Candidate Information Pack

Appointment of:

Professor of Chemical Engineering (Energy Storage)
The Faculty of Science, Agriculture and Engineering
The Post

The School of Engineering is recruiting a Professor of Chemical Engineering (Energy Storage). This is an exciting opportunity to join one of the leading Engineering Schools in the UK.

Engineering at Newcastle is truly pushing the boundaries of fundamental and applied chemical engineering into new and exciting applications such as the future of energy, sustainability, healthcare, advanced manufacturing, and the process industries. The Professor in Chemical Engineering would complement existing strengths and provide the breadth of expertise and leadership required to further establish Newcastle as a major centre for battery engineering and allied chemical engineering research.

Based within the Chemical Engineering discipline, but with an interdisciplinary and cross-faculty ambition, the appointee will contribute to the further development of our expertise in design, development and characterisation of batteries and other energy storage systems. They will complement our significant work on the fire safety and handling of lithium-ion batteries and further stimulate work on manufacturing, recycling, and reuse of large- and small-scale battery components. Integrating novel materials in this will be at the heart of addressing global challenges e.g., affordable, and durable renewable energy generation, conversion and storage technologies and environmentally friendly adhesives and sensors. The ability to correlate the structure and functionality of energy storage components, how they are made, and their end-of-life strategy is central to the successful and timely development of batteries and other devices for new energy storage applications. Battery manufacture is an emerging manufacturing strength in the region with the establishment of major industrial players such as Envision, BritishVolt, etc. and their future needs will provide a major driving force for the direction of the post. An increased focus on sustainable and responsive manufacture and recycling will be a major part of this.

Our current complement of staff highlights real research excellence and translational impact in the synthesis and modelling of new materials for energy, healthcare, information technology, construction, and environmental applications (including sustainable batteries). Focusing on material development and device engineering, this post will significantly increase research capability, expertise, and opportunities, collaboratively expanding the energy storage research area, including our Faraday Institution work, which will be focussing on the battery manufacture, recycling and reuse strategies necessary to support the emerging industrial processing of batteries in the region.

The Professor of Chemical Engineering will join the Advanced Materials and Electrochemical Engineering Science Group in developing advanced design and characterisation activities for energy storage devices across the University, with particular interest in further developing the capability through introducing new technology or extending electrochemical applications across the diverse chemical engineering field. The postholder would lead in obtaining new state of the art instruments, which are complementary to other existing techniques that can be used for in operando assessment of battery materials, manufacturing procedures, and recycling performance. The appointee will build research, innovation and skills development partnerships and develop the societal and business impact of their research.
Specific Responsibilities of Position

1. Leadership in research and scholarship in electrification and energy storage (broadly construed to include professional work as well as REF appropriate outputs) in the school in collaboration with the Directors of Discipline, professoriate, and specialist academic groups.

2. Growing the capability and international reputation for research and education excellence, and wider engagement, associated with the Advanced Materials and Electrochemical Engineering Science Academic Group and Chemical Engineering Discipline.

3. Leading the enhancement of interdisciplinary collaboration and impact across Schools by actively contributing to the development and leadership of the Centre of excellence in electrification. Pushing boundaries in materials characterisation to develop and complement existing experimental techniques as required.

4. Delivering innovative and high-quality teaching of energy storage knowledge and skills across a range of modules within Chemical Engineering programmes and School of Engineering more broadly, as required using appropriate delivery methods that create interest and enthusiasm amongst students.

5. Proactively engage in academic leadership roles to support the management, development, and enhancement of teaching, learning and research strategies within the School, Faculty and University.

6. Perform other duties as required by the academic group lead, Director of Discipline and/or Head of School.
# The Person

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<th>Qualifications</th>
<th>Essential or Desirable</th>
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<tr>
<td>1</td>
<td>An excellent first degree and PhD in a relevant field</td>
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<td>2</td>
<td>A Higher Education Teaching qualification or equivalent experience</td>
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## Knowledge, Skills and Experience

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<tr>
<td>1</td>
<td>A strong track record of publishing research outputs in internationally excellent and high impact academic conferences, and journals in areas of chemical engineering, and/or materials science</td>
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<td>2</td>
<td>Evidence of an excellent international reputation in the field of chemical engineering and/or materials science</td>
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<td>3</td>
<td>Experience of initiating, managing, and delivering successful multidisciplinary and/or multipartner projects.</td>
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<td>4</td>
<td>Evidence of attracting major research funding in areas relevant to chemical engineering and/or materials science</td>
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<td>5</td>
<td>Extensive track record of teaching at undergraduate and postgraduate level with evidence of developing and disseminating successful learning approaches</td>
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<td>6</td>
<td>Demonstrable PhD supervision capability and experience, from project inception through to completion</td>
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<td>7</td>
<td>Demonstrable capability of initiating contacts with industry, developing joint research agenda, and delivering economically significant research</td>
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## Attributes/Behaviours

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<tr>
<td>1</td>
<td>Awareness of self and others: recognising and limiting bias, showing empathy and perceptiveness, cultural sensitivity, emotional control.</td>
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<td>2</td>
<td>Independence: challenging the status quo, seeking clarification, questioning assumptions, encouraging diverse views</td>
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<td>3</td>
<td>Performance focus: focus on goals and priorities, an entrepreneurial spirit, setting high standards, supporting a learning culture</td>
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<td>4</td>
<td>Professionalism: care and diligence, investing in self-development, taking responsibility, acting with integrity, championing the organisation</td>
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<td>5</td>
<td>Ethical outlook: expressing the University’s values, displaying high standards of conduct, managing institutional and individual priorities, identifying, and managing conflicts of interest, treating others fairly</td>
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The Professorial Role, Pay Structure and Pay Review Process

The key areas of activity of all academic staff, including professors, at Newcastle University are summarised in the Academic Job Summary [http://www.ncl.ac.uk/hr/recruitment/role-profiles.php](http://www.ncl.ac.uk/hr/recruitment/role-profiles.php). The information below is designed to build upon the Academic Job Summary and specify the levels of expertise and contribution expected of professors. Progression to professorial status at Newcastle is governed by the Procedure and Criteria for Promotion to a Personal Chair.

