



University of Liverpool

POSTDOCTORAL RESEARCH ASSOCIATE IN PHYSICS (ALICE/LHC)

Job Ref: 011612

**Faculty: Science and Engineering, School of Physical Sciences,
Physics**

Location: Liverpool

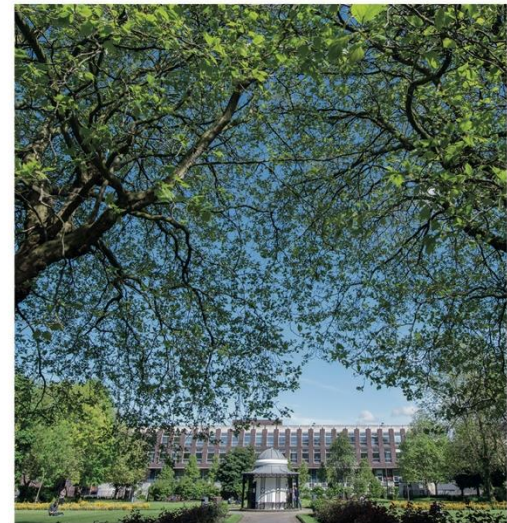
Grade: 7

Salary: £34,188 - £39,610 pa

Hours of Work: Full-Time

Tenure: The post is available from 1 July 2019 until 30 June 2021

**Shortlisting and interview arrangements are the responsibility of the
recruiting Department. Please contact Professor Marielle Chartier
email: m.chartier@liverpool.ac.uk for all enquiries.**





.....
UK leader
in social mobility.



.....
Russell Group
Member of the Russell Group.



.....
At the forefront of
innovation and discovery.



.....
Nobel Laureates
Associated with nine Nobel Laureates.



.....
Investing
in our campus.

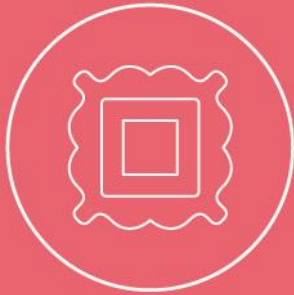


.....
Global links



Affordable

Based in the 2nd most affordable UK city.



More galleries and museums than any UK city outside of London.



Birthplace of The Beatles and home to two Premier League Football clubs.



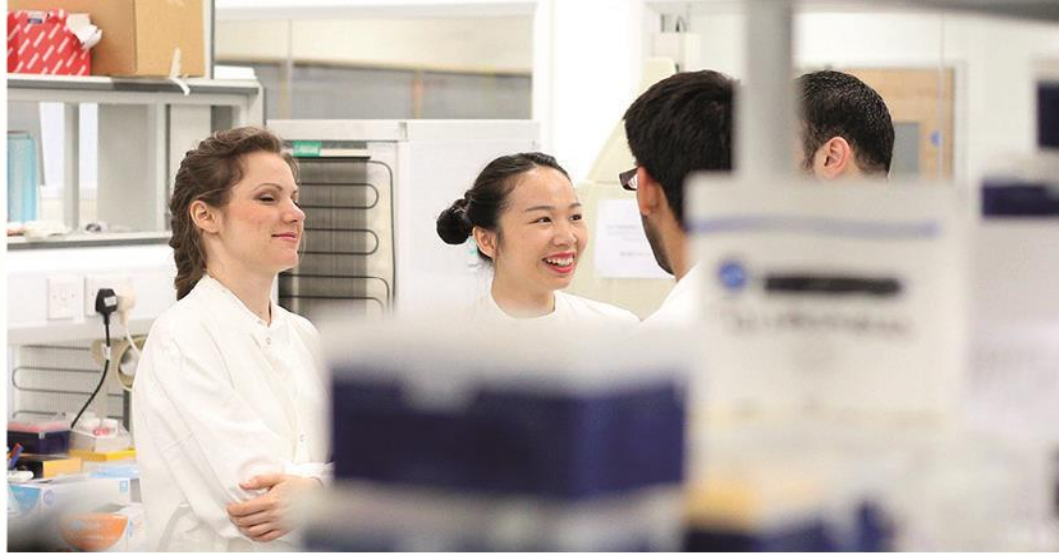
33,000

33,000 students, 7,500 of whom travel from all over the world to study here.





Job Role



THE POST

Applications are invited for a 2-year Postdoctoral Research Associate position in the Department of Physics at the University of Liverpool to work in the Hadron Physics Group on its STFC-funded research programme with the ALICE experiment at the LHC (CERN). The group's primary interest is in the properties and structure of "hot QCD" as manifest in the high-energy collisions of heavy ions, and in particular therefore in the production of charm and beauty quark matter in such interactions by means of measurements of charm and beauty hadrons. Hitherto a number of publications of the inclusive production of charmed baryons have already been made with LHC data from Runs 1 and 2.

