University of Nottingham
UK | CHINA | MALAYSIA

Role profile

Job title	Research Associate/Fellow in Computational Materials Discovery for Super-radiant Lasers	Job family and level	RT4/a+ dependent on qualifications
School/ Department	School of Chemistry	Location	School of Chemistry, University of Nottingham, University Park, Nottingham NG7 2RD

Purpose of role

This theoretical/computational postdoctoral project will focus the prediction and development of novel optoelectronic materials, in particular new perovskite phases for super-radiant solid state lasers.

This is a full-time appointment for 1 year with the possibility for extension in the School of Chemistry, University of Nottingham in the group of Dr Katherine Inzani.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	**% time per year**
1	Develop and apply machine learning tools and algorithms to create a map of stable perovskite compounds with optoelectronic properties relevent to strong optical coherence and super-radiant emission.	30 %
2	Perform first principles calculations and analysis of optoelectronic properties of materials to identify targets for super-radient lasers.	30 %
3	Contribute to and actively participate in the design and execution of the overall objectives of the project to accomplish research goals.	10 %
4	Document research; publish papers in peer-reviewed journals, and present results within the community and at conferences.	10 %
5	Contribute to and actively participate in meetings with collaborators.	5 %
6	Contribute to the group culture, through group meetings, mentoring and assisting group members.	5 %
7	Activities towards personal career development and independence as a researcher.	5 %

8	Perform other duties as assigned.	5 %

Person specification

	Essential	Desirable
Skills	- Experienced in ab initio calculations such as density functional theory - Good communication skills both orally and in written English, suitable for the preparation of scientific reports and publications - A clear demonstration of good computational chemistry and programming skills in an interdisciplinary setting - Well organised and self-motivated with the ability to manage the day-to-day running of the project, to identify research objectives and carry out appropriate research activities within a given time-scale - Initiative and interpersonal skills with desire and ability to work in a collaborative, multidisciplinary team environment	
Knowledge and experience	- Evidence of experience in first principles optical and electronic structure calculations of materials	- Practical experience in machine learning tools and algorithms for materials discovery - Knowledge of topological properties and/or solid state lasers
Qualifications, certification and training (relevant to role)	- Hold a PhD (or be close to completion) in materials science, chemistry, physics or similar	

Athena SWAN Silver Award

The University of Nottingham is focused on embedding equality, diversity and inclusion in all that we do. As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those with protected characteristics under the Equality Act 2010.

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

Valuing people	Is friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
Taking ownership	Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
Forward thinking	Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
Professional pride	Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
Always inclusive	Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

Key relationships with others