One year fully funded industrial MPhil available from the University of Leicester to undertake applied research and development on behalf of a Small and Medium Enterprise (SME) in Leicester & Leicestershire. The MPhil research will develop new techniques to improve the heat transfer efficiency in a number of technologies. The industrial MPhil is funded by the Leicester Innovation Hub (through European Regional Development Fund), and the sponsoring SME.

“Novel Methods to Produce High Efficiency Heat Pipes”

Project Ref: LIH132

Background
This Industrial MPhil qualification and placement is a continuation of a collaboration between the Materials Centre (Department of Chemistry) and European Thermodynamics Limited (ETL), a Leicester based SME. ETL provides smart heat management and cooling solutions for hi-tech industries including aerospace, automotive, marine, military, medical and telecommunications.

The company specialises in problem definition, research and design capabilities, modelling and analysis of components and product manufacture.

Some example of their applications and products include:
- Battery cooling
- Heat recovery and transport
- Energy harvesting
- Solid state thermoelectric cooling

European Thermodynamics is looking for an MPhil student to work on materials processing and proof of concept development for improving heat transfer systems used in all of the above applications.

The Project
This R&D project will focus on the design and fabrication of novel high efficacy heat pipes for a range of technological applications. These range from space-based instrumentation through consumer and automotive electronics, to energy storage (novel batteries) and domestic heat management.

The project will deliver specific guidance on the most promising processing route for commercial exploitation, and will allow the company to assess the potential gaps in knowledge and resources in future developments.

The successful candidate will work with an established partnership between European Thermodynamics, which are one of the leading technology developers in heat management materials and technologies.

Leicester Innovation Hub is part funded by European Regional Development Fund and the University of Leicester
The project will focus in several key areas:
1. Electrolytic coatings for high efficiency heat-transfer characteristics and associated fabrication methods
2. Surface analysis, imaging, measurement and metrology
3. Coating technologies for improving the performance of existing heat pipe systems.
4. Commercialisation of results

You will work closely with the sponsoring company, ETL, and the University of Leicester. Supervision will be provided by Prof. Karl Ryder (Department of Chemistry) and Shannon Stodd (Innovation Hub).

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<th>Essential Qualification &amp; Skills</th>
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<td><strong>Qualifications:</strong></td>
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<td>• Minimum Bachelor Degree in Chemistry, Engineering or Materials Science with at least a UK 2:1 or equivalent.</td>
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<td>• University English language requirements apply.</td>
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<td><strong>Skills:</strong></td>
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<td>The ideal candidate would have experience in/knowledge of some of the following areas:</td>
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<td>• Electroplating and electrochemical coating technologies</td>
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<td>• Laboratory experience in chemistry analytical techniques</td>
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<td>• Fabrication and characterisation of thin-film coatings, preferably metals.</td>
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<td>• Electrochemical methods for metal plating and analysis</td>
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<td>• Electron microscopy, optical microscopy or other forms of surface metrology</td>
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<td>• Coatings technologies</td>
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<td>• Research and network development, testing and data analysis</td>
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<td>• Ability to build strong working relationships with core stakeholders (academics, sponsoring SME)</td>
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<td>• Business engagement/development skills and aptitude</td>
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<td>• Effective English oral and written skills in order to communicate effectively</td>
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<td>• A self-starter who is able to work as part of a team</td>
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How to apply

Please apply using the online application system.
Apply for: Campus Based Full Time / Chemistry

- In the funding section of the application, please select Studentship and in the dropdown menu, select ERDF MPhil project.
- In the Personal Statement section - please indicate clearly why you are interested in undertaking this research project and why you are the best candidate to help deliver the project objectives.
- In the Research Proposal Section please state: Applying for MPhil Project Ref: LIH0? no proposal required.

Shortlisted applicants will be invited to an interview with the academics and the sponsoring SME.

Application Deadline
Open until filled
The Leicester Innovation Hub is part-funded by European Regional Development Fund (ERDF).

To qualify for fully funded support the SME, MPhil student and University of Leicester academics must fulfil all ERDF and University MPhil degree eligibility criteria which include:

- **The MPhil student: must be a UK or EU (European Union) national;** have graduated within the last 3 years in a related discipline; adhere to project confidentiality; at the start of the project assign any arising IP from the project; base their MPhil degree thesis on the research outcomes of the project; work closely with the SME company to undertake the research project; deliver monthly progress reports and a comprehensive project report to the University and sponsoring SME in addition to the MPhil thesis. Please note that University of Leicester requires at Bachelor Degree with at least a UK 2:1 or equivalent.

- **Each SME project will be delivered by one full-time MPhil student over one year;** the MPhil project will have a research focus and will be supervised by two University of Leicester academics (1 day a week each; academics are required to complete timesheets).

**Who pays?**

- The University of Leicester pays a monthly stipend of £1,166.67 (total Stipend £14,000) in arrears to the student. The funding will be strictly limited to 12 months.
- The SME pays the University’s 1 year full-time MPhil fees (upfront before project start).

**Times Scales**

- This one year MPhil project will start as soon as possible aligned with University start dates.
- The MPhil projects will last a minimum of one year full-time.

**Further Information**

For informal enquiries about technical aspects of this Industrial MPhil, or information regarding the Leicester Innovation Hub, please contact Shannon Stodd (Shannon.Stodd@le.ac.uk).

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