Applicants are required to have a PhD (or to be about to submit a PhD thesis) in nuclear or particle physics with research experience in high-energy interactions.

Alongside progress on its physics programme, the Liverpool ALICE team (together with STFC Daresbury Laboratory) are a major contributor to the substantial upgrade of the Silicon Inner Tracking System (ITS) of the ALICE experiment. The University of Liverpool and STFC Daresbury Laboratory are each one of the worldwide construction sites for the ITS upgrade. The step-change in precision and sensitivity for charged particle detection which the ITS upgrade brings will for the first time make possible measurements of localised dynamics of heavy-flavour hadronic matter in the "QCD plasma" over a wide range of transverse momentum and with good sensitivity to topological features of associated hadronic recoil.

The ITS upgrade is a new tracking and vertexing silicon detector comprising seven layers of CMOS Monolithic Active Pixel Sensors (MAPS). The use of MAPS as the sensor element for the entire detector is innovative, providing hitherto unprecedented spatial granularity with minimum material thickness. Liverpool and Daresbury are responsible for the construction of a substantial fraction of the modules and staves for the ITS Outer Barrel, due to complete this year (2019).

The appointee will be employed by the University of Liverpool within the Physics Department. (S)he will work with the group developing h(er)is physics programme with analysis of ALICE LHC Run 2 data, primarily those from the 2018 Pb-Pb data-taking, and participating in the group's work as it completes the commissioning of the ITS upgrade at CERN and in preparations for first data taking at the start of Run 3 at the LHC.

In these tasks, they will report to the Liverpool ALICE team leader, Professor Marielle Chartier. The Liverpool group works in close collaboration with the STFC Daresbury Laboratory ALICE group with whom you will also be encouraged to interact. A willingness to travel, a flexible approach to work, and the ability to communicate effectively within large multinational collaborations are all essential.

THE DEPARTMENT OF PHYSICS

The Physics Department, now part of the School of Physical Sciences, was one of the first departments established in the University in 1881 and has a long tradition of excellence in physics research. The Department has scored highly in three consecutive reviews by HEFCE - the national Research Assessment Exercise (RAE). This considerable achievement reflects the Department's international reputation in the fields of condensed matter physics, nuclear physics, particle physics and accelerator science.



Job Role *continued*

The first Professor of Physics at Liverpool was Sir Oliver Lodge, who made the world's first public radio transmission in 1894. Two years later, Lodge demonstrated the use of X-ray photography by taking an image of a bullet in a boy's wrist. It was the first time an X-ray had been used for surgical purposes in the UK. Professor Charles Glover Barkla's research into X-Rays won him the Nobel Prize for Physics in 1917, and Sir James Chadwick was awarded the Nobel Prize for Physics in 1935 for discovering the neutron. More recently, Sir Joseph Rotblat was awarded the Nobel Peace Prize in 1995 for his work on limiting the threat posed by nuclear weapons.

Since the Chadwick era and the operation of the Liverpool cyclotron and synchrocyclotron, physicists from the department were instrumental in the first steps to establish CERN in Geneva in the 1950s and later led the establishment of the Daresbury Laboratory in the 1960s as one of the two UK laboratories for high-energy physics. This pivotal role at Daresbury continued with the Nuclear Structure facility which itself followed the department's Van der Graaf accelerator for nuclear physics in the 1960s. Nuclear structure physics now continues at overseas labs. For decades staff have participated in and led fixed target and collider experiments worldwide, for example at CERN (Delphi at LEP, CPLEAR, ATLAS and LHCb at LHC), at DESY (H1 and HERMES at HERA), at SLAC BABAR and at Fermilab CDF. More recently, staff from the department led the creation of the Cockcroft Institute for Accelerator Science and Technology at Daresbury Laboratory with colleagues from the Universities of Manchester and Lancaster and the Accelerator Science and Technology Centre (ASTeC) at Daresbury.

In the Department of Physics there are currently 42 academic staff who are responsible for the teaching and supervision of over 390 undergraduate and over 120 postgraduate research students. Over 100 full time research and computer physicists, professional, technical and electronic support staff, together with extensive laboratory, workshop and design facilities, support the research groups.

Further details of the department can be found on the web site www.liverpool.ac.uk/physics/.

