



Case Study

Linus Kemme



EPSRC & NERC Industrial CDT
for Offshore Renewable Energy www.idcore.ac.uk



Linus is an excellent example of how IDCORE students can become integral to the work of their sponsor organisation. This can go far beyond just the work of their research project, although this too provides key information for the work of their respective organisations. Linus has contributed to areas of work across his sponsor organisation, Mocean Energy, becoming a versatile and effective member of the team.

What I really like about IDCORE is the combination of industry and academia, so ideally you have the best of both worlds. You have the freedom to research from the academic side, the time to learn things. But also you have the relevance from industry. I didn't just want to research to fill out a basement with documents that are never looked at again.

Linus Kemme

Project details

Mocean Energy is an ocean energy technology development company, currently focused on providing power to offshore locations, by combining wave and solar power with battery storage. A key goal of Linus's research project is to better understand and more accurately and efficiently predict the fatigue life of Mocean's ocean energy converters due to wave loading, providing key information for the design of the units, as well as possibly also feeding into their operations and maintenance. He's building a model to simulate the stresses and forces acting on these units with a view to estimating the life lengths of the different components in the converter's body. His supervisor, Alfred Cotten, feels this work is progressing well,

and should provide the company with much greater capability in the structural design process, allowing for rapid iteration and more detailed analysis.

Going above and beyond

However, this project is far from the limit of what Linus has been accomplishing within the company. Adjacent to the main thread of the project, he helped design a new mooring system for the units he's studying. This aligned well with his personal ambitions of developing greater engineering skills through his time at the company.

He also took significant responsibility in the running of a tank testing programme for Mocean, something neither he nor the team had anticipated in planning his work early on. Linus was also integral in making this testing programme happen in the first place. He provided the connection between Mocean and the academic institutions who owned the tank testing facility. This is just one example of how the company has benefitted from this continued, active engagement with IDCORE through student sponsorship.



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Linus has been very proactive. He's a good communicator in the way he interprets information, contributes to discussions, brings his own ideas, etc. This has really developed into something where he's an integral member, giving insights and inputs into both the engineering and modelling discussions.

Alfred Cotten, Head of Modelling & Testing, Mocean Energy

IDCORE skills development

Linus believes that IDCORE helped prepare him for playing such an active role within his sponsor organisation. The programme's cohort learning model is central to the first year of learning for all students. They must work together to complete a series of projects, each bringing their diverse skills and technical knowledge to bear. Linus believes these experiences were key to him honing his communication skills, so valued by his industrial supervisor.

IDCORE also continues to provide modules throughout the four-year research programme. Some of these are concerned with issues of commercialisation and organisational management. Linus has found that these modules have helped him to reflect on practice within Mocean and make useful recommendations about communications between teams within the company. He also received tank-testing training through the centre which helped give him the confidence to play such a significant part in the tank testing programme mentioned above.

Personal goals

As well as providing valuable inputs to his sponsor organisation, Linus feels he is achieving many of the personal goals he'd aspired to with IDCORE. He'd wanted to work at the cutting edge of technological development, feeling ocean technology was a good place to find this. As such, he's valued the combination of industrial and academic experience IDCORE has provided. It has given him the time to develop knowledge and skills while ensuring they are industry relevant, wanting to avoid researching "just for the sake of things".

In particular, he'd wanted to develop skills in engineering, something both IDCORE and Mocean have supported him in doing. Having studied physics in both his undergraduate and master's degrees, he'd always been interested in the deepest concepts behind things. However, as he was looking to transition his skill into something more applied he felt working in offshore renewables would give him the opportunity to work with more visionary, enthusiastic and innovative people. He selected his current project on the basis that it was highly technical and would allow him to make this transition in a 'hands-on' way. He has also joined the weekly engineering meetings at Mocean, and feels that his IDCORE training has helped give him the confidence to engage with them.



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