

## Candidate Information

<b>Position:</b>	Research Fellow in Plasmonic Materials
<b>School/Department:</b>	School of Mathematics and Physics
<b>Reference:</b>	19/107560
<b>Closing Date:</b>	Tuesday 16 July 2019
<b>Salary:</b>	£33,199 per annum
<b>Anticipated Interview Date:</b>	Wednesday 24 July 2019
<b>Duration:</b>	2 years 7 months

### JOB PURPOSE:

To act as a post-doctoral research fellow on a Seagate Technology / Royal Academy of Engineering funded project on advanced materials for data storage within the Centre for Nanostructured Media in the School of Mathematics and Physics. The post holder will assist in the development of a research programme on the identification and evaluation of plasmonic materials with high thermal robustness for heat assisted magnetic recording and other high temperature applications. The role will involve close interaction and collaboration with Seagate Technology.

### MAJOR DUTIES:

1. Undertake a directed programme that combines materials selection techniques (e.g. literature, modelling, simulation) to identify candidate plasmonically active materials for heat assisted magnetic recording.
2. Lead and/or participate in materials synthesis for candidate plasmonic materials.
3. Lead and/or participate a plasmonic characterisation programme using a variety of optical probes (Ellipsometry, ATR, SNOM etc.)
4. Lead and/or participate in characterisation of the materials structural characterisation using electron-microscopy techniques (SEM, AFM, XRD, HRTEM & FIB).
5. Interact and work with R&D staff from Seagate Technology in the delivery of the programme objectives and this will involve spending time at the Seagate Technology Springtown site.
6. Preparation and presentation of results in video conferencing with project partners and at national/international conferences and workshops as required or as opportunity arises.
7. Contribute to writing of papers for publication and of reports as necessary.
8. Identify further funding opportunities to consolidate the group's research and prepare outline proposals.
9. Assist with project-related outreach activities as required.
10. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

### Planning and Organising:

1. Ability to undertake day-to-day responsibility in running dedicated laboratory facilities, including own day-to day activity within framework of the agreed research programme.
2. Plan the use and scheduling of research resources, laboratories and workshops where appropriate with particular emphasis on forward planning ability in relation to technical support.
3. Plan details of research programme, particularly in relation to design and provision of samples within the partnership.
4. Ability to plan and organise in order to meet reporting/dissemination deadlines.
5. Coordinate and liaise with other members of the research group over work progress.

### Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff and any students who may be assisting with research.
3. Manage consumables budget within project, including regular interaction with/briefing of QUB project leader.

**Internal and External Relationships:**

1. Interact on a regular basis with staff and students working on the project and cognate programmes and build good working relationships.
2. Assist with supervision of and liaise with PhD students and project student in the lab as required.
3. Establish good working relationship with technical and other support staff.
4. Undertake short periods of work based at the Seagate Technology (Springtown) R&D department.
5. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.

**ESSENTIAL CRITERIA:**

1. Have or be about to obtain a relevant PhD.
2. At least 3 years relevant research experience in plasmonics research.
3. Experience in the synthesis/fabrication of plasmonic materials/structures.
4. Experience in simulation of optical response and/or characterisation of plasmonic materials.
5. Good publication/presentation record commensurate with stage in career.
6. Ability to contribute to broader management and administrative processes.
7. Ability to communicate complex information clearly.
8. Demonstrable intellectual ability.
9. Ability to assess and organise resources.
10. Ability and willingness to collaborate in satellite projects.
11. Ability and willingness to work as part of a team.
12. Ability and willingness to travel to partner institutions and scientific meetings.
13. This is a bi lateral project with Seagate Technology, and it is expected that the person taking up this job will work closely with the company, and other partners as necessary, including research visits and project meetings.

**DESIRABLE CRITERIA:**

1. A PhD in plasmonic materials synthesis/characterisation.
2. Experience in optical characterisation of thin film plasmonic materials e.g. ellipsometry/ATR.
3. Experience in synthesis of thin film plasmonic materials.
4. Expertise in plasmonic materials design/selection via simulation techniques e.g. ab-initio etc.
5. Experience in writing for high quality scientific journals.
6. Experience of leading or working with other researchers (PhDs and PDRAS) in a team.
7. Experience in managing resources/facilities.
8. Evidence of contribution to outreach / engagement programmes.
9. Evidence of conference/meeting presentations of research findings.
10. Ability to communicate effectively with other disciplines.
11. Ability and willingness to build contacts and participate in internal and external networks.