

**Job Description: Associate Professor Enhanced Research**

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| **Faculty:** | Science and Engineering |
| **Department/Subject:** | Physics/Semiconductor Physics |
| **Salary:** | £56,021 to £64,914 per annum with USS benefits |
| **Hours of work:** | Full time, however applications for part time work will be considered |
| **Number of Positions:** | 1 |
| **Contract:** | This is a permanent position |
| **Location:** | This position will be based at both the Singleton and Bay Campuses |

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| **Introduction** | Swansea University is a research led university that has been making a difference since 1920, built on the twin pillars of excellence in research and in teaching.  The [Department of Physics](https://www.swansea.ac.uk/physics/) at Swansea University is part of the School of Biosciences, Geography and Physics (Head of School: Dr. Kevin Rees), and the School is one of four within the [Faculty of Science and Engineering](https://www.swansea.ac.uk/science-and-engineering/), led by Professor David Smith, PVC and Executive Dean and Professor Johann Sienz, DPVC and Deputy Executive Dean.  Swansea Physics wishes to appoint a Semiconductor Physicist at Associate Professor level to join the thriving research effort in semiconductor science at Swansea University’s new [Centre for Integrative Semiconductor Materials (CISM)](https://www.swansea.ac.uk/campus-development/developing-bay/key-projects-bay/cism/). We are seeking applications from highly talented candidates with an internationally acknowledged track record in areas of semiconductor physics, preferably aligned with the foci of CISM research and technology.  This is an exciting opportunity to join an ambitious and highly regarded Department, located on a beautiful beachfront campus in the city of Swansea. Swansea is a coastal city that is both picturesque and cosmopolitan, offering an excellent quality of life. Our stimulating, multidisciplinary environment enables and inspires excellence. |
| **Background** | The ideal candidate will have an outstanding research track record, with an ongoing vibrant research programme; with capability to substantially contribute to the state-of-the-art pure and applied research activities at CISM, and with the potential to eventually play a leading role in the delivery of the science and industry-facing aims of CISM .  The successful candidate will also display commitment to innovative teaching and curriculum development in Semiconductor Physics at the undergraduate level, integrating traditional aspects of solid state and semiconductor physics curriculum with cutting edge developments in the field, particularly leveraging developments within the Swansea physics Applied Materials research group. They will also contribute more broadly to the delivery of the undergraduate programme in Physics, through lab and lecture modules, and be actively involved in both undergraduate and postgraduate research supervision.  Swansea Physics has internationally recognised and leading [research groups](https://www.swansea.ac.uk/physics/research-and-impact/) in Applied Physics and Materials, the physics of Antimatter, and Theoretical Particle Physics and Cosmology. Within the Research Excellence Framework (REF), 2021, across experimental, applied, and theoretical physics 97% of our publications were classed as world leading and internationally excellent. Research impacts spanning cancer diagnostics, supercomputing, public engagement have substantially grown to 50% world leading. 100% of our Environment achieved world leading and internationally excellent ratings.  Our state-of-the-art facilities include: a low-energy positron beam with dedicated instrumentation for the study of positronium, a number of continuous-wave and pulsed laser systems, and scanning tunnelling, near-field optical and Raman microscopes. High-performance computing resources are available via clusters and dedicated supercomputers.  Staff members lead the ALPHA collaboration, based at CERN, whose goal is to create, trap and manipulate anti-hydrogen. Results of the ALPHA collaboration are regularly published in Nature, with their most recent groundbreaking research on effect of gravity on antimatter featured in all major news outlets worldwide.  The Applied Materials group based in CISM focuses on the physics of advanced materials with low embodied energy for applications in optoelectronics and bioelectronics. Particular areas of interest and expertise are next generation semiconductors, hybrid conducting electronic-ionic materials, photodetection and solar energy.  The Theoretical Physics group is one of the largest in the UK, with focus areas in mathematical physics, quantum fields, string theory and computational research including lattice QCD and QFT inspired approaches to machine learning.  Informal enquiries are welcome and can be directed to: Prof. Paul Meredith (Physics, CISM): [paul.meredith@swansea.ac.uk](mailto:paul.meredith@swansea.ac.uk) , Prof.Cinzia Giannetti (Materials & Manufacturing Research Institute lead): [c.giannetti@swansea.ac.uk](mailto:c.giannetti@swansea.ac.uk) , and Heads of Physics Department, Profs. Prem Kumar and Daniel Thompson: [Physics\_HoD@swansea.ac.uk](mailto:Physics_HoD@swansea.ac.uk) . |
| **Academic Career Pathways** | The Academic Career Pathways (ACP) scheme is designed to ensure that academic strengths whether in research, teaching, the wider student experience, leadership or innovation and engagement, are all appropriately recognised, developed, valued, and rewarded. There are three enhanced academic strands: Enhanced Teaching and Scholarship; Enhanced Research; and Enhanced Innovation and Engagement.  For more information on Academic Career Pathways, please click [here](https://www.swansea.ac.uk/personnel/current-staff/academic-career-pathways/). These provide indicative performance levels for all academic staff which will be used throughout the recruitment process. Where there are numeric indicators these will be considered in light of the stage of career, hours of work and other commitments. This may be personal circumstances or work related activities outside of academia such as in industry or a clinical setting. You are very welcome to provide any relevant individual circumstances such as career breaks, any periods of leave or secondment or any other absences, which should be taken into account and how these have had an impact on your career development. |
| **Main Purpose of Post: Enhanced Research** | 1. Research Outputs and Activity: Play a significant role in the strategic direction and development of the research area, sustain a track record of research outputs and their dissemination in high quality publications or other media. 2. Research Projects and Grants: Obtain significant research funding or other resources to underpin research with responsibility for developing and leading a major programme of individual or collaborative research. 3. Esteem: Achieve external recognition as an established authority within the discipline, contributing to the wider academic or professional community. 4. Postgraduate Research Student Supervision and Development: Sustaining a record of PhD supervision and completion. |
| **Management** | 1. Contributing to our Activities: Take part in formulating Faculty or University decisions and contributing to activities beyond the immediate research, teaching or scholarship commitments. 2. Participating in Professional Activities: Engage with professional activities related to the discipline through networking at conferences or involvement in external groups. 3. Managing Self and Others: Support and enable the development of colleagues, students and/or yourself. |
| **Teaching and Scholarship** | 1. Teaching Delivery and Review: Effective delivery of teaching, assessment and quality assurance of modules or other equivalent components of the taught portfolio. Review course content and materials, and develop, design and update materials in compliance with quality standards. 2. Teaching Innovation and Impact: Teaching practice based innovation which is up to date and informed by research or professional practice. 3. Advancing and Applying Practice: Responsibility for advancing personal teaching practice. |
| **General Duties** | 1. Promote equality and diversity in working practices and maintain positive and collaborative working relationships 2. Conduct the job role and all activities in accordance with safety, health and sustainability policies and management systems, in order to reduce risks and impacts arising from the work activity 3. Ensure that risk management is an integral part of any decision making process, by ensuring compliance with the University’s Risk Management Policy. |

