

[1]*Brange J, Ribel U, Hansen JF et al. Monomeric insulin obtained by protein engineering and their medical implications. Nature 1988; 333: 679-82.*

life-changing careers

Join one of the world's hot spots for protein and diabetes research

What we do in R&D at Novo Nordisk

With our focussed research and expertise, we turn innovative ideas into viable protein-based therapies with the goal of improving the lives of people with serious, chronic diseases like diabetes and haemophilia.

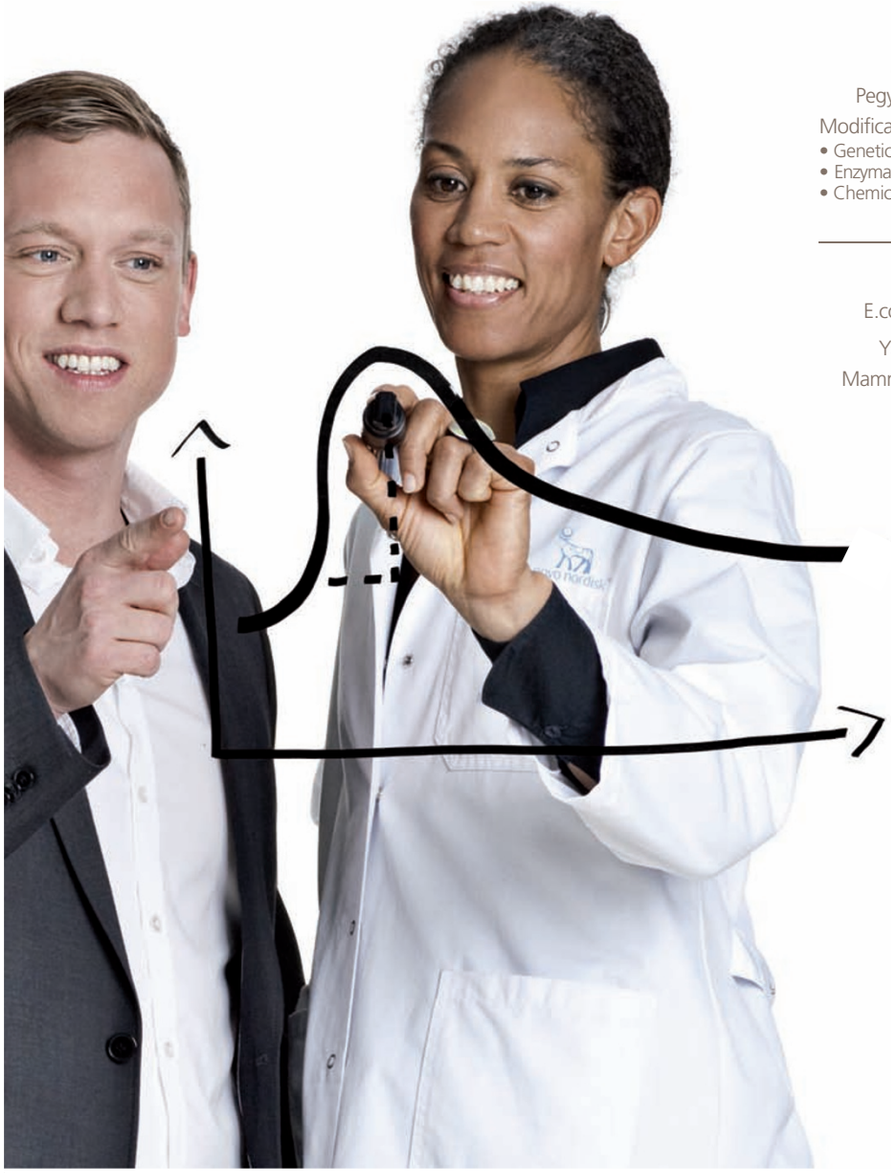
Who we are looking for

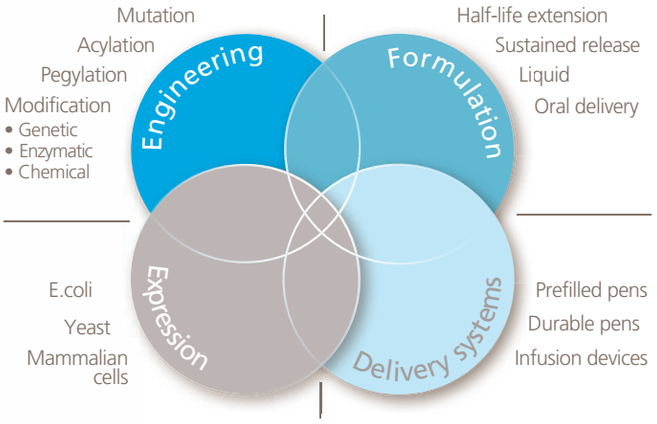
Individuals with competencies ranging from basic and applied protein science, analysis and formulation, project management, technical device design, clinical trial design and management, clinical and regulatory documentation.

