

## **A Method for Defluoridation of Groundwater Using Corn Cob and Leca Balls**

**Seeking parties interested in licensing and commercializing of technology.**

### **Applications:**

- Water detoxication method which can be integrated as part of water purification system for removal excess of fluoride in the ground water.

### **Technology Description:**

The method comprises the steps of filling consecutive filter layers of a serial filter with corncob pieces, corncob powder, corncob charcoal and surface modified LECA (Lightweight Expanded Clay Aggregate) balls respectively from top to bottom acting as absorbents. Each layer is provided with quantitative filter paper also called as ash-free filter paper for better filtration. The LECA balls are prepared by a process comprising of mixing of roughly powdered 10mg LECA balls with 100ml 0.01M nitric acid solution and heating the solution at a temperature of 105°C for 48 hours; filtering the solution with 1mm filter paper. The content is then washed 8 times with distilled water and then the final content is heated at 105°C for 48 hours. The content is then powdered finely and is mixed with 0.5M sodium hydroxide solution and stirred with magnetic stirrer for 4 hours at 70°C. After air drying the solution for 48 hours, it is subjected to centrifugation for 10-15 minutes at 3500-4500 RPM and the sample is heated at 105°C for 24 hours.

### **Advantages of the Technology:**

- Prevents diseases like skeletal fluorosis and dental fluorosis by removing the excess of fluoride in the ground water.
- Eco friendly method without the usage of electricity

### **Development Status:**

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|----------------------------|-----------------|
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### **Inventors:**

- Saravanan J
- Sridhar M
- Sona Tahseen C.K

**Technology Transfer from the institute:** For more details