Professors at Newcastle University are leaders within the academic community. They have a national and international reputation in their academic field and demonstrate leadership both within the University and externally, with recognition often extending beyond academia into relevant policy and practice communities. Like all academic members of staff, unless explicitly specified to the contrary, professors are expected to do research, and expected to do teaching. Engagement is not normally a separate third activity, but in the main derives from research and teaching activities. The University engages with civil society as an educational and research institution, and therefore the expectation is that engagement activities will be carried out not just in the sense of good citizenship, but specifically based on academic expertise and experience.

Professors may or may not have line management responsibilities such as those carried out by the Head of an Academic Unit. However, it is expected that all professors should provide leadership within their academic discipline and make an appropriate contribution to the management of their academic unit, faculty and/or to the University.

Depending on the academic focus of the role performed by an individual, the following activities and achievements, viewed within the context of their academic discipline, are illustrative of the normal level of expectations for those holding a professorship at Newcastle University:

**Research and Innovation**

- Achieve regular outputs, of high impact, in top media for the relevant discipline; this is likely to include publications in top-tier, high-impact journals and in some disciplines research monographs, but may also include exhibitions, performances, commissioned research reports, and a range of other outputs.
- Achieve consistently high levels of research income from peer-reviewed funding sources.
- Lead and direct a substantial programme of research (which may include research groups and/or facilities) often including responsibility for the mentoring and development of academic colleagues.
- Achieve and maintain an international reputation in the discipline and, where appropriate, contribute to societal challenge themes.

**Teaching and Learning**

- Publish highly regarded textbooks and other teaching materials.
- Lead in the design and implementation of programme, curricular and related innovations that make a major positive contribution to the student learning experience and the academic and financial success of the academic unit.
• Establish and maintain national or international eminence through the exercise of leadership within professional bodies and participation in policy circles. Create and/or lead substantial, multi-institutional, regional, national, or international educational programmes or facilities.
• Make a sustained, high-quality contribution to pedagogic research.

Engagement
• Make a major contribution to intellectual, cultural, social, or economic life at regional, national, or international level.
• Lead and direct substantial and financially positive commercial activities and collaborations.
• Play a leading role in the development and/or application of public or professional policy or practice at national, European or international levels.
• Develop and maintain innovative and/or creative partnerships with external bodies (public, private or voluntary), to address societal challenges in line with University strategy.

Professorial Band Profiles
To determine professorial pay in a transparent and equitable manner, the University references a three band pay structure within the professorial grade. This structure is designed to appropriately reflect and reward continuing scholarly attainment and achievements, the exercise of academic leadership, and contributions made to the life, work, and sustainability of the University community.

The band profile descriptions below are used in assigning all Newcastle professors to an appropriate point on the professorial scale.

Band 1
Band 1 is the normal entry band for newly promoted Newcastle professors. It is also sufficiently broad to allow progression within the band as professors develop their career and standing.

For appointment or promotion to this level, a professor will have a national and international reputation in the relevant discipline with established evidence of academic excellence. The detailed criteria are set out in the University’s professorial promotions criteria. Professors who achieve movement to a higher point within Band 1 will be demonstrating continued development in the role as measured against the generic activities expected of professors (described above) and the requirements of the role in question.

Band 2
Professors who reach this band are working at a level significantly higher than the entry level for a Newcastle professor. Individuals have a sustained, distinguished record of internationally recognised achievement in their field; their expertise is in significant demand from partners within or beyond academia and/or they are asked to fulfil major international roles within the discipline.

They will be national leaders in their field and have established themselves as an acknowledged international authority. Their academic work is likely to have made a significant and lasting mark.
Some professors may progress from Band 1, their role and contribution having grown sufficiently to be recognised in this way. Senior lecturers or readers are not normally promoted directly to Band 2. External appointments are only made to Band 2 where the professor is already well established at another institution or working at a comparable level outside academia.

Band 3

This band is reserved for the small number of professors who bring great prestige to the University through their sustained record of academic achievement at the highest international level. This may take the form of leadership of world-leading research, election to the most prestigious learned societies, a leading role in high-impact interdisciplinary collaborations with a broad range of academic, industrial, or governmental partners, or a position of unequivocal international authority. Their work will be recognized internationally as outstanding, and they will have made a formative and lasting contribution to their field of study.

Band 3 professors may have progressed from Band 2, or in exceptional circumstances may have been appointed directly to this band. External appointments are only made to Band 3 where the professor has achieved international status of the highest level. Authority from the Vice Chancellor is required to appoint to Band 3.

Pay Ranges

Ranges are based on professorial pay scale effective from 1 August 2022

- Band 1: £69,613 - £76,452
- Band 2: £78,210 - £103,952
- Band 3: £106,172 +

Annual Pay Review Process

Cases for pay progression will be considered through the Professorial Pay Review process, which commences in February each year, with decisions taking effect the following 1 August.
Energy at Newcastle

From theory and laboratory research, to piloting technologies, and to industry partnerships for research commercialisation, Newcastle University’s academics are at the forefront of energy development at a critical time in efforts to decarbonise and tackle climate change. Our academics are undertaking world-leading research on energy materials, technologies and systems, to support the green recovery for the UK and the world.

The Centre for Energy – one of Newcastle University’s Centres of Research Excellence – brings together a wealth of expertise across disciplines to unify efforts towards a new way of thinking about energy systems. We are currently producing an Energy Briefing which showcases our work in alignment with the government’s recent policy ambitions in this space.

