UK Entrepreneurial University of the Year 2013/14
UK University of the Year 2012/13

University of Strathclyde Glasgow

Marie Sklodowska-Curie Early Stage researcher with PhD opportunity in theoretical atomic and optical physics

Department	Physics (www.strath.ac.uk/physics/)		
Faculty	Faculty of Science (www.strath.ac.uk/science/)		
Staff Category	Research	Reference No	58299
Reports To	Dr Gordon Robb	Grade:	RS79
Salary Range:	CIRCA £32,470 per annum*☐	Contract Type:	Fixed Term (3 years)
FTE:	1	Closing Date	Sunday, 12 March 2017

Job Advert

We are seeking a highly qualified and ambitious candidate for a position as an early stage researcher with the aim of obtaining a PhD within the framework of the European Training Network ColOpt (Collective effects and optomechanics in ultra-cold matter). The project is funded under the Marie Sklodowska-Curie Innovative Training Network action H2020-MSCA-ITN-2016, Grant Agreement 721465. It involves twelve different partners from six European countries. The research program of ColOpt focuses on collective interactions of light with laser-cooled cold and quantum-degenerate matter. It will explore innovative control of matter through optomechanical effects, identify novel quantum phases, enhance knowledge of long-range coupled systems and advance the associated trapping, laser and optical technologies, establishing new concepts in quantum information and simulation.

The position opened at the Computational Nonlinear and Quantum Optics (CNQO) Group of the Department of Physics of the University of Strathclyde is aimed at the theoretical studies of optomechanics and nonlinear optics involving orbital angular momentum. The candidate will carry out theoretical analysis and numerical simulations of the interaction of structured light beams carrying orbital angular momentum (OAM) with cold atoms. Nonlinearities arising from optomechanical forces, internal atomic states and quantum coherences will be considered.

We are looking for an excellent and highly motivated candidate with a strong interest and experience in at least some of the areas of atomic physics, nonlinear optics, laser physics and quantum physics. We expect dedication and enthusiasm for theoretical research combined with openness and curiosity and the ability and willingness to work in a team. You will have an excellent BSc degree or MSc degree or equivalent in Physics.

You will be required to meet Marie Curie Early Stage Researcher eligibility criteria. You can be of any nationality but must not have resided in the UK for more than 12 months in the last 3 years immediately prior to commencing in the role, and you must not have been awarded a Doctoral Degree. Applicants must be in the first four years of their research career.

The research training provided will comprise a broad portfolio of technical and transferable skills training on local and network level. The project will be part of a vibrant and stimulating international and inter-sectorial collaboration preparing excellently for a broad range of academic and industrial careers. Strong participation of non-academic partners and the interaction of academic and industrial partners is meant to raise awareness of career opportunities and to foster a culture of knowledge exchange and fruitful interaction between the academic and private sector, in particular to drive the emerging quantum technologies. You will attend a series of training workshops through the Network and will be expected to spend up to 6 months working with academic and industrial collaborators in the Network.

You will be supported for 3 years of full-time study to undertake a PhD, receive technical training at the University of Strathclyde, and be enrolled in the PhD program of the department under the supervision of Dr Gordon Robb, Dr Alison Yao & Prof Gian-Luca Oppo. You will also be enrolled in the graduate school of the Scottish Universities Physics Alliance (SUPA) and for the Postgraduate Certificate in Researcher Professional Development of the University of Strathclyde.

* The successful candidate will receive a financial package consisting of a living allowance, a family allowance (where applicable) and a mobility allowance, according to the rules for Early Stage Researchers (ESRs). The minimum salary will be approximately £32,470

Job Description

Brief Outline of Job:

To undertake a specific research project (optomechanics and nonlinear optics involving orbital angular momentum) under the general guidance of the PhD supervisor at the University of Strathclyde as part of the Marie Sklodowska-Curie Innovative Training Network, and to complete a PhD thesis based on this research. To attend training activities provided by the University and the project Network. To attend project meetings and collaborate with other researchers in the Network. To complete secondments with academic and industrial collaborators. To disseminate research results at relevant conferences and through quality journal papers.

