Iceotope Research and Development Ltd and the University of Leeds

KTP Associate – Immersed Liquid Cooling Product Development Engineer

Iceotope’s business is primarily related to the total liquid cooling of microelectronics typified by the complete liquid immersion of the motherboards in computer server modules. Working in partnership with the University of Leeds we have a very exciting opportunity for a recently qualified Post-Graduate to “fast track” their career by leading a high profile and strategically important project to a successful conclusion.

A Knowledge Transfer Partnership (KTP), one of Europe’s largest Graduate recruitment programmes, has recently been established between the University of Leeds and Iceotope. It is driven by the company’s desire to develop a detailed understanding of fluid mechanics and heat transfer processes controlling the liquid cooling system with the aim to optimise performance and maximise commercial opportunities.

Benefits

You will be based at the company premises at the Advanced Manufacturing Park just outside of Sheffield but will be employed by the University for the duration of the project, a fixed period of 3 years. The Institute of Thermofluids in the School of Mechanical Engineering will provide academic and technical support to you throughout the project.

Throughout the KTP you will;

- Receive a competitive salary and an additional training package worth at least £6,000.
- Gain excellent experience of managing a high profile project.
- Receive formal management training.
- Have opportunities for both personal and professional development.

Requirements

- Graduated within the last five years with PhD in a Computational Fluid Dynamics-related area and a minimum 2.1 degree or MSc in a Computing, Engineering or Mathematics-related discipline.
- At least 3 years Industrially-relevant research; computational (CFD) modelling of turbulent buoyancy flows and conjugate heat transfer, sound knowledge of large scale computing systems, and experience of liquid cooling of microelectronics.
- Experience of design and operation of heat transfer experimental apparatus.
- Mature outlook capable of working on own initiative, both within a team and with people from different disciplines.
- Excellent communication, numeracy and problem-solving skills.
- Hard-working and with a determination to overcome problems and succeed.
- Enthusiasm for the design and development of innovative technologies to meet practical problems.
- Ability to communicate complex matters to non-specialist audience.
- Good time management and the organisational skills to meet deadlines.

Salary: £ Competitive + benefits

Informal enquiries related to this post may be made to Dr Jon Summers +44 (0)113 343 2151 or email J.L.Summers@leeds.ac.uk

Job ref: CSRIS1032...............................Closing Date: 12 January 2016
Further Post Information

Background

Iceotope engages in total liquid cooling, which involves the cooling of all microelectronics by liquids. This results in the removal of large amounts of infrastructure and running costs for the end user. It is a known fact that advances in microelectronic technology are resulting in an increase in component density year on year and increased demands on cooling systems. In order to keep up with the technological demands of the microelectronics industry we require continual improvement and refinement to our cooling technology in order to cater for the increases in thermal flux densities without impacting the energy consumption and running costs of our systems.

To achieve our strategic objective we need to improve our theoretical and practical understanding of how our products function, particularly related to the properties of dielectric fluids and the processes of heat transfer and exchange within them. This embedded capability will give us the sound footing needed to continually improve the cooling capability of our products and to be proactive in developing new solutions with our partners to address the future requirements from this industry sector.

Job Description

The objective of the KTP is to develop an improved understanding of how the Iceotope immersed dielectric liquid cooling system cools microelectronic systems of increasing power density. You will be required to develop software tools that can predict how heat is transported from the hot microelectronics into the liquid in the presence of controlled phase-change and then finally harvested by a water cooling circuit. The knowledge and tools developed on the project will be used to optimise the cooling efficiency and exploit phase-change coolants, all of which have significant commercial benefits for the Iceotope cooling solution.

The project will include the following stages:

- Familiarisation with the technical & commercial context of the project
- Develop computational models of the flow and heat transfer in the systems
- Develop an experimental testing rig to validate computational models
- Using design optimisation tools carry out parameter studies and system optimizations
- Develop robust methods for system performance modelling and cost-benefit analysis to support sales.
- Carry out company training in methods and techniques developed and disseminate findings to a wider audience through company web site publications, conferences and academic papers.

The project will provide you with the opportunity to become an internationally-recognised technical authority on total liquid cooling and to develop your wider management and professional skills through courses/qualifications and to receive project management training.

Person Specification

It is essential you can demonstrate evidence of:

- Graduated within the last five years with PhD in a Computational Fluid Dynamics-related area and a minimum 2.1 degree or MSc in a Computing, Engineering or Mathematics-related discipline.
- At least 3 years Industrially-relevant research; computational (CFD) modelling of turbulent buoyancy flows and conjugate heat transfer, sound knowledge of large scale computing systems, and experience of liquid cooling of microelectronics.
- Experience of design and operation of heat transfer experimental apparatus.
- Mature outlook capable of working on own initiative, both within a team and with people from different disciplines.
- Excellent communication, numeracy and problem-solving skills.
- Hard-working and with a determination to overcome problems and succeed.
- Enthusiasm for the design and development of innovative technologies to meet practical problems.
- Ability to communicate complex matters to non-specialist audiences.
- Good time management and the organisational skills to meet deadlines.
It is also desirable for you to have:

- At least 1 year of experience of working in an industrial company.
- Knowledge of different microelectronics cooling technologies.
- Skills in analytical flow modelling

University Values

All staff are expected to operate in line with the university’s values and standards, which work as an integral part of our strategy and set out the principles of how we work together. More information about the university’s strategy and values is available at http://www.leeds.ac.uk/comms/strategy/.

Employment

You will be employed by the University of Leeds for the duration of the KTP, but based at the company offices just outside of Sheffield and subject to their employment practices and conditions of work. Your work will be supervised by staff both at the company and the University of Leeds.

Personal Development

In addition to the challenges of the post, you will be expected to work towards a chartered membership of an appropriate professional body. If there is sufficient justification, an opportunity may exist to register for a higher degree at the University of Leeds to carry out further studies related to the KTP work which would involve working in your own time. You will also be required to attend various residential KTP training, management and personal development courses for which time is allocated and funding provided.

Additional Information

Details of the terms and conditions of employment for all staff at the University, including information on pensions and benefits, are available on the Human Resources web pages accessible via the link http://www.leeds.ac.uk/hr/index.htm

- Information on the company can be found at http://www.iceotope.com/. Further information regarding the post will be made available if you are short listed.
- Information on the Institute can be found at http://www.engineering.leeds.ac.uk/thermofluids/
- Information on KTPs can be found at http://ktp.innovateuk.org/

Disclosure and Barring Service checks

A Disclosure and Barring Service (DBS) Check is not required for this position. However, applicants who have unspent convictions, cautions, reprimands and warnings, including any pending criminal proceedings must indicate this in the ‘other personal details’ section of the application form and send details to the Recruitment Officer at disclosure@leeds.ac.uk.

Disabled Applicants

The post is located at the company premises. Disabled applicants wishing to review access to the building are invited to contact the department direct. Additional information may be sought from the Recruitment Officer, email disclosure@leeds.ac.uk or tel +44 (0)113 343 1723.

Disabled applicants are not obliged to inform employers of their disability but will still be covered by the Equality Act once their disability becomes known.