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**Job Description**

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| **Job title** | Research Fellow |
| **Department/School** | **Mechanical Engineering** |
| **Job family** | Education and Research |
| **Grade** | 8 |
| **Reporting to** | Principal Investigator (PI) or Co-Investigator (CI) for area of research  |
| **Responsible for** | Research students and/or other research staff |
| **Location** | University of Bath premises  |

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| **Background and context** |
| This post will undertake research work within the Powertrain and Vehicle Research Centre (PVRC) for the APC Dynamic Analysis Modelling and Optimisation of GDI Engines (Dynamo) project. The project aims firstly to create novel experimental techniques to measure data that can improve the accuracy of dynamic models of each of the major sub-systems of an advanced gasoline engine. Secondly, it aims to use these dynamic models to provide a method for optimising the layout of the engine architecture. The Research Fellow will deliver the project work packages, take a management lead in the execution of tasks, conduct optimisation and modelling work of the engine concept, develop the relevant data to represent the engine hardware as necessary, create dedicated software tools for dynamic test planning and optimisation, design and build test stands for thermal testing of the engine friction and emission formation, and support engine testing as specified by the project plan. The Research Fellow will also support other PVRC research projects. |

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| **Job purpose** |
| To conduct high quality research including securing funding via research grants and/or fellowship applications and building a research group appropriate to the home department. |

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| **Main duties and responsibilities**  |
| **1** | To undertake high impact research in the APC Dynamic Analysis Modelling and Optimisation of GDI Engines (Dynamo) project. Develop research objectives, projects and proposals. Set standards by scoping projects and identifying whether the project will deliver on time and fulfil research grant proposals. |
| **2** | To publish in high quality peer-reviewed journals appropriate to the discipline.  |
| **3** | To attract external grant funding in order to support an independent research programme and establish a research group. |
| **4** | To contribute to the supervision, training and research of graduate students. Coach and support colleagues in developing their research techniques.  |
| **5** | To develop an external research profile and reputation and international research links through activities such as: * Overseas research visits
* Conference presentations
* Conference organisation
* Refereeing
* Public engagement activities
 |
| **6** | To promote and engage in interdisciplinary research activities. |
| **7** | To bring funding into the department through consultancy, exploitation of intellectual property rights, or other knowledge or technology-transfer activities (where appropriate). |
| **8** | Disseminate knowledge of research advances to inform the departmental teaching effort. |
| **9** | Provide input into wider departmental work and planning. |

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**Person Specification**

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| **Criteria** | **Essential** | **Desirable** |
| **Qualifications** |  |  |
| A PhD degree in subject area of direct relevance for the project, or an equivalent professional qualification (or equivalent standard for overseas applicants) | √ |  |
| **Experience/Knowledge** |  |  |
| Postdoctoral experience in a relevant research field | √ |  |
| Demonstrated significant depth and breadth of specialist knowledge of subject matter to contribute to research programmes and to the development of departmental research activities. | √ |  |
| Demonstrated expertise and knowledge in the latest developments in the field of research and in research design | √ |  |
| Demonstrated potential to attract research funds | √ |  |
| Published papers in high quality peer-reviewed journals | √ |  |
| Record of successful supervision of researchers | √ |  |
| Understanding of university research funding mechanisms |  | √ |
| Engagement with relevant national and international research communities |  | √ |
| **Skills** |  |  |
| Excellent presentation and communication skills (e.g. in publishing and presenting research, training and outreach activities) – both oral and written | √ |  |
| An inspiring research supervisor with broad interests across the subject area with effective people management skills | √ |  |
| Leadership, organisational and administrative skills  | √ |  |
| Strong expertise and ability in the preparation of research proposals, conducting individual research work and the dissemination results and impact | √ |  |
| Ability to organise and prioritise own and others’ workloads | √ |  |
| Ability to write research reports and to effectively disseminate outcomes | √ |  |
| High level of proficiency in experimental techniques (as appropriate to discipline) | √ |  |
| Proficiency in utilising IT to improve the effectiveness and efficiency of research work (as appropriate to discipline) | √ |  |
| **Attributes** |   |  |
| Versatility, innovation and the ability to work in interdisciplinary teams | √ |  |
| Commitment to excellence in research, and to providing the highest quality experience for students | √ |  |
| Commitment to safe working practices | √ |  |
| Commitment to working within professional and ethical codes of conduct | √ |  |
| Commitment to collaborative and interdisciplinary research | √ |  |