

Nottingham's interests in the Casimir effect include:

1. Using the Casimir-Polder interaction to induce quantum reflection of ultracold atoms approaching microengineered surface structures, especially the development of structures that enable high quantum reflection probabilities
2. The effect of Casimir interaction on the equilibrium and dynamical properties of ultracold atoms in atom chips. Here, we are interested in tailoring the interaction to enable miniaturization of the atom chips
3. Using ultracold atoms to probe the Casimir potential landscape around non-planar surface structures. We are interested in calculations of such potential landscapes and the possibility of making experimental tests of these calculations: to identify regimes of applicability of present theoretical work and areas where development is required.