Spring board to a life-changing career

In Novo Nordisk R&D, you will get the opportunity to work in an inspiring work environment using state-of-the-art technology with colleagues who are the best in their field. You will work on pharmaceutical products and devices that have the potential to make a real difference to both patients and society.

We bring proteins from molecule to market





How to join us

Learn more about R&D at Novo Nordisk, job opportunities and our STAR (Science Talent Attraction and Recruitment) fellowship programme on our career site:

www.novonordisk.com/careers

Novo Nordisk is a Denmark-based pharmaceutical company with more than 29,000 employees in 79 countries around the world and we market our products in 179 countries.

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Medivir

Medivir is an innovative pharmaceutical company with a focus on infectious diseases dedicated to provide patients with new and innovative products. Medivir invent, develop and intends to successfully market pharmaceuticals that effectively and selectively inhibit protease and polymerase enzymes as drug targets. Medivir's business focus is to be a profitable, medium-sized high-growth pharmaceutical company with its prime strength in infectious diseases within a five-year period.

The portfolio consists of ten projects, of which Xerclear™ is in the market launch phase, six projects are in clinical or preclinical development stage and the remaining three are in earlier phases. The company has been quoted on NASDAQ OMX Stockholm since 1996.

Additional information on Medivir's operations is available on the company's website, www.medivir.se. Medivir is located in Stockholm, Huddinge.

Vice President Research and Development Projects

We are looking for a candidate who wants to work in an exciting leading role providing scientific leadership in defining and managing the company's overall R&D projects

- An integral leader of our cross-functional R&D projects
- Develop operational research and development project plans through preclinical and clinical development up to market
- Participate in the commercialization of the R&D programs and working closely with Medivir's business development and external partners in the management of our out-licensed R&D projects
- Actively engage in the evaluation of in-licensing opportunities
- Reports to the CSO

Your Profile

- Extensive and documented knowledge of small molecule pharmaceutical R&D and clinical trial regulatory requirements
- Strong teamwork/interpersonal, communication, and project management skills
- Pharmaceutical R&D experience of developing and managing R&D projects, strategic and operating plans, budgets and building and recruiting teams.
- Demonstrated ability to lead, follow-up and manage projects in complex team settings
- An advanced degree in medical science, e.g. PhD. and/or MD
- A minimum of five years documented track record in senior manager and leadership positions in a biotech or pharmaceutical R&D environment with working experience from both big and small pharma
- A proven track record in virology or infectious disease is a major merit

Welcome with your application!

Medivir is cooperating with the recruitment agency Aktivia Personalkonsult AB in this recruitment project so questions related to this position should be made to Mr. Knut Natt och Dag at +46 709 56 40 46 or Mr. Rolf Mayer at +46 708 87 60 05. Applications containing a CV and a short personal letter should be sent to job@aktivia.se. Selection will be ongoing, so please submit your application as soon as possible.

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Karolinska Institutet

Karolinska Institutet
Invites applications for a **Professor in Chemical Biology**

Area of responsibilities/description of the work

We are looking for a person that can assume the long-term responsibility of conducting internationally recognized research in the area of Chemical Biology. The research should primarily focus on the development and use of chemical tools to solve biological questions. The position is linked to the recent establishment of a core facility in chemical biology termed Laboratory of Chemical Biology KI (LCBKI) that represents the main node in a national effort to make chemical biology available to scientists in the life science area. The successful candidate is expected to take on the scientific leadership for this establishment. The successful candidate is also expected to partake in the teaching of graduate and doctoral students within the subject area.

Qualifications

The applicant should hold a PhD or have equivalent scientific competence and possess professional experience relevant to the subject area.

Assessment grounds

When evaluating the candidates we place particular emphasis on high quality research within the area of chemical biology with clinical relevance. Leadership qualifications and pedagogic qualifications within graduate and doctoral education will also be considered.

During the evaluation the merits will be weighted as follows: scientific qualifications (3), pedagogic qualifications (1) and leadership qualifications (2).

Closing date for application: August 1 2010

For further information, visit http://job.ki.se, reference number 1656/10-221

Contact

Information on the position can be obtained by contacting the chairman of the recruitment committee Magnus Ingelman-Sundberg (+46)8-524 877 35, Magnus.Ingelman-Sundberg@ki.se.

