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**Job Description**

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| **Job title:** | **KTP Smart Metering Project Engineer – KTP Associate**  |
| **Department/School:** | **Electronic and Electrical Engineering** |
| **Salary:** | **£25,000 to £28,500 p/a depending on qualifications and experience, plus an additional £6,000 personal training and development budget****The post is fixed term for 36 months** |
| **Location:** | **Ashridge Engineering Ltd. (Okehampton, Devon)****Okehampton is a small market town with limited public transport therefore the Associate may need to have their own transport** |

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| **Job purpose** |
| This is an exciting role for an aspiring electronics hardware and embedded device engineer to develop and bring to market a revolutionary waste water Smart Meter that will measure and analyse flow rate and properties of constituent materials flowing in sewage or grey water discharge pipes.This is a three-year Knowledge Transfer Partnership (KTP) between Ashridge Engineering Ltd and the Department of Electronic and Electrical Engineering at the University of Bath. |

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| **Source and nature of management provided**  |
| The KTP project is delivered by the Associate and is managed through a Local Management Committee (LMC). This is chaired by the senior company executive and comprises the Company and Academic leaders/supervisors and a KTP Advisor (Innovate UK representative), and meets every 4 months. Monthly progress meetings are held with the Company and Academic Supervisors. Day-to-day management will be organised by the Company’s Technical Manager. |

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| **Staff management responsibility** |
| There is no direct management responsibility. Limited supervision of technical staff might be envisaged at specific times, if justified by the project’s operational requirements. |

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| **Special conditions**  |
| The Associate must be able to travel as required, to attend KTP residential modules and any meeting in the UK or overseas as is necessary for the successful completion of the project. |

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| **Main duties and responsibilities**  |
| **1** | **Electronics Hardware Development.** Research, design specification and integration of a stable, manufacturable and saleable version of the electronics and mechanical hardware for a contact based Smart Meter product which meets industry quality standards and international regulations. Tasks will include development and refining laboratory electronic circuit prototypes and mechanical assemblies to optimise the key elements of the system, (e.g. sensing arrays, drive electronics, multiplexing, signal detection and EMC screening elements). |
| **2.**  | **Project Management**. Working in an industrial environment to project manage and lead (under company supervision) the development, design and testing of a waste water Smart Meter that will measure and analyse flow rate and properties of constituent materials flowing in sewage or grey water discharge pipes. |
| **3.** | **Software Development.** Research, implement and refine signal processing, tomographic image reconstruction, self-calibration and display algorithms for the above Smart Meter hardware. |
| **4.**  | **Research**. Undertake challenging research and development into the implementation of an improved Smart Meter product employing ‘through wall’ contact-less pipe sensor. Tasks will require development of sensitive admittivity measurement and tomography imaging techniques, hardware and advanced signal processing capabilities.  |
| **5.** | **Teamwork and motivation**. This project is part of a wider team effort and flexibility will be required when scheduling tasks and there will be some mini-projects in addition to the KTP projects. Be a very strong communicator, and demonstrate the ability to work with both the academic supervisor and the wider team in the University’s Engineering Tomography Lab (ETL group) as well as with industrial colleagues and supervisors. |
| **6.** | **Initiative and problem-solving.** The main objectives of the project and the desired timeline are set but how they will be achieved will be dictated by the evolution of the research. The Associate must therefore be self-motivated to complete the tasks and manage the project accordingly. |
| **7.** | **Customer Interaction**. Further develop the Smart Meter product as required by customer applications. |
| **8.** | **Supervision.** At specific times in the project, the Associate might be expected to supervise technical personnel for completion of specific tasks, either in person or remotely. |
| **9.** | **Liaison and Networking**. The project relies on a good dissemination of results but also the pro-active search for the right information, sometimes outside the applicant’s direct skill set, and sometimes to show external customers the results of the project and how it matches their objectives. Timely and relevant exchanges of information are primordial. |
| **10..** | **Communication.** The Associate is expected to write monthly progress reports and prepare executive summaries and other reports for the Local Management Committee (LMC) meetings. Within the limits of commercial confidentiality, the Associate will have the opportunity to deliver papers at conferences and will be expected to co-author articles in peer-reviewed international publications. Excellent written and oral communication skills are therefore important. |
|  | The Associate will be an employee of the University of Bath and based at the Company for most of the time.  |
| You will from time to time be required to undertake other duties of a similar nature as reasonably required by your line manager. You are required to follow all University policies and procedures at all times and take account of University guidance.  |

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**Person Specification**

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| **Criteria** | **Essential** | **Desirable** |
| **Qualifications** |  |  |
| A PhD, or Master's degree with an equivalent level of experience in one of these areas: Electronic and Electrical Engineering, Computer Science or Physics  | **✓** |  |
| **Experience/Knowledge** |  |  |
| Ability to use project management principles and techniques to schedule the delivery of a multi-party product design (including working with sub-contractors).Experience and proficiency designing, implementing, and debugging digital systems implemented around embedded processors or microcontrollers.Practical experience of having adapted complex algorithms into a form suitable for efficient execution on embedded devices. Knowledge and experience of signal processing techniques and algorithms, ideally relevant to image or video applicationsKnowledge of scientific programming language skills (e.g. Matlab or R).Have knowledge and experience of advanced digital system design and simulation including FPGA/VHDL, Digital Signal Processors and data acquisition circuits.Experience of developing complex algorithms in the form of computer software.Have knowledge and experience of low noise analogue design.Have an understanding of flow parameters, flow-metering and basic fluid mechanicsHave an understanding of waste water management and water processesStrong software background and previous industrial or research project experience in inverse problems, tomographic techniques, flow imaging and/or complex signal processingEvidence of having project managed a project whether in an industrial or graduate/undergraduate setting would be advisable. | **✓****✓****✓****✓****✓** | **✓****✓****✓****✓****✓****✓****✓** |
| **Skills** |  |  |
| Excellent written and verbal communication skills (proven experience of writing reports, giving presentations, interacting with customers or other third parties communicating complex technical information to stakeholders at all levels).Teamwork and motivation: experience of working as part of a multi-disciplinary team.Ability to manage time critical projects to agreed plans and specificationsAbility to conceptualise and understand the commercial imperative for the projectExcellent problem solving skills | **✓****✓** **✓****✓****✓** |  |
| **Attributes** |  |  |
| Self-motivated: ability to “take ownership” of the project and bring it to successful completionAwareness of the principles of KTP and a willingness to embrace them | **✓****✓** |  |