Main Activities/Responsibilities:

1.	Plan and manage own workload in order to conduct research both independently and collaboratively as required by the project, refining the work programme as necessary in conjunction with the supervisor. This will involve regular communication with other researchers in the Network.
2.	Conduct individual research, including determining appropriate research methods and contributing to the development of new research methods. Carry out studies involving theoretical analysis, numerical simulations, visualisation and interpretation of results.
3.	Produce regular project reports and present these at project meetings.
4.	Write up research work for publications and a PhD thesis.
5.	Actively participate in research and training activities within the CoIOpt Network.
6.	Provide advice to other researchers and contribute to teaching support as required by, for example, helping to supervise project students working on related topics.
7.	Disseminate results in the scientific community through peer-reviewed publications and presentations at conferences, and in the non-scientific community via outreach and public engagement activities.
8.	Collaborate with colleagues on the development of knowledge exchange activities by, for example, participating in initiatives which establish research links with industry.
9.	Engage in continuous professional development.

Person Specification

Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1	Upper second class BSc honours or MSc degree or equivalent in an appropriate discipline

Experience

E2	Evidence of research experience through completion of projects or other relevant activity
D1	Experience in at least some of the areas of atomic physics, nonlinear optics, laser physics and quantum physics.

Job Related Skills and Achievements

E3	Ability to plan and organise own workload effectively
E4	Developing ability to conduct individual research work and to disseminate results
E5	Excellent presentation skills
E6	Excellent interpersonal and communication skills, with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences
E7	Ability to work both independently and as part of an interdisciplinary team

D2	Ability to tackle complex problems

Other Relevant Factors

E8	ESR eligibility: Has not resided in the UK for more than 12 months in the last 3 years; has not been awarded a Doctoral Degree; and is in the first four years of their research career and it cannot be more than four years since obtaining your first degree.

Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted before interview without permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter as a single document detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

Other Information

Further information on the application process and working at Strathclyde can be found on our website (http://www.strath.ac.uk/hr/workforus).

Informal enquiries about the post can be directed to Dr Gordon Robb, (g.r.m.robb@strath.ac.uk).

Probation

Where applicable, the successful applicant will be required to serve a 9 month probationary period.

Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from Payroll and Pensions.

Interviews

It is anticipated that formal interviews for this post will take place in late March .

Equality and Diversity

We value diversity and welcome applications from all sections of the community.

The University currently holds a Bronze Athena SWAN award, recognising our commitment to advancing women's careers in science, technology, engineering, maths and medicine (STEMM) employment in academia.



Conditions of Employment

Research Staff

1. GENERAL CONDITIONS

Members of staff are subject to the Charter and Statutes and the Ordinances and Regulations of the University, published in the Calendar, and to any amendments or additions thereto approved by the University Court and, in the case of the Charter and Statutes, the Privy Council. Staff are also expected to familiarise themselves with, and adhere to, general University policies and procedures, as published on University web pages.

The University Court recognises Strathclyde Universities and College Union (SUCU) as the sole body with which it will negotiate and consult on all collective issues concerned with the terms and conditions of employment of Research Staff. Such terms and conditions may be varied by the University Court after negotiation and consultation with SUCU.

Each member of staff is responsible for the proper performance of allocated duties to the person or persons specified in the member of staff's letter of appointment and any accompanying papers.

The University is committed to ensuring that its business is conducted in an open and transparent manner and will take all appropriate steps to address risks of bribery or corruption. Members of staff are required at all times to act honestly and with integrity and to safeguard the resources for which they are responsible. The University has in place a robust Public Interest Disclosure (Whistleblowing) Policy to enable concerns to be brought to its attention. This is available at www.strath.ac.uk/publicinterestdisclosure. Other relevant policies, e.g. Fraud Prevention and Conflicts of Interests, can also be found on the University's website.

