

Master students: A work with double sided value

Torbjörn Thiringer Networker, Educator, Advisor



Torbjörn Thiringer, Professor in Power Electronics at the division of Electric Power Engineering

Torbjörn Thiringer, Professor in Power Electronics at the division of Electric Power Engineering. He works mainly within the field of electrical systems and incorporates electrical systems within electrified vehicles and wind energy converter systems; issues actually not so far from each other.

“I started 25 years ago with wind energy and I still work on some wind power related research projects, and they are nowadays quite influenced by the vehicle research that often is done in cooperation with Volvo. The same models, used for controlling and distributing power in cars, can be used for controlling generators in wind power farms, and vice versa”, he says.

Torbjörn Thiringer has always been interested in working with applied research. He started his career as a researcher within the field of Electric Power focusing on wind power. During his PhD, he spent a lot of time taking measures at different wind power farms. The work gave him a network outside academia and came to influence his further research to successively change towards Power Electronics. Today Torbjörn Thiringer works in close collaboration with companies such as Volvo Cars, Göteborg Energi, ABB, Volvo AB, Ericsson AB and Saab Group. His wide network and industrial collaboration have provided a natural source for master theses. These projects are much shorter than research

projects and can focus on specific problem solving with potentially large benefits for the client.

From students to engineers

During his years Torbjörn Thiringer has supervised more than 200 master students. An example is a project at Volvo Car Corporation in Gothenburg, where two of his master students, worked for 20 weeks at the company’s department of Power Supply Components. Their task was to verify and test a battery technology that the company recently had filed a patent application for. *“Students can be so much more free-minded and they don’t have to consider all the other aspects of a project”,* Daniel Midholm, manager at the department of Power Supply Components at Volvo Car Corporation in Gothenburg says and continues: *“In this case we did not have a specific deadline, so it was a very good assignment for master students to work on and it turned out very well”.* In general Volvo Car Corporation chooses to work with master theses because of the great contact the company get with students and it is also a good way of promoting their activities among students in general, according to Daniel Midholm. Today two years later, one of the students are employed at the division at Volvo Car Corporation and the battery technology is about to be taken into production.

“I have about at least twenty former master students at Volvo AB and Volvo Cars, here in Gothenburg, and quite a few of them contact me with projects suitable for master theses. Naturally we then talk about the technological problems they have both within the project but also outside the project. This gives me new challenges to investigate” Torbjörn Thiringer says.

Passion about education

Torbjörn Thiringer is passionate about educating and he believes that the most important mission for a university is to educate individuals to serve society with new knowledge.

“Chalmers is important for the industry in West Sweden, and I believe 2 times Volvo, Ericsson and Saab as well as the other industry is extremely important for this region. So, if I can make a contribution and support for instance Volvo Cars in their development of the V60 plug-in model, I think that kind of work is spot on”.

A few years ago, he was granted for a personal mobility programme, enabling him to spend one or two days a week at Volvo Cars R&D department. When the programme ended the department at Volvo Cars valued his presence so much that they decided to carry on, with Torbjörn Thiringer as a consultant.

“It is similar to the work I do at Chalmers. I mainly supervise in different research and development projects. But I also make smaller investigations, answers questions and

give advice to other departments there as well”, he says.

Research questions of tomorrow

Although the contact with industry is rewarding, he is mainly having his research supported by governmental research funds like The Swedish Energy Agency and VINNOVA - The Swedish Innovation Agency.

“Industrial contact within the research project is very important, however fully industrial funding has a risk that the industrial partner needs to show quicker deliveries within their company than what is suitable in research projects. In addition, very important is that Ph.D projects cannot be interrupted due to market conditions. This makes the co-financing form research boards like The Swedish Energy Agency and VINNOVA absolutely essential”, he says.

“But what is then the greatest benefit from spending so much time in industry relations?” I ask, and he replies *“I have a great network. When I have technical problem that I don’t know how to solve, there is often someone in my network that can help me”,* and he adds *“And for my research, it is the understanding on where society, and mainly industry, is heading, and what type of research questions that are relevant for the future”.*

Text: Niklas Fernqvist

Making Science Useful

Roles: Seven types of roles are identified in relation to making science useful. The roles are developed from different activities for diffusion and utilisation, carried out by one or a group of researchers, or by an entire part of the organisation. The roles are; researcher, educator, advisor, debater, entrepreneur, infrastructure developer and networker. These roles are in general intuitive but develop differently, based on personal characteristics, area of research, the recipients of results within the area, and by different local traditions of how to work with utilisation.

More information: This framework is developed by Staffan Jacobsson, Eugenia Perez Vico, Chalmers University of Technology, Hans Hellsmark, SP Technical Research Institute of Sweden and Merle Jacob, Lund University. For more detailed information, please contact Eugenia Perez Vico (eugenia.perez@chalmers.se) or Hans Hellsmark (hans.hellsmark@sp.se).

Contact

Thorbjörn Thiringer
thorbjorn.thiringer@chalmers.se

Chalmers Energy Area of Advance
www.chalmers.se/energy
energy@chalmers.se