Research Fellow (Chemistry)

School of Natural and Computing Sciences

Closing date: 29 March 2022
Interview date: To be confirmed
Reference number: NCS194R
We are seeking to recruit a suitably qualified chemist or chemical engineer with a strong background in plasma catalysis or electrochemistry to join a vibrant research team under the leadership of Professor Angel Cuesta and Dr. Panagiotis Kechagiopoulos. This post is supported by an EPSRC Adventurous Energy Research grant which aims at identifying conditions under which the electrochemical reduction of CO$_2$ to useful products can be achieved efficiently and with good selectivity using a non-thermal plasma as electrolyte. The project will also involve the design of cells and methodologies to record infrared reflectance, UV-vis reflectance and optical emission spectra during the electrochemical experiments, with the aim of identifying intermediates and products of the reaction, thereby allowing to identify reaction mechanisms and product distributions and yields.

The successful candidate will be responsible for setting up and developing cells and methodologies for electrochemical experiments in non-thermal plasmas and for in-situ characterisation of the electrode-plasma interface using infrared spectroscopy and other optical spectroscopies. The ideal candidate will have experience in plasma catalysis. Additional experience with the application of in-situ vibrational and/or optical spectroscopies for surface and plasma characterisation will be valued.

Training will also be provided to enable the candidate to extend and complement their existing skills. This is a full-time post for a fixed term of 24 months.

• Taking a leading role in setting up and developing electrochemical cells and methods in non-thermal plasmas.
• Contributing to the design of in-situ methodology for spectroscopic characterization of the electrode-plasma interface.
• Contributing to build a lab prototype of a plasma electrolyser converting CO$_2$ to hydrocarbons.
• Maintaining accurate and up-to-date records to document the research project and its progress, and publishing high-quality publications.
• Reporting regularly on progress, both written and oral, to the PIs and the collaborators.
• Attend scientific meetings to present outcomes from the research project in both oral and poster presentations.
• Visit collaborators to attend progress meetings.
• Provide support and assistance in the supervision of PhD students in the solid-state chemistry group.
We seek a highly motivated and enthusiastic individual to conduct pioneering electrocatalysis experiments in non-thermal plasmas.

The candidate is expected to have a PhD, or about to submit their thesis, in Chemistry, Chemical Engineering or Physics with a strong background in either plasma catalysis, electrochemistry or the application of vibrational/optical spectroscopy to the study in-situ of surfaces.

The candidate must be able to work independently and as part of a team. Self-motivation and an excellent work ethic are also essential for this post. Good interpersonal, organisational, and communication skills are desirable to ensure efficient working within the wider team.

**TERMS OF APPOINTMENT**

Salary will be at the appropriate point on Grade 6, £34,304 - £35,326 per annum, and negotiable with placement according to qualifications and experience. Consideration will be given to individuals in the final stages of their PhD, who will be appointed on Grade 5 (£28,756 - £32,344 per annum) as a Research Assistant and assimilated to Grade 6 upon completion of their PhD.

As this post is funded by EPSRC it is available for 24 months.

Any appointment will be made subject to satisfactory references and probation period.

For further information on various staff benefits and policies please visit [www.abdn.ac.uk/staffnet/working](http://www.abdn.ac.uk/staffnet/working)

This role is based in the UK and as such the successful candidate will be required to live and work in the UK.

Should you require a visa to undertake employment in the UK you will be required to fulfil the minimum points criteria to be granted a Certificate of Sponsorship under the requirements of the Skilled Worker visa. At the time an offer of appointment is made, you will be asked to demonstrate that you fulfil the criteria in respect of qualification and competency in English. For research and academic posts, we will consider eligibility under the Global Talent visa.

Please do not hesitate to contact Grant Rae, HR Adviser (grant.rae@abdn.ac.uk) for further information.