The Centre for Energy is pioneering a whole energy systems approach – looking at the decarbonisation of the system as a whole, rather than considering technologies and policies in siloes. This approach will be crucial in designing and delivering the change needed to reach net zero, and strongly positions Newcastle University to support government and policymakers to lead the way in their decarbonisation commitments.

To achieve our whole energy systems approach, we are working with others across the UK to understand, pilot and deploy new, green technologies. Through these partnerships we are gathering evidence to inform policy development and put the North East and UK at the forefront of the transition to net zero.

Energy materials – Work underway in the Newcastle-led North East Centre for Energy Materials (NECEM) enables us to understand the behaviour of the interfaces of materials with their environment. For example, we are leaders in the fundamental science that underpins the technology for hydrogen generation, storage and use. This allows us to improve the performance and stability of devices such as fuel cells, electrolyzers and solar reactors, which are critical to the future of renewables and green hydrogen. We are also advancing research on dye-sensitized photocathodes, which offer new opportunities for converting sunlight into storable energy cheaply and sustainably. We are developing dye-sensitized NiO cathodes for use in tandem dye-sensitized solar cells and for the photoreduction of carbon dioxide or water to high energy products (solar fuels).

Newcastle University is involved with the Centre of Advanced Materials for Integrated Energy Systems (CAM-IES), a £2.1 million EPSRC networking Centre in partnership with Cambridge, Queen Mary and University College London. CAM-IES focuses on the development of advanced materials for energy conversion and energy storage for future renewable and clean energy systems. We target off-grid/grid-tied applications, large-/grid-scale centralised energy generation and storage and energy solutions for mobile internet communication technologies. We are also key partners for the £4.3m Interdisciplinary Centre for Circular Chemical Economy, which aims to reduce the reliance on fossil resources by creating methods to recover and reuse olefins from domestic waste products and

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1 A Whole Energy Systems approach can assess interactions between constituent systems (gas, electricity, heat) and trade-offs between end use (will uptake of heat pumps limit electricity availability for electric vehicle uptake, for example).
CO2 emissions. Olefins are the raw materials for 70% of all organic chemical production, used to create synthetic fibres, plastics, solvents and other high value-specialities.

**Energy systems** – Newcastle hosts the National Centre for Energy Systems Integration (CESI), a £20m project funded by the Engineering and Physical Sciences Research Council (EPSRC) and Siemens, along with other industry and academic partners. CESI brings together energy experts from leading UK universities and around the world to help unravel the complexity of energy networks, storage, supply and demand, paving the way to a flexibly smart infrastructure, empowering consumers to give them greater control of their energy use, and helping industry meet tough new targets. We provide robust messages about the real world to inform government policy.

Working with Northern Gas Networks and Northern Powergrid, we have established InTEGReL (Integrated Transport Electricity Gas Research Laboratory), a fully integrated whole energy systems development and demonstration facility, which has recently been awarded funding from the government’s Getting Building Fund through the North East LEP. InTEGReL supports collaboration between industry and academia to break down traditional barriers between the gas, electricity, water and transport sectors, better utilising their assets to deliver a more secure, affordable, low carbon energy system. A specific element of InTEGReL will demonstrate technologies to enable decarbonisation of housing.

**Hydrogen** – Newcastle University is a leader in hydrogen research, exploring the technical, economic, and societal opportunities and potential risks hydrogen brings. We are also exploring hydrogen’s prospects for innovation, skills, and industry as well as the potential enablement for green growth and deliverable solutions for Net Zero. Last year, we developed the first thermodynamically-reversible chemical reactor capable of producing hydrogen as a pure product stream, removing the need for the costly separation of the final products. This represents a transformational step forward in the chemical industry and could kick start the green energy revolution, bringing hydrogen a step closer to being a viable fossil fuel alternative.

Electrolysis is also a promising option for green and renewable hydrogen production, using solar or wind energy. Electrolysis uses an electric current to split water into hydrogen and oxygen in an electrolyser. Like fuel cells, electrolyser consist of an anode and a cathode separated by an electrolyte. Several teams at Newcastle are working on renewable H2 production using water electrolysis to then generate electricity via input to a fuel cell when desired. This research offers an innovative avenue to address the challenges of intermittent generation from renewables, such as long-term storage and long-range transport of renewable energy.

**Buildings** – The Active Building Centre is a £9.3m research programme which investigates the potential for buildings to play a more active role in energy systems. We are exploring how buildings might become more complex due to a greater number of assets such as photovoltaic panels, electric vehicles, heat pumps, solar thermal systems, and heat and electrical storage. If these assets are to be better controlled, we need to measure their performance. We also need to know about the status of the local energy networks. At times of network peak demand, the home might then avoid certain loads being used and thereby offer flexibility. Newcastle University research has also looked at the potential for commercial and industrial buildings to behave as virtual power plants and support energy networks.
The University’s National Centre for Energy Systems Integration (CESI) has recently completed a literature review for Northern Gas Networks, regarding the development of a Customer Energy Village at InTEGReL. This literature review clearly demonstrated a lack of real-world demonstration of hydrogen in domestic buildings. We are working closely with Northern Gas Networks on the development of hydrogen trials at InTEGReL, including proposed research to compare mathematical models/digital twins of hydrogen in domestic buildings with laboratory (such as Salford Energy House) and real-world (InTEGReL) results.

