



2009-12-21/KE

Evaluation "Professor i energiteknik med inriktning mot förnybar energiteknik" ref 2009-45

Björn Karlsson, Göran Wall and Jafar Mahmoudi have applied for a position as Professor in Energy Technology at Mälardalen University (MDH).

The evaluation of the applications is based on the information available in written applications, provided by each applicant. Also, in cases, information is collected from various IT sources.

Pre-requisites

The professorship is part of focused efforts within the research profile process and resource optimization, including energy, environmental and building technology. The professor is expected to create and be responsible for a creative environment by actively participate in all activities within the research area, collaborate with other subjects and the surrounding society. Administrative, research, as well as, teaching on all levels is included in the assignments. The employment presumes a high degree of attendance and participation in the different activities at the academy. The academy also in general require researcher to actively apply for external grants for research.

Basis for forming a judgment

Both scientific and pedagogical ability should be evaluated, although scientific ability within energy technology, manifested in publications in well-reputed refereed journals is of greater significance. Experience of managing and developing research and education environments is also of importance. In this case, energy technology refers to develop and render more efficient processes and systems for power and heat production for sustainable energy resources such as biofuels, solar and wind power.

Experience of managing and developing research and education environments refers to:

- Documented capability of theoretical and methodical development work
- Experience of work with a cross-disciplined perspective
- International orientation
- Documented agreeable ability to co-operate
- Leadership and ability to communicate including experience of initiation, planning and leading of research project with national and international collaboration and publishing.
- Experience of teamwork and organisation of well-functioning research- and/or education environments.

The possessor of the employment is expected to teach in both Swedish and English. A possessor with another native language than Swedish is expected to tech in Swedish within two years.

For evaluation of the pedagogical ability are broad experiences of pedagogical development as well as teaching and supervision on different levels within power and heat technology emphasized.

~~Described future plans for development of education is as in case for research written for a position as Professor at LTH. The relevance for MDH is not evaluated.~~

~~Administrative and leadership experiences~~

~~Karlsson writes in the submitted application that he is not a skilled administrator and project leader. Nevertheless, he has during his career received several large projects from various sources, which demonstrate that he has both project leader abilities and also is also capable of attracting funds for research.~~

~~International cooperation's and interaction with the society~~

~~According to the application, Karlsson has (and still is) actively in cooperated with several researcher in the Northern Europe, as well as, with developing countries in Africa where he has been active as external supervisor supported by SIDA.~~

~~Karlsson has been active as a local politician at the community of Älvkarleby since 1988.~~

~~Other~~

~~Karlsson has been a member in scientific conference committees four times, once as chairman, and acts as reviewer for four journals on a regular basis.~~

~~Evaluation of candidate~~

~~The overall evaluation of Björn Karlsson merits is that he has a strong background in scientific research in solar power, which is in line with the requirements stated in the pre-requisites. He is a well experienced supervisor and has experience from teaching although his pedagogical focus is on supervision in research studies.~~

~~Karlsson appears to be an innovative, enterprising and team working person, who should be capable of contributing on many levels within the research profile and energy technology at MDH.~~

Göran Wall

Compilation of qualification

Göran Wall has submitted an extensive application.

Background

Wall has four academic degrees; a MSc in Physical Engineering (1975) at CTH, a Lic of Engineering in Physical Resource Theory (1982) at CTH, a PhD in Physical Resource Theory (1986) at CTH and also Master of Education (2007), GU. He received a Docent in Physical Resource Theory 1995.

After his PhD, Wall stayed a few years at Physical Resource Theory at CTH till 1989. Thereafter, he had various positions within the academia (MDH, KAU, HKR, HIG) in Sweden, and is since 2008 employed as Associate Professor in Energy Engineering at Gotland University. In 1987 to 1989, he was a guest researcher at Tokyo Institute of Technology. From the information received, it also evident that he has operated a consultant company since 1976 with commissions from industry and educational organisations.

Research

The scientific work has mainly been focused on the following areas:

- Exergy based concepts – applied to natural and social resource conversion systems.
- The society's use of natural resources – applying physical concepts as exergy to the total resource conversion system of the society
- Combustion without emissions – combustion without emission based on CO₂ cycles
- Total quality management – macro-concepts for sustainable development
- Ecological indicators, industrial ecology and sustainable development

Wall has also made other minor contributions. From the received information, it is clear that Wall is well-recognised within his scientific research field.

The list of publication is extensive; Wall has published 19 papers, 31 conference papers, 33 other research papers and 15 other general publications.

Wall has not submitted any description of future plans for developing research at MDH.

Pedagogical experiences

From the CV it is apparent that Wall has significant experiences of teaching, preparing of course literatures (seven) and development of courses. During his time at the different seat of learning, he has developed and participated in several pedagogical programmes and been teaching in 46 courses.

Walls experience as supervisor at graduate level includes supervision of two PhD and one Lic to examination, and nine other graduate students for different periods of time. He has also been supervisor for 16 master students.

No account for future plans for developing the education at MDH is provided in the application.

Administrative and leadership experiences

During his career, Wall has been leader for eight courses and five research projects. The size of courses and research projects indicate that his main leadership experience is from education.

International cooperation's and interaction with the society

During his career, Wall has cooperated with several international researchers. This is also illustrated by the large number of research visits abroad, as invited researcher or speaker (Universidad Industrial de Santander, Bucaramanga in Colombia, University of Rome in Italy, MITI in Japan, TIT in Japan, MIT in USA).

Wall is very active in interacting with the community in open lectures, debate articles, communicating in radio and TV.

Other

Wall has been a member in scientific conference committees seven times, four times as chairman, and acts as reviewer for one journal and is a member in one journal on a regular basis. He has also been reviewer for several conferences and been invited as speaker several times, in many cases, as keynote speaker.

Evaluation of candidate

To summarise, Wall is obviously a dynamic person with a large working capacity and competence within his field. Wall is also a devote teacher with strong pedagogical qualifications, favouring international collaboration and contacts. Based on the scientific competence and experience of education and supervision, Wall is qualified as professor. However, his research field is relatively narrow focusing mainly on the exergy concept, which is applied in different research topics.

Jafar Mahmoudi

~~Compilation of qualification~~

~~Jafar Mahmoudi has submitted an application consisting of a CV and a review on research and educational activities.~~

~~Background~~

~~Jafar Mahmoudi has three academic degrees; a BSc in Metallurgical Engineering (1986) at Sharif University of Technology (SUT), Tehran, Iran, a MSc in Metallurgical Engineering (1992) at SUT and a PhD in Materials Processing (1999) at KTH.~~

~~Before starting his graduate studies, Mahmoudi acted as lecturer at the Dept of Metallurgical Engineering (1992-1994), Azad University, Karad, Iran and was also Head of Metallurgical Engineering Department (1992-1994), I.R.O.S.T., Tehran in Iran. After his PhD 1999, Mahmoudi was employed by Outokumpu R&D and advanced to Manager for Outokumpu Global Modelling Group, which he managed 2003 to 2005. During 2004 to 2005, he also worked as regional~~

Recommendations

Based on the information in the submitted applications of the three applicants I place the applicants in the following order of precedence:

1. Björn Karlsson
2. Göran Vall
3. Jafar Mahmoudi



Klas Engvall, Adj Prof
KTH, Kemisk Teknologi
kengvall@kth.se
073-5006410