Karolinska Institutet is one of the leading medical universities in Europe. Through research and education, Karolinska Institutet contributes to improving human health. Each year, the Nobel Assembly at Karolinska Institutet awards the Nobel Prize in Physiology or Medicine.

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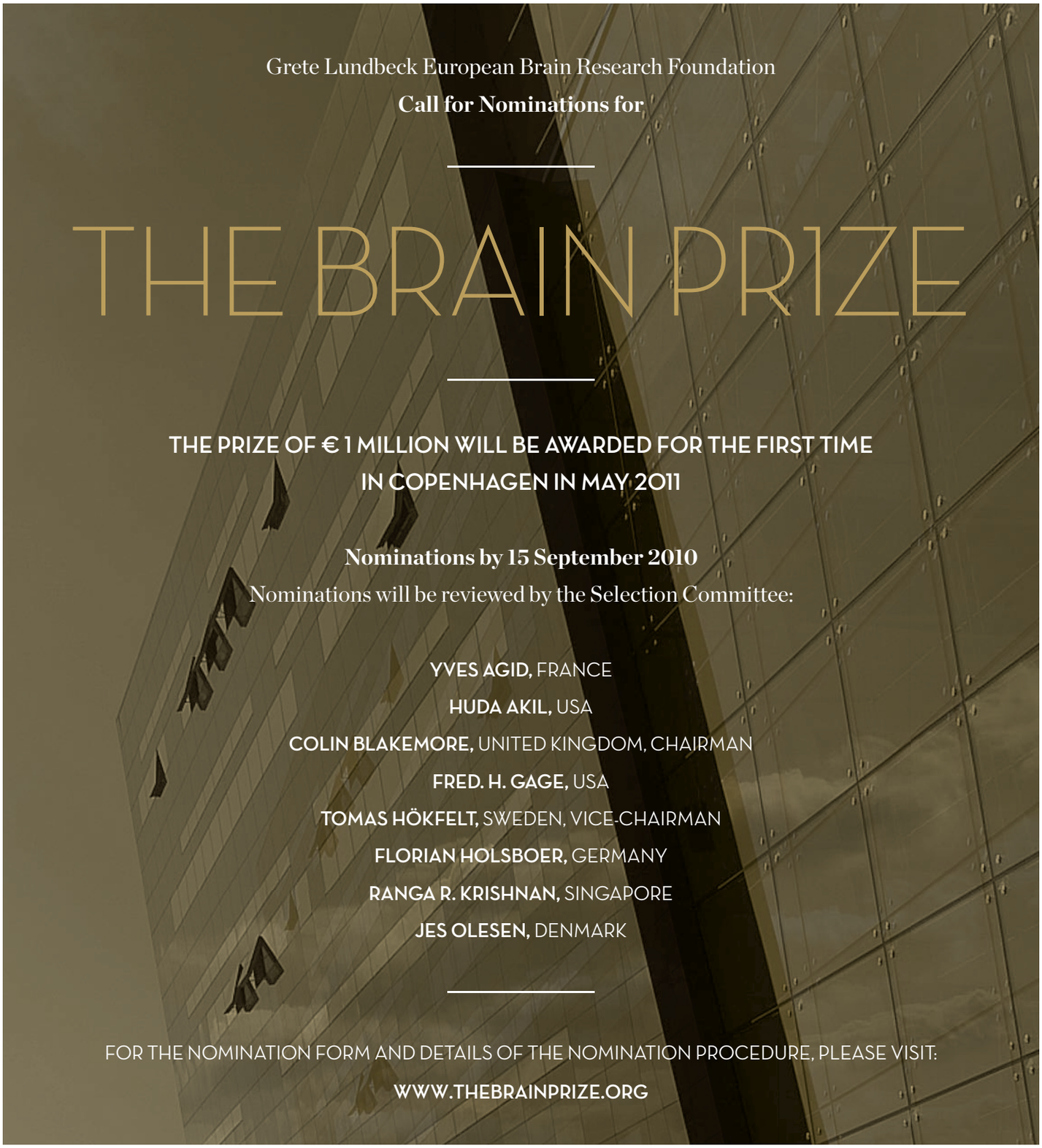

Grete Lundbeck European Brain Research Foundation

Call for Nominations for

THE BRAIN PRIZE

THE PRIZE OF € 1 MILLION WILL BE AWARDED FOR THE FIRST TIME IN COPENHAGEN IN MAY 2011

Nominations by 15 September 2010

Nominations will be reviewed by the Selection Committee:

YVES AGID, FRANCE

HUDA AKIL, USA

COLIN BLAKEMORE, UNITED KINGDOM, CHAIRMAN

FRED. H. GAGE, USA

TOMAS HÖKFELT, SWEDEN, VICE-CHAIRMAN

FLORIAN HOLSBOER, GERMANY

RANGA R. KRISHNAN, SINGAPORE

JES OLESEN, DENMARK

FOR THE NOMINATION FORM AND DETAILS OF THE NOMINATION PROCEDURE, PLEASE VISIT:

WWW.THEBRAINPRIZE.ORG

GRETE LUNDBECK EUROPEAN BRAIN RESEARCH FOUNDATION

THE BRAIN PRIZE

The Brain Prize recognizes and rewards outstanding contributions to European neuroscience, from basic to clinical

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Assistant Professors
in Regenerative Medicine

The Linköping Regenerative Medicine Center is a new centre for development of stem-cell based therapies for regenerative medicine. Our focus is on development of biomaterials and engineered cell products that confer pathogen protection to address clinically relevant problems.

The holders of the appointments below shall mainly conduct research but also participate in teaching at Linköping University.

- **Assistant Professor in Translational Stem Cell Research**

The primary duties involve establishing an independent research program focused on developing biomaterials-enhanced stem cell-based techniques for therapeutic applications. Experience with recombinant protein techniques, protein expression and/or viral systems will be a major asset.

- **Assistant Professor in Biomaterials Research**

The primary duties involve developing an independent research program, as well as participating in team-based multi-disciplinary projects together with stem cell biologists, nano-technologists, engineers and surgeons to new biomaterials within vision, nerve, skin or cardio-vascular regeneration. Thus, experience of biomaterials development especially nanogels, hydrogels, nano-composites, self-assembling hydrogels, microfludic systems for 3D tissue scaffolds and/or polymer-chemistry is a plus. Similarly, experience in GMP processes for clinical applications or clinical trials constitutes a major asset.

For further information, go to:
www.liu.se/en/job/

Application date is **July 2 2010**

Linköping University
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FACULTY OF SCIENCE
DEPARTMENT OF PHYSICS
AND ASTRONOMY
AARHUS UNIVERSITY
DENMARK

AARHUS UNIVERSITY

Positions as Associate Professor
at the Department of Physics and Astronomy (3 posts)

Post 1 - Observational Stellar Astrophysics
The Department of Physics and Astronomy (www.phys.au.dk) invites applications for a permanent position in Astrophysics at the Associate Professor level. The position is open from 1. October 2010.

The Department wishes to strengthen its activities in observational stellar astrophysics and seeks a candidate with a track record of excellent and independent research. The candidate is expected to develop a strong research programme at the forefront of this field of research.
(For the full announcement text and details regarding the post please apply online here; http://www.au.dk/nyheder/stillinger/nat/vip/)

Post 2 - Experimental Atomic and Molecular Physics
The Department of Physics and Astronomy (www.phys.au.dk) invites applications for a permanent position in experimental atomic and molecular physics at the Associate Professor level. The position is open from 1 September 2010.

The Department wishes to further develop its experimental activities with focus on the interaction between UV, VUV and X-ray radiation and atomic and molecular systems through research at the coming ASTRID II synchrotron radiation facility as well as foreign facilities such as e.g. the nearby free electron laser in Hamburg (FLASH) and XFEL.
(For the full announcement text and details regarding the post please apply online here; http://www.au.dk/nyheder/stillinger/nat/vip/)

Post 3 - Experimental Subatomic Physics and Nuclear Astrophysics
The Department of Physics and Astronomy (www.phys.au.dk) invites applications for a permanent position in experimental subatomic physics at the Associate Professor level. The position is open from 1 September 2010.

The Department of Physics and Astronomy is seeking a creative and internationally highly recognized experimental physicist with a proven record within low-energy subatomic physics and nuclear astrophysics and with solid teaching experience. The chosen candidate should have a broad overview of subatomic physics and astrophysics and is expected to develop a strong research programme at the forefront of the above mentioned field.
(For the full announcement text and details regarding the post please apply online here; http://www.au.dk/nyheder/stillinger/nat/vip/)

For more information please contact the Head of the Department Brian Bech Nielsen, Department of Physics and Astronomy, Aarhus University, 120 Ny Munkegade, Building 1520, DK-8000 Aarhus C. Tel: +45 8942 3716, e-mail: bbn@phys.au.dk.

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