The work carried out by our researchers is strategically positioned to support and underpin many of the government’s critical areas of focus for the UK’s future energy supply and its application into our everyday lives. This is exemplified by our engagement to date with government and parliament. Newcastle University’s academics regularly provide expertise as witnesses to government consultations and parliamentary select committees:

- In March, Dr Colin Herron CBE, Managing Director at Zero Carbon Futures gave oral evidence to the Lords’ Science and Technology Committee in support of the role of batteries and fuel cells in achieving Net Zero.
- Our Pro-Vice-Chancellor Global, Professor Richard Davies, also presented to the House of Lords Science and Technology Committee in February on the role of carbon capture.
- The Director of the Centre for Energy, Dr Sara Walker, submitted written evidence for the Business, Energy and Industrial Strategy Committee’s inquiry into decarbonising heat in homes.
- The University’s Centre for Energy subgroup on green gas and carbon capture also submitted written evidence for the Commons’ Science and Technology Committee’s inquiry into the role of hydrogen in achieving net zero.
- From 2015 until recently, Newcastle’s Professor Phil Blythe 2015 has acted as Chief Scientific Advisor for the DfT. In this position Phil has provided a challenge function on the use of science and engineering evidence in policy making and has informed the Department on new innovations and low carbon technologies that could impact the delivery of transport schemes.
- Working with Professor David Manning, the University has also submitted evidence to the Department for Business, Energy and Industrial Strategy, and HM Treasury’s call for evidence on greenhouse gas removals.
The School of Engineering

Engineering is a single integrated School that brings together all engineering disciplines to realise fully the potential and strength of cross discipline teaching and research. The school is organised around four main disciplines:

- Chemical Engineering
- Civil and Geospatial Engineering
- Electrical and Electronic Engineering
- Mechanical Engineering and Marine Technology

Research spans these disciplines, from fundamental principles to multi-disciplinary projects. We tackle global challenges such as climate change, sustainable energy, transport, clean water supply, and waste management, enabled by world-class laboratories and facilities.

We celebrate in 2021 – 2022 the 150th anniversary of the establishment of the College of Physical Science at Newcastle in 1871. The college went on to become Armstrong College, then Kings College and finally Newcastle University. This historic milestone celebrates 150 years of Engineering education at the University.

At the same time as this celebration, we are also entering a period of significant investment in the School of Engineering estate – through the £70m redevelopment of the Stephenson site. The new Stephenson Building will have state of the art facilities for learning, research and industrial engagement.
The Faculty of Science, Agriculture and Engineering (SAGe)

The Faculty of Science, Agriculture and Engineering’s (SAGe) has more than 8,000 students, 1,200 staff and an annual turnover of £150m, making us one of the biggest Faculties in the UK working across science and engineering. We have strong international links and lead the University’s Singapore presence.

SAGe undertook a major re-organisation in August 2017 moving from ten to five academic units; bringing together hubs of disciplinary excellence at our Newcastle campus in key areas; Computing, Mathematics, Statistics and Physics, Natural and Environmental Sciences and Engineering, which is also the mainstay of our Singapore campus operation. We have grown our footprint in Singapore over the last four years with the addition of the Newcastle Research and Innovation Institute (NewRIIS) - a >1000 m² space for postgraduate and staff researchers, CPD training and a base to work with industry ‘alongside an existing operation run jointly with the Singapore Institute of Technology, teaching more than 800 undergraduate students.

We have a strong research presence with national and global leaders in key areas including: The Future of Energy (discovering and developing efficient and sustainable generation, storage and delivery of clean, secure and affordable energy for all), and Industry & Society (using data to revolutionise the way we live); Future Mobility (changing the way we move: from prosthetics to propulsion); Environmental Sustainability & Resilience (understanding our relationship with the environment to enable a secure future for all); Bio-Systems (understanding and manipulating biological systems for the benefit of society and the environment). The existing success of SAGe in these areas is currently demonstrated through our leading role in key components of the UK’s research infrastructure such as the National Centre for Energy Systems Integration, the National Centre for Subsea and Offshore Engineering the National Innovation Centre for Data, National Centre for Innovation in Rural Economy, and the UK National Gear Metrology Laboratory. The £18m GCRF Water Security and Sustainable Development Hub highlights our interdisciplinary work – led from the SAGe Faculty, working with colleagues in the Faculty of Humanities and Social Sciences.

We are members of major consortia such as the £65m Faraday Battery Institution, the UK Energy Network Supergen, the Centre of Excellence for Sustainable Advanced Manufacturing and the Alan Turning Institute and have been designated an Academic Centre of Excellence for Cyber Security Research. Our standing in driving electrification and decarbonisation is recognized through our leadership of the recently announced Driving the Electric Revolution initiative with four regional industrialization centres and more than 30 partner research and technology organisations.

We host the National Green Infrastructure Facility and the Newcastle Urban Observatory, the largest open real-time urban environmental monitoring network in the world with over 2 billion data points collected and processed to date. We offer unrivalled opportunities for deploying findings from our research at scale with two experimental farms allowing us to tackle the most pressing problems in food security and land management. The deepest research borehole in the country, located on Newcastle helix is driving innovations in low carbon geothermal energy research and jointly with our strategic partner, Northumbrian Water, we operate the unique BEWISE facility which allows us to test
novel biotreatment technologies in fully instrumented test beds on an operating wastewater treatment plant. This is key to translating innovations from our fundamental research to field-proven real-world solutions.

Our discipline-based discovery-led research tackles some of the biggest challenges faced by the environment, economy and society. The Faculty has significant industry and policy links facilitating our impact; for example we have ‘Principal Partner Status’ with Siemens, a longstanding partnership with Northumbria Water Group as well as strong partnerships with Procter and Gamble, multinational software company Red Hat, domestic appliance giant Dyson and global engineering consultancy Arup. We are also the strategic science partner of the Food and Environmental Research Agency and provide the Chief Scientific Advisor to the Department for Transport. Our researchers work closely with significant international bodies including the IPCC and the IUCN, driving policy to mitigate climate change and biodiversity loss. We also enjoy EPSRC Tier 1 Partnership Framework status.