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| **Person Specification Criteria** | | **Typically evidenced by:** | |
| **Qualifications** | | | |
| 1. A PhD in a relevant subject area or a degree and relevant professional experience or qualification | | *Chartered membership of professional body, Medical registration etc.* | |
| 1. Recognised teaching qualification that would lead to Fellowship of the Higher Education Academy (HEA) or a commitment to achieve this | | *If you do not have a recognised teaching qualification then evidence is required of a commitment to work towards Fellowship of the Higher Education Academy (HEA) or equivalent.* | |
| **Enhanced Research** | | | |
| 1. A sustained track record of research outputs in high quality publications or other media showing a continuing upward trajectory in the quality of research outputs. | | *One world leading and three internationally excellent outputs in the last five years.* | |
| 1. Success in obtaining significant funding or other resources to underpin original research, with responsibility for developing and leading a major programme of individual or collaborative research. | | *The successful applicant at AP should be able to demonstrate a track record securing research funding as PI* | |
| 1. External recognition as an established authority within the discipline, contributing to the wider academic or professional community. | | *Evidence of international peer recognition over the last 5 years.*  *A record of sustained conference participation that equates to attending one conference with national or international reach each year as an invited speaker.* | |
| 1. A sustained record of PhD supervision and completion. | | *The successful applicant at AP can demonstrate significant experience playing a lead role in the supervision of PhD students* | |
| **Core Teaching** | | | |
| 1. Evidence of or ability to undertake effective delivery of teaching, assessment and review of modules or other components of the taught portfolio. | | *- a good teaching feedback and/or through improved progression or retention*  *- Acting as an effective tutor or student project supervisor with successful outcomes.*  *- a commitment to innovative teaching and CPD* | |
| **Core Management** | | | |
| 1. Taking an active part in decisions and activities in an academic unit or institution, beyond own research and teaching commitments. | | *Examples showing personal contribution and impact.* | |
| ***Subject Specific*** | | | |
| 1. Subject specific criteria | | *Expertise and internationally recognized track record in fundamental and / or applied research in semiconductor and advanced materials physics with specific preference for expertise in* ***molecular semiconductors, next generation semiconductor platforms and heterogeneous integration****. Knowledge of semiconductor technology supply chains and of the global context of the semiconductor industry. Ability to teach semiconductor physics to an advanced undergraduate and masters-level.* | |
| **Welsh Language** | | | |
| Level 1 – ‘a little’ (you do not need to be able to speak any welsh to apply for this role)  *e.g. pronounce Welsh words, place names, department names. Able to answer the phone in Welsh (good morning / afternoon). Able to use of learn very basic every-day words and phrases (thank you, please, excuse me). Level 1 can be reached by completing a one-hour training course.*  For more information about the Welsh Language Levels please refer to the Welsh Language Skills Assessment web page, which is available [here](https://www.swansea.ac.uk/welsh-language-standards/compliance/recruitment/). | | | |
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