



**Wolfson Department of Chemical Engineering Seminar
Lecture Hall 6, Wolfson Department of Chemical Engineering,
Wednesday October 24th at 1:30pm**

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On deformation of drops and bubbles in viscous fluids

Emulsions containing drops and bubbles are common in food stuffs, medicine, processes with interfacial reactions and molecular transport through surfaces of immiscible phases. Interfaces are an important issue in such systems. We present a review of results of studies of deformation of a drop in a flowing viscous fluid, from the early works of G. I. Taylor until present days. Mathematical analyses will not be presented. The flows considered are uniform and linear. Among the cases discussed are diversions from spherical shapes in uniform and linear flows, and the effects of extension, compression and shear. We shall review sheared and extended long slender bubbles and low viscosity drops, flat drops due to compression, and the appearance of curious toroidal structures. Some examples of non-Newtonian drops are presented, and sampled applications to simulate biological processes are discussed. The existence of multiple stationary structures in linear flows is illustrated. Stability of the various shapes is discussed. Some examples of non-Newtonian are presented as well. Future work in our department is also presented.

Refreshments will be served at 1:15pm