The Faculty’s continued success and planned growth builds on the region’s and University’s history of world leading innovation. We aim to further develop our research strength in our identified key areas and integrate critical aspects of the latest research in these areas into our taught offering in close partnership with industry leaders and colleagues in the Faculties of Medical Sciences, and Humanities & Social Science. The re-organisation of SAgE opened opportunities for integrated strategic investment allowing notable strides forward in delivering our vision. We have, for example, committed significant strategic investment in a £68M re-development of our Stephenson Building. The project will create a fresh focus for Engineering at Newcastle offering flexible accommodation for research, engagement and education in a way that is mutually supportive and enhancing. This represents an underlying ethos of our vision, unusual amongst our peers, to fully integrate key functions across the Faculty. Our established Singapore presence also represents an exciting opportunity to further grow our international presence and activity from South East Asia.
Introduction to Newcastle University

Newcastle University is a thriving international community of 29,600 undergraduate and postgraduate students from over 140 countries worldwide, studying at our main campus in Newcastle and at Newcastle University in Singapore and Newcastle University Medicine Malaysia.

 Ranked in the top 150 of world universities (134th in the QS World University Rankings 2022 and 146th in the Times Higher Education World University Rankings 2022), we aspire to be a people-focussed university that harnesses academic excellence, innovation and creativity to provide benefits to individuals, to organisations and to society as a whole. As a member of the Russell Group of research-intensive universities in the UK, we have a world-class reputation in the following thematic areas: ageing and health, cities and place, culture and creative arts, data, and One Planet.

The University traces its origins to 1834 and the need to address the economic, health and social demands of an industrial city. We are located in, and have contributed to, a region with a tradition of invention and innovation spanning more than 200 years, from the opening of the first permanent public railway line in 1825, through the birth of Pop Art in the 1940s to obtaining, in 2017, the world’s first licence for a pioneering technique to eradicate inherited mitochondrial disease.

The University’s main campus is located in the centre of Newcastle upon Tyne, the cosmopolitan capital of the North East of England. The city enjoys a worldwide reputation for the quality of its cultural and social life.

Academic Excellence

In 2022 we rank in the top 200 for Education in the Times Higher Education World University Rankings by Subject. A ringing endorsement of our long tradition of excellence in teaching.

REF2021 re-affirms Newcastle’s position as one of the UK’s world-leading research-intensive universities and shows that we are achieving our strategic goal to grow research power. The results show that the University’s research capacity – or ‘power’ in REF terms – has grown by 65% since 2014. 42% of our research was scored as world-leading up from 31% in 2014 and Grade Point Average (GPA), the assessment of quality, has increased from 3.09 to 3.29 (out of a maximum of 4* world-leading).

These reflect the contributions from a growing team of researchers which has increased by 54% this time.

The results consolidate our position as one of the UK’s world-leading broad-based research-intensive universities.

Our education, outreach, stewardship and research is dedicated to tackling some of the most complex and pressing issues we face.

Our 'triple-crown' accreditation status also places us among the top business schools in the world.

There are a number of characteristics that have defined us over the years and which continue to be prominent features of our Vision. These include our clear focus on education and research that is of direct relevance to our city and region (we are a member of the Civic University Network), a culture of openness and transparency and longstanding commitments to equality, diversity and inclusion and academic freedom. We are a signatory of the Magna Charta Observatory and are a contributing
institution in their Living Values project which includes a focus on inclusive education. We hold an institutional Athena Swan Silver award and are working towards Race Equality Charter accreditation. We are also proud members of the Business Disability Forum and a Stonewall Global Champion. In 2020 we were the first University to become a member of the Employer with Heart charter. Newcastle was ranked first in the UK and 8th in the world in the Times Higher Education Impact Rankings 2022. The rankings assess a university’s work towards achieving the UN Sustainable Development Goals, and Newcastle’s world-leading research in this area was key to achieving this. We have a proud history of championing social and environmental justice now embodied in our flagship Education building, the Frederick Douglass Centre, and we are dedicated to embedding it in our research, education and engagement activities.

**Globally Ambitious**

We have extended our reach beyond the UK by establishing a presence in Singapore and Malaysia. Newcastle University in Singapore, in partnership with the Singapore Institute for Technology, has a particular focus in Engineering and is actively exploring online education.

Newcastle University Medicine Malaysia (NUMed), opened in 2011, made Newcastle the only UK University with fully owned medical campus overseas. NUMed delivers degrees in medicine and biomedical sciences to 800 students.
Employee Benefits

At Newcastle University, we are committed to providing a great range of benefits and discounts for our colleagues. A selection of these are:

**Pensions** – schemes to which colleagues are auto enrolled and offering a range of benefits.

**NCL Rewards** is the Newcastle University discounts website exclusively for University colleagues. With access to 6,500 leading discounts at national retailers, discounts on holidays and cash back on purchases, there is something for everyone!

The scheme is administered by Sodexo and subsidised by the University. Sodexo currently work with 48% of Higher Education Institutions within the UK, guaranteeing a higher level of discounts not available to the public. You can apply for your NCL Rewards membership on commencement of employment at the University. To do this you’ll need to have your colleague number available.

**Cyclescheme** was introduced by the Government as part of the Green Transport Plan Initiative, the scheme gives colleagues the opportunity to save money on a brand new bike and accessories and spread the cost over 12 months. Savings of up to 25%-39% on standard cycle prices can be made through salary sacrifice.

Cyclescheme customers are not limited to any particular bike or accessory brand and therefore can choose the best for quality and value-for-money. The purchase must be made from a “partner shop” ie the cycle shops who are partnering with Cyclescheme and Newcastle University. A full list of partner shops can be accessed directly by visiting the Cyclescheme website.