**AT A GLANCE**

**SALARY:**

Grade 6

£34,304 - £35,326 per annum

**HOURS OF WORK:**

Full-Time, 37.5 hours per week

**CONTRACT TYPE:**

Funding Limited for 24 months

**LOCATION:**

Aberdeen
# Person Specification

## Education/Qualifications

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<th>ESSENTIAL</th>
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<tr>
<td><strong>Academic, technical and professional education and training</strong></td>
<td>• Experience modifying or building up instrumentation</td>
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<td>• PhD in Plasma Catalysis, Electrochemistry, Surface Chemistry, or Surface Physics (or near completion)</td>
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<td>• Knowledge and experience with surface vibrational spectroscopy (or similar)</td>
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<td>• Proven commitment to carrying out research to the highest standards of excellence</td>
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## Work and Other relevant experience (including training)

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<tr>
<td><strong>e.g. Specialist knowledge, levels of experience, supervisory experience, research</strong></td>
<td>• Experience of working in multidisciplinary team</td>
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<td>• Demonstrable computer skills (database searching, design, presentation packages)</td>
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<td>• Excellent written skills with experience in preparing manuscripts for publication in peer-reviewed journals</td>
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## Personal qualities and abilities

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<td><strong>e.g. initiative, leadership, ability to work on own or with others, communication skills</strong></td>
<td>• Excellent communication skills</td>
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<td>• Ability to work independently and collaboratively</td>
<td>• Excellent time-management and organisational skills</td>
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<td>• Self-motivated and enthusiastic, with a desire to achieve excellence</td>
<td>• Proven commitment and ability to keep abreast of contemporary developments in scientific fields relevant to the project</td>
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<td>• Hard-working and methodical</td>
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<td>• Capable of producing written and verbal reports in a timely manner</td>
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<td>• Desire to learn new skills</td>
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## Other

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<td><strong>e.g. special circumstances (if any) appropriate to the role such as unsocial hours, travelling, Gaelic language requirements etc.</strong></td>
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The University of Aberdeen is a broad based, research intensive University, and we put students at the centre of everything we do. Outstanding in a wide range of discipline areas, Aberdeen is credited for its international reach and commercialisation of research ideas into spin out companies. The University has over 16,000 matriculated students and 3,600 staff representing 130 nationalities. We encourage bold thinking, creativity and innovation, and we nurture ambition with many opportunities for professional and personal development in an inclusive learning environment which challenges and inspires.

CURRENT CONTEXT

The University continues to build on its achievements. Underpinning our high performance and significant growth is a £100m investment in Aberdeen’s estate which will include the completion of a new Science Teaching Hub, the regeneration of the historic King’s Quarter and a new Business School building. The University has also invested in 50 new academic posts and in 2020 launched five interdisciplinary, cross-institution Research Centres that will catalyse world-leading research in our areas of strength. Our five Interdisciplinary Challenges are: Energy Transition; Social Inclusion and Cultural Diversity; Environment and Biodiversity; Data and Artificial Intelligence; and Health, Nutrition and Wellbeing.

ABERDEEN 2040

On our 525th anniversary as a University we launched Aberdeen 2040, our strategic vision for the next 20 years. Four strategic themes will shape our learning and discovery, underlined by 20 commitments we have made against each theme:

- **Inclusive**
  We welcome students, staff and partners from all backgrounds, organisations and communities. We value diversity.

- **Interdisciplinary**
  We innovate in education and research by generating, sharing and applying new kinds of knowledge. We learn together.

- **International**
  We connect with others and extend our networks and partnerships around the world. We think across borders.

- **Sustainable**
  We understand and nurture our environment, and take care of our resources, including our people and finances. We work responsibly.
OUR EDUCATION
Recognised as the Scottish University of the Year in the Times and Sunday Times Good University Guide 2019, we remain true to our roots as an ancient Scottish university, combining breadth and depth in our degree programmes and drawing strength from the quality of our research. Our flexible curriculum encourages students to grow as independent learners and therefore to thrive as graduates in the diverse workplaces of the future. Our education is open to all and we are setting ambitious targets to further widen access.

OUR RESEARCH
Researchers at the University of Aberdeen have been at the forefront of innovation and excellence throughout the centuries, generating insights in medicine, science, engineering, law, social sciences, arts and humanities. This research has contributed to five Nobel prizes as well as other awards such as the Queen’s Anniversary prize. Our research is intellectually rigorous working within our established areas of excellence as well as new methods of enquiry. We will continue to generate new knowledge addressing economic and societal issues with ambition and imagination, ensuring that it is globally excellent and locally relevant.

INTERNATIONAL
Aberdeen is increasing its international presence, positioning the University as a global organisation and building on established global partnerships in e.g. Qatar, China, North America, Europe. We feature in the top 50 institutions worldwide for international students and have been named 31st in the world for International Outlook. The University of Aberdeen is proud to be the first UK University to deliver programmes on a dedicated campus in Qatar in partnership with AFG College. Phase 1 has successfully recruited over 600 students and Phase 2 will see the creation of a substantially larger campus, with capacity for at least 5,000 students and research activity. For further information on our Qatar campus visit www.abdn.ac.uk/qatar.