THE LIVERPOOL SEMICONDUCTOR DETECTOR CENTRE

The LSDC provides the University of Liverpool Physics Department with a unique facility for constructing detectors and performing major R&D into the next generation of particle and nuclear detection systems.

Since 1998, a multi-million pound investment has enabled the establishment of a 450m² clean room equipped with state-of-the-art wire-bonding, wafer-probing and metrology equipment, and the complete refurbishment of the Oliver Lodge Laboratory workshop. Officially opened on 11th September 2003 by Sir David King, the government's Chief Scientific Advisor, the LSDC has been at the heart of the department's hardware contribution to major international experiments, such as ATLAS, LHCb and ALICE at the LHC, ALPHA at CERN and for the future FAIR facility (R³B Silicon Tracker) in Germany.

The LSDC is a uniquely well-equipped facility for a UK University Physics Department. It makes possible the assembly and testing of large integrated detector systems based on sensors with spatial resolution of typically a few microns. Work in the LSDC also includes major R&D work, funded by PPARC/STFC and the EU, in preparation for the construction of 'pixel' arrays of detectors for experiments at accelerator projects beyond LHC.

PERSON SPECIFICATION

Essential Criteria

Desirable Criteria

(Identified from – Application form, CV, Supporting Statement, Interview, References)

Experience

1.1	Experience in high-energy physics research	Experience in high-energy physics data analyses
1.2	Experience of work within a large international collaboration such as at a large-scale nuclear or particle physics accelerator facility	Experience of work at/with CERN

Education, Qualifications and Training

2.1	PhD (or about to submit thesis) in nuclear or particle physics	
-----	--	--

Skills, General and Special Knowledge

3.1	Knowledge of relevant computation language (e.g. C++), operating systems (e.g. Linux)	Knowledge and experience of Monte Carlo frameworks for high-energy physics data analyses
3.2	Excellent communication skills	

Personal Attributes and Circumstances

4.1	Able to work flexibly, co-operatively and effectively with colleagues and collaborators, nationally and internationally	
4.2	Availability and willingness to travel to international institutes and spend periods there (e.g. CERN) as required by the international nature of the research project	



How to Apply



To apply for a Vacancy at the University you must register on the University of Liverpool E-Recruitment site, <https://recruit.liverpool.ac.uk>

If you have any queries relating to applying for a Vacancy please contact the Recruitment team by email – Jobs@liverpool.ac.uk

Acknowledging your application

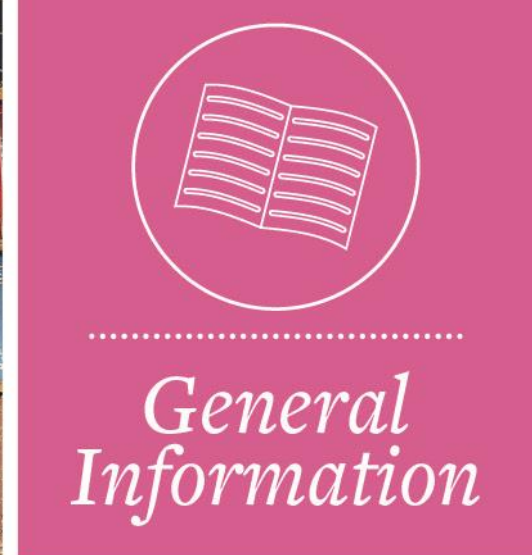
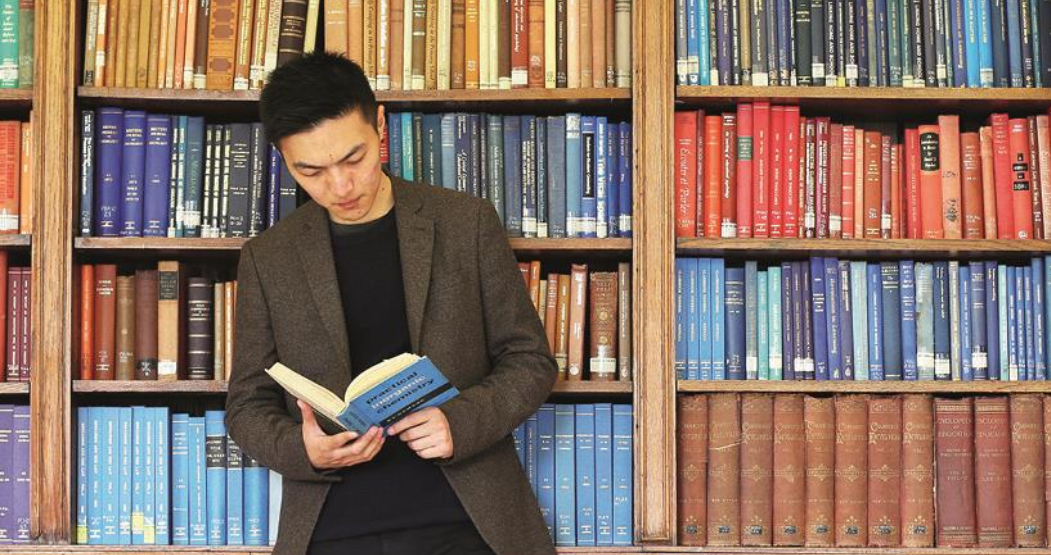
Once you have submitted your application you will receive an automatic acknowledgement. Your application can be viewed at any time in the Application History section of your E-Recruitment Account.

