Knowledge Transfer Partnerships

Fundamental new understanding informs next generation fuel cell technology

Company name:	Ceres Power Ltd
Location:	Horsham
Employees:	100
Project length:	2 years
University school:	School of Computing, Engineering and Mathematics
Result:	New knowledge in thermometry measurement develops innovative design and calibration solutions

The Challenge

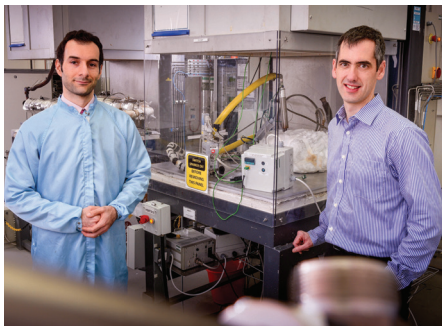
Ceres Power is a world leading developer of next generation fuel cell technology. One challenge in developing low cost and lower emissions products was in understanding the principles governing accurate and durable temperature measurement inside the system. The more accurately the system temperature across the operating range can be controlled, the more efficient it will be. Working in such a highly specialised field, the company recognised the opportunity to develop their knowledge and expertise, learning from the university's Centre for Automotive Engineering in order to help them maintain their position as world leader in the emerging market.

The Solution

A doctoral researcher was recruited to develop accurate temperature measurement and control mechanisms to underpin thermal management, and thus performance. With support from academic experts in applied thermal engineering led by Rob Morgan, the doctoral researcher designed and constructed a test rig which was used to validate his theoretical modelling on the factors affecting accuracy. This information was then used to develop a mitigation strategy to inform guidelines for fuel cell system design and best practice, enabling the company to design a product with optimal performance.

The Benefits

The project was highly successful, both technically and commercially and Ceres Power are now working with a new fundamental understanding of the accuracy of temperature measurements which has led to improved data feeding into high level technical decision-making. The new knowledge and understanding led to the development of design and calibration solutions which were successfully rolled out into live engineering programmes during the project, and embedded in Ceres Power's new prototype technology which is being trialled from 2016. The doctoral researcher, who was named 1st inventor on a patent resulting from the KTP, has since been employed by the company as Test Engineer, ensuring that the new knowledge and skills remain embedded deep within the company. Two high quality journal publications were produced during the KTP along with three other publications. Additionally, an Industrial Placement was set up as part of the KTP to undertake computational fluid dynamics (CFD) modelling, all of which were notable outputs for the university.



Doctoral researcher, Farzad Barari and Paul Barnard (Ceres Power)

Find out what KTP can do for you

You can find out more about what a Knowledge Transfer Partnership with the University of Brighton can do for you at **www.brighton.ac.uk/ktp**, or you can email **ktp@brighton.ac.uk** or call **01273 642426** to speak to one of the team.