

## Candidate Information

<b>Position:</b>	Early Career Researcher (MSCA ESR 13)
<b>School/Department:</b>	Institute for Global Food Security
<b>Reference:</b>	20/108088
<b>Closing Date:</b>	Monday 24 February 2020
<b>Salary:</b>	£31,281.02 (with pension) per annum (there is also an additional mobility allowance and a family allowance to be determined upon appointment).
<b>Anticipated Interview Date:</b>	Monday 9 March 2020
<b>Duration:</b>	36 months

### JOB PURPOSE:

Early Stage Researcher (ESR), (PhD Student) who will be an active member of a research team in the MONPLAS "The training of early stage researchers for the development of technologies to MONitor concentrations of micro and nanoPLASTics in water for their presence, uptake and threat to animal and human life" Innovative Training Network (ITN). The ESR will undertake research and undergo training in the framework of the MONPLAS project. The ESR will be funded for 36 months through the prestigious Marie Skłodowska-Curie Actions (MSCA) ITN EID programme; an initiative by the European Commission to train creative, entrepreneurial, innovative researchers, who are able to face current and future societal challenges, and will convert knowledge and ideas into products and services for the economic and social benefit of Europe.

The successful candidate will work as an early stage career researcher (ESR) to conduct research on the development of a low cost platform exploiting vibrational spectroscopies for rapid and sensitive detection of micro- and nanoplastics at the Queen's University of Belfast. To allow ultra-sensitive detection, a range of different plasmonic nanostructures fabricated by micro- and nanofabrication techniques will be used as sensing elements, and can be incorporated into microfluidics and lab-on-a-chip components to facilitate sample pre-treatments, separation, and detection. The platforms will be fully validated and assessed against benchmarking techniques such as mass spectroscopy. The project will equip the ESR with skills in materials synthesis and characterization, system integration, assay development and validation.

### MAJOR DUTIES:

1. Carry out the research and training activities specified by a personal career development plan (PCDP).
2. Conduct research in interdisciplinary aspects of vibrational spectroscopies for rapid and sensitive detection of micro- and nanoplastics.
3. Undertake mandatory training programs and secondments at both Queen's University Belfast (UK) and the appropriate partner.
4. Actively participate in training activities and submit reports in fulfilment of the project requirements.
5. Participate in outreach and dissemination activities promoting the MONPLAS ITN and the Marie Skłodowska-Curie Actions (MSCA) programme including the use of social media, video-diaries, newsletters, etc.
6. Prepare regular progress reports on the performed research and training activities and present the research outcomes at meetings, project workshops, and to external audiences to disseminate and publicise research findings.
7. Work closely with academic and industrial collaborators and facilitate knowledge transfer between the MONPLAS beneficiaries.
8. Study and follow the technical literature including academic papers, textbooks and patents to keep abreast with the state-of-the-art in the project topical area.
9. Record, analyse and write up results of research work and contribute to the production of research reports and publications.
10. Carry out routine administrative duties as requested, e.g. arranging research programme group meetings, maintaining research programme group website/social media, contributing to organisation of MONPLAS project training workshops and events.
11. To work towards being awarded a Doctor of Philosophy (PhD), following the QUB regulations for research degrees.

### Planning and Organising:

1. Contribute to the PCDP development and provide regular updating of this plan.

2. Manage own time and meet agreed deadlines.
3. Plan own day-to-day activity within the framework of the agreed research and training programme.
4. Contribute to the planning of research and training activities, reports and publications.
5. Actively contribute to organisation of outreach activities events such as MONPLAS workshops.

#### **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 involved with research and training.

#### **Internal and External Relationships:**

1. Liaise with research colleagues and support staff on routine matters.
2. Make internal and external contacts to develop knowledge and understanding and form relationships for future collaboration.
3. Attend and contribute to relevant meetings and training events.
4. As an MONPLAS MSCA ITN ambassador, contribute to the project outreach programmes by establishing links with local community groups, industries etc.

#### **ESSENTIAL CRITERIA:**

1. Have or about to obtain a 1st class or 2:1 Honour Degree or equivalent in materials science, micro- and nano-engineering, analytical chemistry, chemical engineering, applied physics or related disciplines.
2. Experience of having carried out research in materials science, micro- and nano-engineering, analytical chemistry, chemical engineering or applied physics.
3. Strong analytical and problem-solving skills.
4. Ability to logically conceptualise and summarise the research findings.
5. Advanced analytical skills.
6. Over the 3-year project, be willing and able to spend 66% of the time in QUB (UK) and 33% of the time in the appropriate industrial/academic partner.
7. Be in the first 4 years (full-time equivalent) of their research careers and not yet have been awarded a doctorate. This 4-year period is measured from the date of obtaining the degree which would formally entitle to embark on a doctorate.
8. Must not have resided or carried out their main activity in the UK for more than 12 months in the 3 years immediately prior to their selection for this post.
9. Be willing, eligible and qualified for enrolment in the PhD programme within the Institute for Global Food Security at QUB.

#### **DESIRABLE CRITERIA:**

1. Masters qualification in a relevant subject.
2. Evidence of successful research experience (i.e. publications in scientific journals).
3. Employment, placements or work experience in a commercial research environment relevant to MONPLAS.

#### **ADDITIONAL INFORMATION:**

ELIGIBILITY INFORMATION: This document outlines the eligibility information relating to the MONPLAS, in compliance with the rules set out by the European Commission.

#### **Mobility Rule**

1. The researcher must not have resided or carried out their main activity (work, studies etc.) in the UK for more than 12 months in the 3 years immediately prior to their recruitment.
2. Short stays (e.g. holidays) are not taken into account.
3. Eligible researchers must not have spent more than 12 months in the 3 years prior to the date of recruitment [1] in the appointing organisation (Queen's University Belfast, QUB).
4. Refugees: procedures for obtaining refugee status under the Geneva Convention are not counted as a period of residence in the country or organisation (i.e. are not included in (1) or (3) above).

#### **Eligible Researchers:**

1. Early stage researchers (ESRs) shall at the date of recruitment by QUB be in the first four years [2] (full-time equivalent research experience) of their research careers and not have been awarded a doctoral degree.
2. Any nationality.

ADDITIONAL INFORMATION: For additional information about the More information can be found on the MONPLAS website:  
<https://www.monplas.eu>

[1] The “date of recruitment” refers to the first day of employment of the researcher within MONPLAS.

[2] Measured from the date when the degree was awarded which would formally entitle the applicant to embark on a doctorate, either in the awarding country or the country in which the ESR is recruited, regardless of whether a doctorate is or was ever envisage