With a **Simplyhealth** Cash Plan you can claim money back towards the cost of check-ups and treatment and you can cover just yourself or a partner too. What’s more up to four children under the age of 18 are covered for free!

Simplyhealth describe their health plan as pots of money you can use to look after your everyday health. Some regularly used health benefits include:

- **Optical** – includes prescription glasses, contact lenses and prescription sunglasses up to annual limits.
- **Dental** – claim for check-ups, scale, polish and treatment up to annual limits.
- **Complementary therapies** – includes physiotherapy, chiropractic, osteopathy, acupuncture and homeopathy up to annual limits.

In addition to NCL Rewards, University colleagues have access to a wide range of special offers, discounts and corporate rates on travel, leisure and retail.

**Equality, Diversity & Inclusion**

We are committed to academic excellence, equality of opportunity, valuing individual differences and the diversity this brings. We aim to develop a fully inclusive University community which recruits and retains colleagues and students from all sectors of society, so that they can be developed within a positive and supportive culture and encouraged to flourish and reach their potential. Our ED&I strategy can be found [here](#).
These fundamental values are central to ensuring that all individuals are treated with dignity, fairness and respect. The fostering and promotion of good relations and understanding between and among colleagues and students, irrespective of identity or background, is expected of everyone that works or studies at the University. By fully embracing equality and diversity, the University is better able to engage with its customers, respond to new and evolving business challenges and create better working environments for colleagues.

Athena SWAN

We are the proud recipients of an institutional silver Athena Swan award demonstrating our achievements and ongoing commitment to achieving gender equality. We have held a Silver award since 2016.

Race Equality Charter

Newcastle University has become a member of the Race Equality Charter (REC) to help to improve the representation, progression and success of minority ethnic colleagues and students within higher education.

REC provides a framework through which institutions work to identify and self-reflect on institutional and cultural barriers standing in the way of ethnic minority colleagues and students. We are aiming for a full accreditation submission by 2022 and have a self-assessment team, chaired by the Deputy Vice-Chancellor, with membership of colleagues and students from across the organisation working on several key workstreams that have huge relevance in the Education portfolio.

We value diversity at Newcastle University and welcome applications from all sections of the community.
Investment in People

The University has a strong record of accomplishment and is proud of our achievements to date in our investment in people. As a people-centric organisation we have and continue to invest in our colleagues:

- Our Culture & Values work aims to bring the university values and guiding principles to life through a range of activities. 2021 saw the launch of our Leading through values programme which will be rolled out to all leaders over the next 3 years. Equally, Managers Essentials provides a range of knowledge and skill workshops for those new to management and leadership.
- A growing focus on Research Culture which following the appointment of a Dean of Research Culture in 2020 and extensive consultation has a Roadmap for further action. our full commitment to the Concordat and the NUAct Fellowship Scheme (Newcastle University Academic Track) - Investing £30 million to build diverse community of 100 NUAcT fellows over 5 years;
- NUCoREs - We deliver important research missions through a growing portfolio of Newcastle University Centres of Research Excellence (NUCoRES). Our Research Strategy sets our ambition for the growth of people and resources. NUCoREs represent priority areas where this growth will occur.
- We undertake a range of accreditations to continually enhance and improve our practice, in particular Athena Swan and Race Equality Charter. We are members of Stonewall and Disability Forum and we have a range of active colleague networks to support and engage colleague across the University.
- February 2021 saw the introduction of Inclusive Futures, a new leadership programme offering colleagues from ethnically minoritised groups the opportunity to develop their leadership skills and challenge their thinking about what it is to be a leader from an underrepresented group in the University, in the sector and in the city. 2022 will see the second cohort of the programme and plans for the future include extending the programme to other protected characteristics.
- The University is committed to our Apprenticeship scheme, supporting both newly recruited apprenticeship roles and existing colleagues undertaking apprenticeship programmes. The University engages with a range of local colleges and providers to deliver the programmes and we currently have over 100 colleagues working on apprenticeships across the institution;
- We have invested in significant resources in training and development across a range of teams. We offer a comprehensive suite of development programmes covering technical, soft skills, coaching and mentoring and management skills available online and face to face.
Investing in world-class facilities

The University’s has invested heavily in our city centre campus and will continue to do so over the coming years. Our investments include:

- The phased refurbishment of the Armstrong and Henry Daysh Buildings (for Humanities and Social Sciences Schools as well as the heart of our graduation ceremonies and events);
- The development of our flagship, £58m Urban Sciences Building (housing our School of Computing);
- The development of a 1,277 bed Park View Student Village;
- Significant investment in IT systems to support People Management:
  
  * outstanding investment (£20m) in our infrastructure for digital connectivity (‘the network’) that, over the next 3 years, will build a secure, agile, extensible foundation for all the digital services consumed by the 40,000 people who routinely connect to our network. For Newcastle University, this will connect everything and everyone everywhere all the time.
  
  * A ground-breaking investment in a new digital admissions system, delivered using agile methods, Cloud-first, using Low-code/No-code technology. This is a model and ‘pipe-cleaner’ for digital deliveries of the future.
  
  * A solid and dependable set of up-to-date Core Digital Services, including key administrative systems like our World-first upgraded SAP ERP, our cloud-based HR, Virtual Learning Environment and Research Management systems and the sector-leading adoption of Microsoft 365, Teams, Yammer, and OneDrive services within a single cloud-based Directory Service for all staff and students (globally) that removes barriers to collaboration and connectivity within our community for both education and research.
  
  * An industry-leading investment in cyber-security to keep everyone and our intellectual property safe, secure and resilient in an increasingly uncertain world.

