



THE POST

College:	College of Engineering, Mathematics and Physical Sciences
Post:	Postdoctoral Research Fellow – EPSRC SYMETA
Reference No:	S52056
Grade:	F
HERA:	RFEL
Reporting To:	Prof Alastair Hibbins

The above full-time post is available on a fixed term basis from 3rd December 2018 until 28th February 2021 in the College of Engineering, Physical Sciences and Mathematics.

Job Description

A Postdoctoral Research Fellow to participate in the EPSRC Grand Challenge “Synthesizing 3D Metamaterials for RF, microwave and THz applications (SYMETA)”.

The experimental study of truly three-dimensional metamaterials and their exploitation as devices has been rather limited to date, with researchers around the globe taking the easier path of studying layered materials and 2D meta-surfaces. The role-holder’s primary responsibility on the SYMETA project is therefore a challenging one - to design, model and characterise both individual 3D meta-atoms, and collections of these building blocks to form metamaterials. These metamaterials will be fabricated and developed by our collaborators to give end-users the electromagnetic responses they require, for a wide range of communication, electronics, energy and defence applications.

Main purpose of the job:

To undertake a wide-range of research, including analytical and numerical modelling and experimental work. The successful applicant will design of novel microwave or RF meta-atoms, predict their electromagnetic character and understand their performance once arranged into metamaterials. He or she will work with our academic collaborators to assess the feasibility of these structures for device application within the constraints of available materials and fabrication processes, and to experimental characterise their behaviour once manufactured.

Main duties and accountabilities:

1. To undertake research as appropriate to the field of study. The responsibilities may include all or some of the following:
 - Acting as principal investigator on research projects;
 - Developing research objectives, projects and proposals;
 - Conducting individual or collaborative research projects;
 - Identifying sources of funding and contributing to the process of securing funds;
 - Extending, transforming and applying knowledge acquired from scholarship to research and appropriate external activities;
 - Writing or contributing to publications or disseminating research findings using media appropriate to the discipline;
 - Making presentations at conferences or exhibiting work in other appropriate events;
 - Assessing, interpreting and evaluating outcomes of research;
 - Developing new concepts and ideas to extend intellectual understanding;

- Resolving problems of meeting research objectives and deadlines;
 - Developing ideas for generating income and promoting research area;
 - Developing ideas for application of research outcomes;
 - Deciding on /following research programmes and methodologies, often in collaboration with colleagues and sometimes subject to the approval of the head of the research programme on fundamental issues.
2. To contribute to teaching and learning programmes in the School and to supervise postgraduate research students.
3. To act as research team leader including:
- Mentoring colleagues with less experience and advising on their professional development;
 - Coaching and supporting colleagues in developing their research techniques;
 - Supervising the work of others, for example in research teams or projects;
 - Developing productive working relationships with other members of staff;
 - Co-ordinating the work of colleagues to ensure equitable access to resources and facilities;
 - Dealing with standard problems and help colleagues to resolve their concerns about progress in research.
4. To routinely communicate complex and conceptual ideas to those with limited knowledge as well as to peers using high level skills and a range of media and to present the results of scientific research to sponsors and at conferences.
5. As determined by the nature of the project and at the direction of the PI, to plan, co-ordinate and implement research programme activity including:
- Managing the use of research resources and ensuring that effective use is made of them;
 - Monitoring and reporting on the use of research budgets;
 - Helping to plan and implement commercial and consultancy activities;
 - Where appropriate, to plan and manage own consultancy assignments.

This job description summarises the main duties and accountabilities of the post and is not comprehensive: the post-holder may be required to undertake other duties of similar level and responsibility. Please visit the Human Resources website to view the Research Fellow role profiles.

Person Specification

Competency	Essential	Desirable
Attainments/Qualifications	PhD or equivalent (or near graduation) in a field of study appropriate for working with current researchers in the Electromagnetic and Acoustic Materials Group.	Evidence of an excellent track record of research publications in microwaves, photonics, acoustics, magnetics, metamaterials. or related fields
Skills and Understanding	Possess sufficient knowledge of skills and understanding to effectively participate in relevant research programmes and methodologies.	Knowledge of relevant skills and understanding relevant to the broader SYMETA project Able to identify sources of funding, generate income, obtain consultancy projects, or build relationships for future activities.
Prior Experience	Successful completion of research projects that involve experimental and analytical/numerical methods.	Experience of managing research projects and research teams. Experience of mentoring, teaching and supervision of post graduate or undergraduate researchers. Experience of external

		collaboration with industry or external academia. Ability to participate effectively in conferences and research meetings to present progress and outcomes.
Behavioural Characteristics	Excellent written and verbal communication skills. Ability to work collaboratively on research projects	Enthusiasm to engage in personal and career development through training and taking on new responsibilities.
Circumstances	Willing to work flexibly to achieve project demands.	Flexibility to undertake short research stays at academic partners Immediate start

Informal Enquiries

Before submitting an application you may wish to discuss the post further by contacting Alastair Hibbins, Professor of Metamaterial Physics, email a.p.hibbins@exeter.ac.uk

Terms & Conditions

Our Terms and Conditions of Employment can be viewed [here](#).

Further Information

Please see our [website](#) for further information on working at the University of Exeter.