IMPACT
Our dedication to building a sustainable future is reflected in the Times Higher Education Impact Rankings 2021 where we were ranked in the top 60 Universities worldwide for positive impact on society.

In 2020 the University signed the United Nations Sustainable Development Goals accord, solidifying our commitment to developing the world in a sustainable way. In 2021 we were listed in the global Top 50 for 6 of these goals and in the UK Top 20 for all 17.

1 QS World University Rankings 2022
2 Times Higher Education World University Rankings 2022
3 Times Higher Education Impact Rankings 2021
ABERDEEN AND ABERDEENSHIRE

Scotland’s third largest city, Aberdeen sits on the coast between the mountains of Aberdeenshire and the stunning North Sea coastline. The Aberdeen City region is a can-do place that is actively investing, at scale, in its future.

Renowned as a Global Energy Hub, Aberdeen is a vibrant, entrepreneurial region, home to a unique mix of business opportunities and specialist skills across various sectors including energy, technology, life sciences and food & drink. More than 20% of Scotland’s top businesses are located in this region which is taking great strides to ensure that it continues to compete on a world stage. Investments of more than £10 billion of public and private infrastructure is due to be delivered before 2030, marking an exciting time to be part of a genuine world-class location.

Built from sparkling local granite Aberdeen has earned the name of the Silver City. As the energy capital of Europe, Aberdeen nevertheless retains its old-fashioned charm and character making it an attractive place in which to live, work and study. Due to its global business and international energy industry credentials, Aberdeen is well served by local and national transport infrastructure with excellent rail networks that run both North and South of Scotland and the rest of the UK. It also acts as an international travel hub. Flying time to London is just over one hour with regular daily flights and serves international travel to European centres such as Amsterdam (Schiphol) and Paris (Charles de-Gaulle) as well as flights to other European destinations.

The City and the surrounding countryside provide a variety of urban, seaside and country attractions. Aberdeen has first class amenities including His Majesty’s Theatre, Music Hall, Art Gallery, the P&J Arena, Museums, and Beach Leisure Centre. The City is framed by its accessible beach front which is within a short walk of the city centre and there are an array of activities available across the region such as hill walking; mountaineering; sailing; surfing; salmon, trout and sea fishing; golf; sailing; surfing and windsurfing. The surrounding countryside, known as Aberdeenshire, is also one of Scotland’s most appealing regions. Royal Deeside and the Cairngorms National Park are within easy access of the city, and there are a variety of towns and villages scattered along the coastline.

Aberdeen has ranked consistently highly in nationally recognised quality of life surveys, and was recently named the happiest city in the UK to live and work in.

To find our more visit www.visitabdn.com

4 Shawbrook Bank Happiest Cities Index 2021
EQUALITY AND DIVERSITY

The University values a diverse working environment and recognises the benefits this can bring. The University is keen to receive applications from individuals from across all of the equality protected characteristics (age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, sexual orientation).

The University supports opportunities for flexible working for a range of reasons and has policies in place to facilitate this. The policies can be found at https://www.abdn.ac.uk/staffnet/working-here/flexible-working--5607.php.

The University’s commitment to gender equality has been recognised through the achievement of an Athena SWAN Bronze award at an institutional level and across all its subject areas. The University is also a Stonewall Diversity Champion to further LGBT+ equality.

The University is signed up to Advance HE’s Race Equality Charter, affirming the University’s commitment to the charter’s aim of improving the representation, progression and success of minority ethnic staff and students within higher education.

Candidates who are British Sign Language (BSL) users can contact us directly by using contact SCOTLAND-BSL.

The University is delighted to be accredited as a Disability Confident employer and strives to ensure that disabled staff and students have the opportunity to work and study in an inclusive, accessible and supportive environment.

HOW TO APPLY

Online application forms are available at www.abdn.ac.uk/jobs

The closing date for receipt of applications is 29 March 2022

Should you wish to make an informal enquiry please contact:

Professor Angel Cuesta Ciscar, Interim Head of the School of Natural and Computing Sciences
angel.cuestaciscar@abdn.ac.uk

Please do not send application forms or CVs to Professor Cuesta.

Please quote reference number NCS194R on all correspondence