

## **FORMATION OF COMPOSITE DYKES**

*Composite dykes form when two magmas of differing viscosity are forced into a crack. In this demonstration the oil represents the more viscous magma and the water the less viscous magma.*

*Liquids: Duckhams high grade petrol engine oil 15W/40 and water*

*Container: clear plastic with internal dimensions of 5cm by 5cm (your physics department will have one)*

*Wood: 2 pieces 5cm 2cm by 20cm and one pieces 1cm by 5cm by 10cm  
The wood pieces are held together at the top by nut and bolt. Round the corners and then check that the wood fits into the container.*

*Pour water into to the container until it is 2cm deep and then oil so that it forms a layer on top of the water 1cm deep. If you have too much oil or water it will spill over the top when the wood is pressed.*

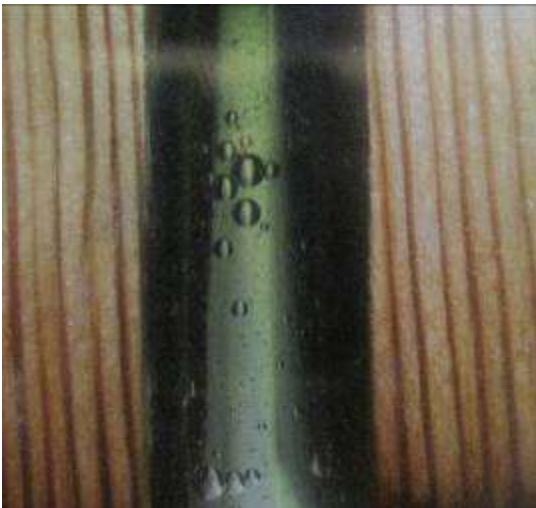
*Slowly and carefully press the wood into the container. You will see a layer of water with oil on each side enter the gap. Varying the thickness of oil changes the thickness of oil either side of the water as it intrudes.*



*Close up showing oil and water with a 5mm layer of oil*



*The whole apparatus*



*Close-up showing oil and water with a 10mm layer of oil*