CHAPTER 3

METHODOLOGY

3.1 Chemical

The chemicals, crude oil, cyclohexane (99.5% purity), acetone (99.5% purity), petroleum ether obtained from the supplier Sigma-Aldrich. While n-hexane (98% purity) is obtained from the supplier SupraSolv®, toluene is obtained from the supplier Bendosen, and methanol is obtained from the supplier Fisher Chemical.

Figure 3-1: Paraffin wax

3.2 Equipment

3.2.1 Cold Finger Device

Cold finger device was used to study the wax deposition effect. This device consists of two cold fingers connected at a circulating water bath. The circulating water bath controls the temperature of each cold finger at a regulated flow rate that is determined with a digital flow meter. The cold fingers temperature was control by chiller to monitor the inlet and outlet water temperature to the cold finger. The cold finger is centred within a jar assembly filled with model crude. The jar assembly is
placed inside a second water bath, which is used to control the temperature of crude oil. In the middle of the crude oil vessel, the impeller was attached to control the rotation speed. The temperature of the crude oil in the vessel was maintained by hot water bath and set at 50°C (Weispfennig, 2005)

Figure 3-2: Overall Equipment
Figure 3-3: Cold Finger Device

Figure 3-4: Jar