Geometry and fluctuation induced (Casimir) forces SHOMEEK MUKHOPADHYAY, EHSAN NORUZIFAR, UMAR MOHIDEEN, University of California, Riverside — Since the original prediction of attraction between parallel, perfectly conducting plates by Casimir there has been significant amount of work done in extending the calculations to real materials, finite temperatures and micro or nanostructured geometries. Majority of the experimental work has been carried out in the sphere-plane geometry. In this talk we will present ongoing experimental work on sphere–cylinder and sphere–cone geometries using frequency modulated atomic force microscopy. We will discuss numerical results in the sphere cylinder geometry and the range of validity of the point force approximation (PFA).