

# **Exploring alternative materials for construction of centrifugal pumps**

**A Rama Rao, G Ravi babu, H V Hema kumar, D Bhaskara Rao and V Srinivasa Rao**

College of Agricultural Engineering, Bapatla.

## **ABSTRACT**

The centrifugal pumps are mostly used devices for pumping in Indian agriculture. Therefore, a study was under taken on the centrifugal pumps components like impeller, shaft, casing, wear rings, usually construct with existing materials like cast-iron, carbon steel, stainless steel, bronze etc. It was found that the present existing centrifugal pumps have many technical disadvantage related to its weight, corrosion, high power consumption and less efficient etc. During the study, it was found that these technical disadvantages can be overcome by replacing the metallic parts of pumps with the engineering plastic materials. There are polymeric materials like PPO (Poly Phenylene Oxide) or Noryl, Delrin, Vespel, Zytel and PEEK (Poly Ether Ether Ketone) are commercially available in the market. They can be used to fabricate key pump components.

**Key words:** *Centrifugal pumps, existing materials, polymers, properties and characteristics*