Postdoctoral Research Fellow in Smoothed Particle Hydrodynamics

Ref.nr: 2018/0289

At Mälardalen University people meet who want to develop themselves and the future. Our 15 000 students read courses and study programmes in Business, Health, Engineering and Education. We conduct research within all areas of education and have internationally outstanding research in future energy and embedded systems. Our close cooperation with the private and public sectors enables us at MDH to help people feel better and the earth to last longer. Mälardalen University is located on both sides of Lake Mälaren with campuses in Eskilstuna and Västerås.

At the School of Business, Society and Engineering our students are studying to be for example Bachelors or Masters of Engineering, political scientists and business administrators. Here we have the research specialisations of Industrial Engineering and Management, and Future Energy. Our work takes place in cooperation with and in strategic agreements with companies, organisations and public authorities in the region.

Employment information

Employment: Temporary employment, 3 years
Scope: Full time
Closing date for application: 2018-02-26
Campus location: Västeras
School: School of Business, Society and Engineering, (EST)

The Future Energy Center (FEC) is looking for a Postdoctoral Research Fellow in Smoothed Particle Hydrodynamics.

The announced position is a unique chance to join one of Sweden’s most active research environments with over 30 senior researchers and doctoral candidates.

Position description

This is a strategic recruitment connected to research activities on Smoothed Particle Hydrodynamics (SPH), conducted at MDH with financing by ABB and KKS. The aim of this position is to leverage our existing research experience on the topic to the next level and develop the area and associated research competence at MDH in the long term. The successful candidate is therefore expected to be able to independently lead this research area at MDH after 3 years. We are part of a larger consortium developing an open-source SPH code with the purpose of using it to understand better energy-

intensive processes and optimize their control and performance. The position involves working in cooperation with ABB as well as several other partner organizations. The successful candidate is therefore expected to interact effectively with partner research institutes, industry, colleagues and other stakeholders and build long-term collaboration networks.

You are expected to contribute within the existing research team through:

- Active engagement in research, developing a distinct line of research on SPH through new independent research projects.
- Actively contributing to education on all levels.
- Supervising masters and doctoral students.
- Applying for suitable external research funding.
- Participating in joint departmental and university-wide undertakings.
- Participating in international collaborations on a high scientific level.
- Collaborating with research groups within and outside of MDH.

As stated above the position is meritorious for future employment at MDH. It shall include teaching at second cycle level both within your core competence and on a more general level, as well as administrative and management duties (up to 20-30%). The position is advertised as a temporary employment of 3 years with the possibility of establishing a permanent position.

Qualifications

The applicant is required to have a PhD degree in a relevant field such as Mechanical Engineering, Energy Engineering, or Aerospace Engineering.

To qualify for the appointment as a postdoctoral research fellow, you should have received a PhD within 2010-2017 and shown research and pedagogical skills within the subject area. Further reference is made to the Higher Education Ordinance section 4 and Appointments Procedure for teachers at Mälardalen University.

The position requires sound verbal and written communication skills in English.

Assessment criteria

In general terms the assessment criteria shall be based on the ability to cooperate as well as the ability and suitability otherwise required to fulfil the duties well.

The same attention shall be paid to the assessment of teaching skills as to the assessment of academic skills.

Decisive importance is attached to personal suitability. We value the qualities that an even distribution of age and gender, as well as ethnic and cultural diversity, can contribute to the organisation.

The school will select the most suitable candidate for this position following a combined evaluation of competence and skills, in addition to documented qualifications. Decisive importance is attached to personal suitability. Personal suitability will be judged in relation to the candidate's capacity to effectively carry out the research work in this area, to integrate and contribute to a positive development of the research environment at MDH, as well as deliver value to the our partner organizations.

Merit

You are open-minded and interested in collaborating across borders within and outside MDH. Interest in and experience with research as well as a post-doctoral or equivalent stay at an institution other than the one where your PhD was awarded are considered merits. Teamwork, leadership, organizational and entrepreneurial skills are advantages.

Further merits for the position are:

- Several years of experience on numerical fluid mechanics (CFD) and heat transfer, preferably related to SPH code development and application for optimizing industrial process and/or products.
- Experience and interest in interaction with various international partner organizations and professional management and cooperation, including representing MDH at project meetings abroad.
- Knowledge of, experience with, and/or interest in programming languages and modeling and analysis tools such as C++, Python, Fortran Open Modelica, and/or Matlab.
- Knowledge of, experience with, and interest in using and developing open-source software.
- A few years of working experience in an original equipment manufacturer (preferably industrial R&D) or engineering consultancy for CFD.
- Experience in teaching at the university level in energy engineering and/or mechanical engineering.
- Ability to collaborate with other researchers as well as work independently.
- Curious, goal-oriented, flexible, ambitious, and communicative personality.
- Interest in developing methods and bringing them into different application areas.

A substantial part of the research conducted at MDH is externally funded. Experience from coordinating applications for, and working in, externally-funded projects is therefore of high merit. You should have a good amount of peer-reviewed articles within the stated areas published at leading conferences and highly-ranked international peer-reviewed journals.

Application

Application is made online. Make your application by clicking the "Apply" button below.

The application must be written in English and include the following:

1. Main Application: (Please name the document as: APPLICATION, Family name, position reference number).

- CV, a complete list of publications and contact details of 2 references that we could contact.
- Diploma of PhD degree
- Previous teaching and pedagogical experiences, previous employments or leadership qualifications and positions of trust.

2. Personal letter/Qualifications:

- 2 pages where you introduce yourself, present your qualifications and describe your research. Please include a brief description of the reasons why you are interested in applying for the particular position and why your profile makes a good fit. Include previous research fields and main research results as well as future goals and research focus.

3. Publications:

- Copies of your 5 most relevant publications in PDF format.
- Copy of your PhD thesis as PDF.

The scientific publications that you do not have in digital form are to be sent by post in three copies to:

Mälardalen University
Division of Human
Resources
Ref.no: 2018/0289
Box 883
721 23 Västerås

The applicant is responsible for ensuring that the application is complete in accordance with the advertisement and will reach the University no later than closing date for application.

We look forward to receiving your application.

We decline all contact with recruiters and salespersons of advertisements. We have made our strategic choices for this recruitment.

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