Outcome of applications

Vacancies at the University often attract a large number of candidates and it is not always possible to respond individually to every application. If you have not heard from the recruiting department within 6 weeks after the closing date please take it that your application has not been successful.



Micah
Liverpool



Asylum & Immigration

The University will comply with the Immigration, Asylum and Nationality Act 2006, which requires all employees to provide documentary evidence of their legal right to work in this country prior to commencing employment. Please be aware that you will be required to bring your passport (and visa if applicable) to interview so that it can be copied and verified by a member of the Selection Panel. For posts requiring a recognised degree level or equivalent qualification, and where there is no suitable UK or European Economic Area candidate, the University will take the necessary steps to secure UK Border Agency permission for a foreign national to take up employment.

Should a candidate require a Certificate of Sponsorship in order to take up a post they will need to meet the UK Border Agency Tier 2 Points Based Criteria. A self assessment tool can be found on the UK Border Agency website at: www.ukba.homeoffice.gov.uk/pointscalculator

A candidate may also be required to undertake an English Language test prior to commencing work at the University. Details of Home Office approved tests can be found at: <https://www.gov.uk/government/publications/guidance-on-applying-for-uk-visa-approved-english-language-tests>. Further information on the eligibility criteria for Certificates of Sponsorship can be found at: www.ukba.homeoffice.gov.uk/employers/points

National Insurance Number

All employed individuals must possess a UK National Insurance Number. Further information and how to apply for a unique National Insurance Number can be found at: <https://www.gov.uk/apply-national-insurance-number>

Diversity and Equality

The University of Liverpool is committed to diversity and equality of opportunity. All employees and applicants for jobs will be considered on their abilities and will not be discriminated against on the grounds of age, caring responsibilities, colour, disability, employment status, gender, gender identity, marital status, nationality, race or ethnic origin, religion or belief, sexual orientation, socio-economic status or any other irrelevant distinction. Training is available to support career progression within the University.

Two Ticks Disability: Guaranteed Interview Scheme (GIS)

The University of Liverpool is committed to the employment of disabled people, and as part of our commitment, we guarantee to interview all disabled applicants who meet the essential criteria for a post and consider them on their abilities. If your disability prevents you completing the application form by the specified closing date, or when the vacancy closes early, due to a high volume of applications, please call the Recruitment Team to discuss alternative arrangements. <http://www.liv.ac.uk/working/jobvacancies/guaranteedinterviewscheme/>

Micah Liverpool Programme

The University of Liverpool supports the Liverpool Anglican Cathedral Micah Liverpool Programme. Applicants who have successfully completed the programme and meet the essential criteria for the post will be offered a guaranteed interview. Please note that individuals will be confirmed through the Micah Liverpool Programme directly. <http://www.liverpoolcathedral.org.uk/home/micah-liverpool.aspx>

GiveGetGo Volunteer Programme

Applicants who have successfully completed the GiveGetGo Volunteer Programme at the University in Partnership with the Transform Lives Company who meet the essential criteria for the post will be offered a guaranteed interview. Please note that individuals will be confirmed through the GiveGetGo Volunteer Programme directly.

<https://www.liverpool.ac.uk/working/jobvacancies/givegetgo/>

Accessibility

If you require copies of documentation in alternative formats, for example, large print or Braille, please contact jobs@liverpool.ac.uk or telephone 0151 794 6771.

If you have any other requirements which will help you access the application or interview process or employment opportunities at the University of Liverpool, please let us know by contacting jobs@liverpool.ac.uk or telephone 0151 794 6771.

Pension

Information about The Occupational Pension Scheme associated with this appointment can be found [here](#). You are encouraged to familiarise yourself with the full particulars of the scheme.