

Hydrodynamics and Bubbles in Small Spaces



Professor William Ducker

Thursday 22nd May

**Engineering Theatre C1, Room 407, level 4
University of Melbourne
Parkville Campus**

11am – 12pm

I will describe my recent contributions to advances in our understanding of surface and interfacial forces in two areas. In the first part, I will discuss recent evidence for the existence of interfacial nanobubbles. These bubbles are interesting because they are thermodynamically unstable and therefore unexpected, but may be important in understanding interfacial phenomenon such as the hydrophobic force.

In the second part, I will describe our measurements that attempt to resolve the question: what is the boundary condition for fluid flow at the solid-liquid interface? It is traditional to use the no-slip boundary condition, but recent high-resolution measurements motivated by microfluidics suggest that the no-slip boundary condition is violated at small dimensions. I will describe strong evidence that the no-slip boundary condition is accurate even for channels that are only tens of nanometers wide.

Farewell drinks will be held for William from 4pm in the Chemical and Biomolecular Engineering tearoom on the 3rd Floor of Building 1