* Why are C-H bonds non polar

Using Pauling's scale - C (2.55) and H (2.2) the electronegativity difference b·w these two atoms is 0.35. Bcz of this small difference in E·N the C-H bond is generally regarded as being non-polar

* Melting Point Of Alkane

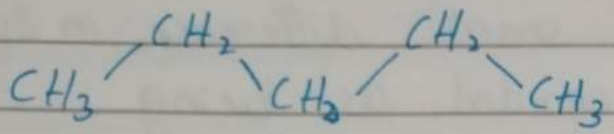
Similar to the boiling points, the melting points of alkanes also increase with increase in their molecular mass, but there is no regular variation in melting point.

The melting points of alkanes depend not only upon the size and shape of the molecules, but also on the arrangement (i-e the packing) of the molecules in the crystal lattice.

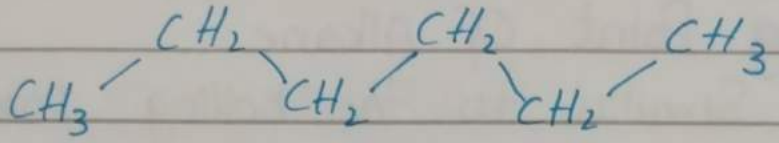
In alkanes, each carbon atom is sp^3 hybridized which results in a bond angle of 109°.

In straight-chain hydrocarbons the carbon atoms are arranged in a zig-zag way in the chain. If the molecule contains an odd number of carbon atoms, the the two terminal methyl groups lie on the same side. So the interaction b·w alkane molecules, with odd number of carbon atoms, is less than the molecule with even number

of carbon atoms, in which terminal methyl groups lie on the opposite sides.



n-Pentane



n-Hexane

Alkanes containing even number of carbons atoms are more symmetrical and can be more closely packed as compared with alkanes containing odd number of carbon atoms.

Van der Waal's forces of attraction is stronger, due to which they have higher melting points. Therefore, the alkanes with odd number of carbon atoms have lower melting point than those having even number of carbon atoms.