Any member of staff may at any time be exposed to commercially sensitive information, information related to potentially valuable intellectual property or information which may otherwise be of a confidential nature. This information, which could be found anywhere in the University, may be written or disclosed orally, can include information of a commercial or technical nature, and may be owned by the University or by third parties. The University requires all employees to keep any such information confidential in the first instance and not disclose, publish or otherwise disseminate it without prior consent of the University. Such confidentiality obligations are commonplace and in the commercial interests of the University. When in doubt advice should always be sought from Research and Knowledge Exchange Services prior to disclosure.

The University operates probationary periods for new staff, the duration of which will be specified in individual letters of appointment. The normal probation period for posts in this staff category is 9 months for those at grades 6 and 7, and 12 months for grades 8 and above. Further guidance on probationary procedures is published at http://www.strath.ac.uk/staff/policies/hr/.

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Further information on the terms and conditions specified in this document and other staffing policies and procedures can also be found at www.strath.ac.uk/hr.

2. SALARY

Appointments are made at an appropriate salary point on the University's grading structure, with initial placing determined according to qualifications and experience. Increments are paid to staff on the 12 month anniversary of their appointment. Where this is not the first of the month, the increment will be paid on the first of the month directly after the 12 month anniversary. This allows 1 progression to the next point on the salary scale until the top guaranteed point of the scale is reached.

Salaries are paid directly to staff members nominated bank account, normally on the second last working day of the month.

3. HOURS OF WORK

Working time is that required to fulfil the duties of the post. The University Court recognises that research staff carry out these duties in a variety of ways appropriate to the nature of the research activity, but expects regular contact to take place between the research staff employee and the supervisor/grantholder (where these positions are occupied by different individuals) during normal working hours on week days. There are exceptions to this pattern which may involve contact at other locations or in the evenings, or at weekends, but these arrangement will be made with the agreement of the member of staff concerned.

Duties may, by arrangement with Head of Department/School/Director, include some teaching associated with the post (up to a maximum of 40 hours per semester) for which no additional payment will be made.

Additional work which does not fall within the scope of that described above may by arrangement attract payment which must be authorised and processed through the payroll.

4. HOLIDAYS

Annual leave entitlement is 31 days per year to be taken by agreement with the line manager. For staff members working on a part-time basis, holidays will be calculated on a pro-rata basis.

In addition to annual leave there is an entitlement to eleven public holidays per year which should be taken on days that the University is closed for this purpose. The University presently closes for four additional days over the Christmas and New Year period. **These additional days count against the annual leave entitlement.**

For staff members working on a part-time basis, public holiday entitlement will be calculated on a pro-rata basis.

Annual leave and public holiday entitlements should be taken in the leave year to which they relate. Up to five days leave can be carried forward into the new leave year subject to line management agreement. In exceptional circumstances, Heads of Department/School/Director may approve carry forward of accrued annual leave in excess of five days.

The University's expectation is that staff take all accrued holidays prior to their termination date. If staff have exceeded their entitlement the University will deduct an equivalent number of days pay from final salary payments.

5. SICKNESS ABSENCE

During any period of absence through illness or injury provided the appropriate notification and certification procedures have been followed the University will pay a member of staff (having taken account of the aggregate of all periods of absence due to illness during the twelve months immediately preceding the first day of the current absence) as follows:

Period of Continuous Employment at start of absence from work	**Full Pay**	**Half Pay**
Less than 1 year	1 month	1 month
1 year but less than 2 years	2 months	2 months
2 years but less than 3 years	4 months	4 months
3 years but less than 5 years	5 months	5 months
5 years or more	6 months	6 months

In order to manage the University's sick pay scheme the University requires to maintain sickness absence records on individual members of staff. When making payments after the expiry of statutory sick pay the University will deduct an amount equivalent to any benefit normally payable by the Department of Work and Pensions. For full details on the general University policy in this area please refer to the Sickness Absence Management Policy at www.strath.ac.uk/staff/policies/hr.

