**Job Title:** Senior Research Associate/Research Associate in the Theory of Cold Atoms and Long-Range Radiative Dipolar Interactions  
**Present Grade:** 6/7  
**Department/College:** Department of Physics

**Directly responsible to:** Prof Janne Ruostekoski  
**Supervisory responsibility for:** N/A

**Other contacts**  
**Internal:**  
Department and faculty academic colleagues and PhD students, departmental and faculty administration  
**External:** Experimental/theory collaborators at Palasseau, Aarhus and New York

**Major Duties:**

The job is to work with Prof Ruostekoski on radiative long-range dipole-dipole interactions between the atoms and their cooperative behaviour. The light-mediated interactions can be engineered and manipulated for applications in quantum technologies and to simulate novel strongly interacting quantum systems, e.g., in the context of hybrid systems of atoms and nanophotonic structures. Experience on numerical and analytic techniques is essential, as well as experience sufficiently closely related to many-body physics, cold atom physics, quantum optics, computational physics, quantum physics.

In particular it is expected that the role holder will carry out a research programme overseen by Prof Ruostekoski. The role will involve numerical and analytic studies of the interaction of light with cold and dense atomic ensembles and the application of these systems to high precision measurements. A successful candidate will be able to conduct research both independently and in collaboration, and organize own research activities to deadline and quality standard. The successful candidate will also be able to collaborate with experimental project partners.

The role holder will contribute to research papers, including high impact peer-reviewed academic journals, and will travel to disseminate results at national and international conferences. They will foster links and networks with researchers in similar fields at different institutions.