- A new medical sciences education building;
- The refurbishment of the Claremont Complex;
- Our £25m Sports Centre, which enables students to participate in sport during their time at university and plays a vital role across the entire student lifecycle;
- In 2019 we opened the Frederick Douglass Centre – a flagship educational building with student experience at its heart, named in honour of the 19th century social reformer and abolitionist who was associated with the Summerhill area of the city next to the Helix site;
- The Catalyst Building – a £44m bespoke headquarters for our National Innovation Centres for Ageing and Data and the National Institute for Health Research Innovation Observatory which we opened in Autumn 2019;
- In 2020 we also received approval for the National Innovation Centre in the Rural Economy. Together with the Urban Sciences Building, these innovation centres will create a full-scale demonstration site or “living laboratory” in the heart of Newcastle that will provide real-world solutions to the issues facing modern and growing cities that businesses and communities can get involved with and help to shape;
- Investment in cultural venues linked to our academic excellence including The Hatton Gallery is part of our world-class School of Arts and Cultures;
The Great North Museum: Hancock (GNM) is home to extensive natural history, archaeology and ethnography collections;

The Sir Terry Farrell Building (2022) - a refurbishment to provide a University exhibition centre and Urban Room including engagement spaces and an office incubator, invested £5m

Stephenson Building (2024), Provision of a new engineering hub which involves the demolition of part of a building and the construction of a new extension, plus refurbishment of the retained front part of the building, an investment of £68m.

Delivery of the Climate Action Plan and ongoing carbon reduction measures is supported by £15m/pa of central funding from the University, alongside SALIX funding. A heat decarbonisation plan for the campus is being developed, working alongside partners in the City including the NHS Trust and City Council - investment will be made in both energy networks and the buildings the networks serve.

CAV - The regeneration of the former General Hospital site, on Westgate Road in Newcastle’s West End, will help people live longer and healthier lives through global leadership in ageing and research. The planned development, which will take approximately 10-years to complete, will link research and innovation across the whole 29-acre site and provide unique solutions for living, leisure, learning and employment as we age.
University Organisation & Structure

Led by the Vice-Chancellor and President, Professor Chris Day, the other senior leaders of the University include our Deputy Vice-Chancellor and Provost (TBC) and four cross-cutting Pro-Vice-Chancellors (PVCs). They provide strategic leadership on a University-wide basis for each of our core academic functions: Education (Professor Tom Ward); Research Strategy & Resources (Professor Brian Walker); Engagement & Place (Professor Jane Robinson); Global (Professor Richard Davies).

Delivery of the core academic functions occurs in our three faculties, each of which is led and managed by a PVC: Faculty of Humanities and Social Sciences (HaSS; Professor Nigel Harkness); Faculty of Medical Sciences (FMS; Professor David Burn); Faculty of Science, Agriculture and Engineering (SAgE; Professor Stephanie Glendinning). The three Faculty PVCs report to the Deputy Vice-Chancellor and Provost.

The Professional Service functions are led and managed by the three Professional Service budget-holders: the Chief Operating Officer (Adrienne McFarland); the Executive Director of Finance (Nick Collins); and the Registrar (Dr Colin Campbell), all of whom are members of the Executive Board. Executive Director of External Relations (Justin Cole) is also a member of Executive Board. The Faculty professional service functions are led and managed by the three Directors of Faculty Operations (DoFOs) who report directly to the Faculty PVC.

Each Faculty consists of a number of academic units, typically schools or research institutes, each led and managed by a Head. Currently, there are 21 academic schools (including Malaysia and Singapore), 12 research institutes and a further 39 research centres.

The University’s Vision and Strategy, launched in October 2018, comprises four core strategies: Education, Research, Engagement and Place, and Global. Each of these is supported by a series of strategic enablers that provide a focus for a range of underpinning activities.

Distribution of Academic Schools and line-managed Institutes

<table>
<thead>
<tr>
<th>Humanities and Social Sciences</th>
<th>Medical Sciences</th>
<th>Science, Agriculture and Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture, Planning &amp; Landscape</td>
<td>Biosciences Institute</td>
<td>School of Computing</td>
</tr>
<tr>
<td>School of Arts &amp; Cultures</td>
<td>Translational and Clinical Research Institute</td>
<td>School of Engineering</td>
</tr>
<tr>
<td>Newcastle University Business School</td>
<td>Population Health Sciences Institute</td>
<td>School of Mathematics, Statistics &amp; Physics</td>
</tr>
<tr>
<td>Combined Honours and Philosophy</td>
<td>School of Biomedical, Nutritional and Sport Sciences</td>
<td>School of Natural &amp; Environmental Sciences</td>
</tr>
<tr>
<td>Education, Communication &amp; Language Sciences</td>
<td>School of Dental Sciences</td>
<td>Newcastle University in Singapore (NUIS)</td>
</tr>
<tr>
<td>School of English Literature, Language &amp; Linguistics</td>
<td>School of Medical Education</td>
<td>National Innovation Centre for Data (NICD)</td>
</tr>
<tr>
<td>Geography, Politics &amp; Sociology</td>
<td>School of Pharmacy</td>
<td>National Innovation Centre for Rural Enterprise (NICRE)</td>
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<tr>
<td>History, Classics &amp; Archaeology</td>
<td>School of Psychology</td>
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<tr>
<td>Newcastle Law School</td>
<td>NUMed (Newcastle University Medicine Malaysia)</td>
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<tr>
<td>School of Modern Languages</td>
<td>National Innovation Centre for Ageing (NICA)</td>
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<tr>
<td>Humanities Research Institute</td>
<td>Institute for Social Science</td>
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<tr>
<td>Institute for Creative Arts Practice</td>
<td>Institute for Creative Arts Practice</td>
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**Professional Services**

The University’s central Professional Services are organised into three major budget areas as listed below. These work closely with the Faculty Professional Services as part of the ‘One University’ approach.

