

**THE UNIVERSITY OF NOTTINGHAM**  
**Role Profile**

<b>Job Title:</b>	Research Associate/Fellow in the Theory of Quantum Simulation with Rydberg Systems
<b>School/Department:</b>	Physics and Astronomy
<b>Job Family and Level:</b>	Research and Teaching Level 4 Training Grade/Level 4
<b>Contract Status:</b>	Fixed-term until 31 March 2020, available from 1 April 2018
<b>Hours of Work:</b>	Full-time (36.25 hours per week)
<b>Location:</b>	School of Physics and Astronomy, University Park
<b>Reporting to:</b>	Prof. Igor Lesanovsky, Dr. Weibin Li

**Purpose of the Role:**

The main responsibility of this post will be to carry out independent research on the development of many-body models of Rydberg ions/atoms confined in electric/optical traps, and to apply and/or develop analytical and numerical methods for exploring their strongly correlated dynamics and stationary states. The researcher is moreover expected to actively contribute to the research activities of the condensed matter theory group at the School of Physics and Astronomy.

**Main Responsibilities**

1.	To develop many-body models of Rydberg ions/atoms confined in electric/optical traps.
2.	To apply and/or develop analytical and numerical methods for exploring strongly correlated dynamics and stationary states of the many-body models.
3.	To analyse and interpret data and bring new insights to the research area.
4.	To produce written reports and oral presentations to communicate the results to the line manager, internal and external collaborators, and for publication.
5.	To identify opportunities and assist in writing research grant applications.
6.	To help co-ordinate collaborations with existing research partners, form new collaborative relationships and identify further opportunities for collaboration.
7.	To co-ordinate the operational aspect of research, for example, arranging meetings.
8.	To provide support, guidance and supervision to other staff, where appropriate in own areas of expertise.
9.	To help supervise postgraduate students projects.

**Knowledge, Skills, Qualifications & Experience**

	<b>Essential</b>	<b>Desirable</b>
<b>Qualifications/ Education</b>	<ul style="list-style-type: none"> <li>BSc/MPhys Degree (or equivalent) in Physics</li> <li>PhD (or near completion) in Physics related to the subject</li> </ul>	
<b>Skills/Training</b>	<ul style="list-style-type: none"> <li>Good written and oral communication skills</li> <li>Good inter-personal skills</li> <li>Ability to work independently</li> </ul>	
<b>Experience</b>	<ul style="list-style-type: none"> <li>Strong background in theoretical</li> </ul>	<ul style="list-style-type: none"> <li>Strong track record in</li> </ul>

	physics • Background in atom-light interactions (trapped ions and quantum optics)	analytical and/or numerical treatment of many-body systems
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