

# **Abstract**

## **Rheological and behavior of AL-Basrah crude oil**

The rheological properties of AL-Basrah crude oil have been investigated using brook field viscometer model (LVDV-II tp).

The rheological behavior of AL-Basrah crude oil has been studied and a series of experiments was conducted. The experiments were performed in terms of studying the effect of temperature  $T$ , shear stress  $\tau$ , shear rate  $\dot{\gamma}$ .

The results indicated that the behavior of AL-Basrah crude oil was non-Newtonian (dilatants) .

The viscosity of AL-Basrah crude oil can be reduced by in average of (25%) by heating from 10 C° to 20 C° and (44%) by heating from 20 C° to 60 C°.

The relation between viscosity and temperature was also studied and give the correlation coefficient (0.947).

$$\mu = 0.0591 * e^{2116/T}$$

and the reciprocal of kinematic viscosity with temperature was also studied, and the correlation coefficient give (0.969).

$$\nu = [ 0.0073 * e^{0.0219T} ]^{-1}$$