<table>
<thead>
<tr>
<th>Chief Operating Officer</th>
<th>Registrar</th>
<th>Executive Director of Finance</th>
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</thead>
<tbody>
<tr>
<td>Operations Hub: NUIT</td>
<td>Academic Services Hub: Governance and Executive Office</td>
<td>Finance Hub: Corporate Finance</td>
</tr>
<tr>
<td>Estates and Facilities</td>
<td>Business Development and Enterprise</td>
<td>Financial Performance</td>
</tr>
<tr>
<td>People Services</td>
<td>Legal Services</td>
<td>Financial Services</td>
</tr>
<tr>
<td>NU Advancement</td>
<td>Research Strategy and Development</td>
<td>Procurement and Purchasing</td>
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<td></td>
<td>Strategic Planning and Change</td>
<td>Internal Audit</td>
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<td></td>
<td>External Relations</td>
<td>Funding Assurance</td>
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<td>Academic Services</td>
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<td>Student Services</td>
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<tr>
<td></td>
<td>International Office</td>
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Living and Working in Newcastle

Newcastle is a modern, vibrant city in the North East of England, rich in culture with a stunning cityscape and strong identity. It is a special place that rewards people who choose to visit, live, work and study here. Newcastle is also a leading city in tackling the climate emergency with a dedicated Net Zero Task Force and is one of only four cities in the UK to receive the top “A” grade from international climate research provider CDP, one of only 88 globally. Newcastle City Council and Newcastle University were amongst the first local authorities and universities to declare a climate emergency and commit to Net Zero carbon emissions, alongside Newcastle Upon Tyne Hospitals Trust who were the first healthcare organisation in the world to do the same.

Getting around

The city centre is easier to get around than many other urban centres as it is compact and quite flat, and most major landmarks are within a 20-minute walking distance. The modern, integrated transport system includes an extensive bus network, designated cycle lanes and the North East’s own underground train system, the Metro, to get around the city and region.

Newcastle is also well connected with the rest of the UK and beyond. The East Coast mainline provides direct access to London by train in less than three hours and Edinburgh in just over an hour, with trains running approximately every 30 minutes. The A1(M) motorway links the area to London, Edinburgh and other major UK cities, and there is an International Airport less than 15 minutes from the city centre.

Attractions

The city offers excellent shopping facilities including the Grainger Market, a unique indoor market which is home to local businesses and produce, as well as local shopping centres and high street chains. There are also plenty of restaurants, museums, galleries and cinemas.

Newcastle is a very green city, with swathes of open green space in Exhibition Park just north of the University campus, as well as the Town Moor, Nun’s Moor and Jesmond Dene. The city also lies in close proximity to the North East coastline and countryside, including the Northumberland coast and its historic castles, designated as an Area of Outstanding Natural Beauty, which are only 30 minutes’ drive to the north. To the west lies Hadrian’s Wall world heritage site, and south of the city is County Durham, where the ancient City of Durham is complemented by a heritage coastline and rural towns and villages.

The city centre is renowned for its stunning architecture with many fine buildings and streets including Grey Street, described by renowned architectural historian, Nikolaus Pevsner, as ‘one of the finest streets in England’. Once a busy industrial and commercial dockside, Newcastle’s Quayside is now packed with cafés, bars and restaurants from which to enjoy views of the River Tyne and its bridges.

Neighbouring Gateshead, on the south bank of the Tyne, is famed for its contemporary culture and iconic structures, including BALTIC, converted from a landmark industrial building in the 1990s and now a major international centre for contemporary art, the Sage Gateshead concert venue occupying...
a curved glass and steel building designed by Norman Foster, the Stirling Prize-winning Gateshead Millennium Bridge and Antony Gormley's Angel of the North.

Sports fans are spoilt for choice in Newcastle, with regular top-flight football, rugby and basketball fixtures taking place in the city. Gateshead Stadium brings international athletics to the region, while the world-class Durham International Cricket Ground plays host to county, one-day international, Twenty20 and Test matches. Every year, the world’s largest half marathon, the Great North Run, attracts some 57,000 participants and many thousands more spectators.

**Living in the region**

Our region is one of the best-value places to live in the UK based on the average cost of living, and property is significantly more affordable than in many other parts of the country. From carefully restored Victorian terraces to contemporary city-centre apartments, semi-rural locations to seafront homes, the region offers a wealth of choice in accommodation.

Newcastle’s hospitals have an international reputation for excellence in health care, and the University works in close partnership with the Newcastle Hospitals NHS Foundation Trust. Our National Health services are some of the best in the country, and our hospitals – including the Royal Victoria Infirmary and the Freeman and Queen Elizabeth hospitals – are also significant employers. Education here also has a strong reputation, with a choice of excellent state and private schools, several FE colleges and of course world-class higher education provision.
How to Apply

Newcastle University now invites applications for the position of Professor of Chemical Engineering (Energy Storage).

Applications should consist of a full academic CV and a covering letter, of up to 2 sides of A4 paper, outlining your interests in and vision for the role.

We appreciate that, for some colleagues, a standard, full-time contract may not be ideal. So, we are very happy to consider flexible options, such as job-sharing, for this position. For more details, see our flexible working web page.

For further information and to apply for this position please contact either Evan Yeckley or Natalie Derry with our search partners WittKieffer.

- Evan Yeckley at eyeckley@wittkieffer.com (telephone +44 7408 834 744)
- Natalie Derry at nderry@wittkieffer.com (telephone +44 7408 851 596)

Appointment Timetable

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening Date</td>
<td>15.08.2022</td>
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<tr>
<td>Closing Date</td>
<td>18.09.2022</td>
</tr>
<tr>
<td>Formal Interviews</td>
<td>TBC</td>
</tr>
</tbody>
</table>