6. PENSIONS

New members of staff, aged under 75, will be admitted automatically to membership of the Universities Superannuation Scheme (USS) on taking up appointment. If you are already in receipt of a USS pension you will join USS in accordance with pension auto-enrolment regulations. USS requires a contribution from the member, currently 8 per cent of pensionable salary. A contribution, currently 18 per cent of pensionable salary, is paid by the University. From 1 April 2016 all members are part of the career revalued benefits scheme called the USS Retirement Income Builder. From 1 October 2016 a threshold, initially of £55,000 a year, will apply to the maximum salary that counts towards the USS Retirement Income Builder. From the same date a new defined contribution section of the scheme called USS Investment Builder will open and any contributions above the threshold will be invested in this section. The exception to automatic membership of the pension scheme applies if your post is located out with the UK in an EU member state. If this is the case membership of USS is not available to you.

New members of staff may opt out of USS within three months of taking up appointment and will then be treated as if they had never been a member of the scheme. After three months members of staff who wish to withdraw from USS during their employment will be required to give a minimum of 28 days' notice in writing to the University. Any member of staff who wishes to opt out should contact the Pensions Section, Finance, in the first instance (pensions@strath.ac.uk). Please note that if you are a member of Pensions Plus and withdraw from USS with less than two years of membership, or cease employment with the University and have less than two years of USS membership, the option of a refund of pension contributions will not be available to you. Instead, USS must provide you with a pension benefit that is payable from your retirement date.

The University reserves the right to alter or withdraw Pensions Plus as it sees fit or as required to comply with legislative changes. Withdrawal or amendment of Pensions Plus will not affect your membership of USS. If you do not wish to participate in Pensions Plus but wish to remain in the pension scheme please contact the Pensions Team who will provide you with a non-participation form.

Information regarding pension scheme membership can be found on the Pensions pages of the University's website. Full information regarding USS can be found on the USS website – www.uss.co.uk

7. PLACE OF WORK AND RESIDENCE

Members of staff will be based on the John Anderson Campus, unless otherwise stated in the letter of appointment. The Department/School in which the post is initially placed will be specified in the letter of appointment although there will be an expectation to work at such other places as required in the course of employment.

If the need arises for members of staff to work outside the UK for a period (or periods) of more than one month then such arrangements will be subject to mutual agreement. Members of staff would then be provided with a statement in advance setting out the terms covering such periods of employment.

The University does not normally place specific restrictions upon the place of residence of members of staff. All staff are, however, expected to reside in a location which is compatible with the satisfactory fulfilment of all the duties associated with their appointment.

8. CONSULTANCY/FURTHER ACTIVITIES

To support the strategic objectives of the University and to facilitate individual professional development, the University encourages staff to engage in professional activities with outside bodies related to their field of work. In many cases, such activity will be approved on the basis that it represents University knowledge exchange activity and should therefore be treated as part of the individual's overall workload and managed through the University's systems. It is also recognised that there will be some cases where an activity is entirely separate from the University and should thus be notified/approved as a personal business activity. For further information please refer to the "University Procedure in relation to Work for Outside Bodies including Consultancies", which forms part of the employment contract and can be accessed at .www.strath.ac.uk/hr

9. DISCIPLINARY AND GRIEVANCE PROCEDURES

Further information on the University's disciplinary and grievance procedure can also be found at www.strath.ac.uk/policies/hr or on request from Human Resources.

10. NOTICE AND TERMINATION

Members of staff are employed on the conditions indicated in individual letters of appointment and any accompanying papers. The University is not obliged to give notice of termination or continue any employment beyond the end of that period. Where the period of the contract of employment is for one year or less it may be terminated short of the fixed term period by one months notice on either side. Where the period of the contract of employment is for more than one year, or where there have been a further contract or series of contracts immediately consecutive, the employment may be terminated short of the fixed term period by three months' notice on either side, except during the probationary period when the notice period is one month.

If the appointment is for a fixed term it will expire at the end of the period without the necessity for notice.

Revised April 2016