**RELEVANT FACTS AND FIGURES**

- Arsenic (As) poisoning (a medical condition) is caused by elevated levels of arsenic in the body.
- The pathway of arsenic poisoning is ground water containing high concentrations of arsenic.
- 140 million people in more than 70 countries are affected by arsenic poisoning.
- Several thousand deaths per year in Bangladesh are caused by arsenic related diseases.
- Prolonged use of arsenic contaminated water causes cancer affecting skin, lungs, and kidneys.
- Poultry feather is composed of protein known as keratin (also found in skin, hair, nails and horns).

**PROJECT OBJECTIVE**

- Modification of chicken feathers (CF)
- Characterization of modified CF
- Preparation of arsenic removal filters using chemically modified material

**PROBLEM**

- As is an environmental contaminant i.e. soil, groundwater and plants.
- As enters water through a combination of natural sources and anthropogenic activities.
- Activated alumina, carbon, iron oxide sands, metal loaded resins and bauxsol have been used to remove As from H₂O; they are expensive and/or inefficient at removing As(III).

**POTENTIAL BENEFITS**

Utilization of modified chicken feathers (CF) as biosorbent to remove arsenic has several social, economic and environmental benefits:

- Development of biodegradable and environmentally friendly filters;
- Saving lives of millions of people in developing countries by reducing risk of arsenic poisoning and improving the well-being of the affected population;
- Creating new “green” industry and providing jobs at grassroots level.

**RESULTS AND DISCUSSION**

**SORPTION CAPACITY OF MCF**

**CONCLUSIONS**

- Successful modifications of CF
- Successful filtration of As (III)
- Designing of MCF supported filter

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