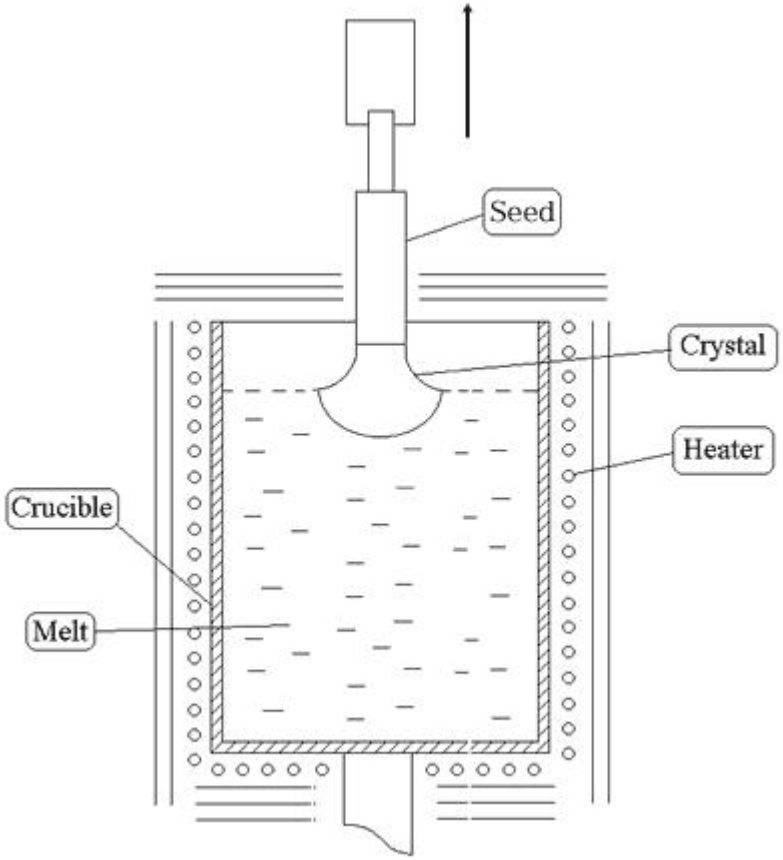
Kyropulos Method

The crystallization process starts near the seed because this is the point where the melt has the lowest temperature. The shape and size of the crystal depend on the thermic field. Due to the difference in the crystal and melt concentration the level of the melt is steadily lowered. The growth speed is approx 0.15 kg/hour. The crystal diameter depends on the size of the crucible and is currently up to 250 mm. The process is highly automated.



Method's Features: Kyropulos method is used to produce large sapphire boules of a cylindrical form. As-grown boule can be from 70 up to 250 mm in diameter and up to 300 mm in height. Sapphire grown by this method has a very high optical quality (1^{st} - 4^{th} **material grade**), and can be cut into wafers of any crystallographic orientation. This method is quite effective for manufacturing substrates for blue LEDs and SOS wafers though it does have some limitations for making C-plane Ingots/blanks larger than 4" in diameter.