SUPERVISED WORK 2

Exercise 01:

1) What is the influence of temperature on viscosity?

2) Convert the stock to m2/s.

3) Determine the dynamic viscosity of olive oil knowing that its density is 0.918 and its kinematic viscosity is 1.089 Stocks.

Exercise 02:

Oil with a dynamic viscosity equal to μ = 0.0766 Ns /m² flows along a section with a velocity profile (u) given by the following expression:

u = 29.26 y - 351.13 [m/s]

Where y is the distance to the wall. Determine the shear stress at the wall.

Exercise 03:

Find the surface tension of a 40 mm diameter soap bubble when the internal pressure is 2.5 N/m2 greater than atmospheric pressure.



Exercise 04:

Calculate the capillary height in a glass tube of 2.5 mm diameter when it is immersed vertically in: 1)- Water; 2)- Mercury

We take: $\sigma = 0.0725$ N/m for water and $\sigma = 0.52$ N/m for mercury in contact with air. The relative density of mercury is equal to 13.6. The contact angle q of water is equal to zero and that of mercury is equal to 130°. The gravity g is taken equal to 9.81m/s².

