



Sources of Hydrocarbons

- The main source of hydrocarbons is or
- Petroleum is formed from the remains of plants and animals that perished at the bottom of the ocean, millions of years ago.
- Petroleum is a mixture of simple or long-chain
- Petroleum cannot be used before processing. It needs to be refined into its constituents through a process.
- The two stages of oil refining are and

- The van der Waals force between molecules gets stronger as the molecule size increases.
- The boiling point of hydrocarbons increases as the molecule size increases because more energy is needed to overcome the force.

The fractions of hydrocarbons in petroleum are separated at different temperatures according to the size of the hydrocarbons.

Long chain hydrocarbons are cracked into smaller molecules at a high temperature using a catalyst.

Fractional Distillation



Photograph 2.1 Petroleum fractional distillation process at an oil refinery

- During the fractional distillation process, petroleum is heated and streamed into a distillation tower as shown in Figure 2.2.
- The fractions in petroleum can be separated because each fraction of the hydrocarbons has its own boiling point.
- Hydrocarbons with a lower boiling point will vaporise first, and then of the tower before condensing and separating.
- Hydrocarbons with a higher boiling point are collected at the of the tower and will condense into liquid.
- There are two main uses of hydrocarbon compounds derived from fractional distillation:
 - (a)
 - (b) As for the petrochemical industry.

