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**Job Description**

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| **Job title** | Research Associate |
| **Department/School** | **Mechanical Engineering** |
| **Job family** | Education and Research |
| **Grade** | 7 |
| **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 Associate will directly assist in the delivery of the project work packages, 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. |

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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** |
|  | Responsible to the PI/CI for (as appropriate to discipline):  |
| **1** | Conduct individual and/or collaborative research projects. Take a lead in the experimental design and execution of the project. Collect and analyse existing data related to the project using qualitative and/or quantitative techniques. |
| **2** | Writing up results of research and contributing to publishing of results in high-quality peer-reviewed academic literature. |
| **3** | Project management: e.g. timetabling and meeting project milestones; participating in regular discussions with collaborative partners. Liaise with key stakeholders/industrial partners and conduct focus groups. |
| **4** | Disseminating results of project as appropriate to the discipline e.g. by presentations at conferences, overseas research visits, public engagement activities.  |
| **5** | Participate regularly in group meetings and prepare and deliver presentations to project team, internal and external stakeholders or funders. |
| **6** | Assist with the supervision of graduate students and undergraduate project students and the assessment of student knowledge. |
| **7** | Continually update knowledge and understanding in field or specialism to inform research activity. |
| **8** | Identify sources of funding and provide assistance with preparing bids to funding bodies. Contribute to securing of own funding e.g. travel grants.  |
| **9** | Develop research objectives and proposals for own or joint research, with assistance of a mentor if required. |
| **10** | Disseminate knowledge of research advances to inform departmental teaching effort. |

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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 and significant relevant experience where applicable. | √ |  |
| **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 awareness of latest developments in the field of research and in research design | √ |  |
| Demonstrated potential to publish in high quality, peer reviewed journals | √ |  |
| Engagement with relevant national and international research communities |  | √ |
| **Skills** |  |  |
| Ability to prepare research proposals, to conduct individual research work and to disseminate results | √ |  |
| Ability to organise and prioritise own workload | √ |  |
| Ability to write research reports and to effectively disseminate outcomes | √ |  |
| Excellent oral, interpersonal and written communication skills | √ |  |
| Proficiency in experimental techniques (as appropriate to discipline) | √ |  |
| Proficiency in IT skills (as appropriate to discipline) | √ |  |
| **Attributes** |  |  |
| Commitment to working within professional and ethical codes of conduct | √ |  |
| Innovation and developing creative solutions  | √ |  |
| Enthusiasm and self-motivation. | √ |  |
| Organisation – able to plan and deliver work to meet required deadlines | √ |  |
| Tenacity – working to achieve own and team objectives and to overcome obstacles  | √ |  |
| Ability to be an effective team worker | √ |  |