

Use of Ceramic Membrane in Water Treatment Technology Over Traditional Process for Surface Water Purification

Sumit Kumar Khan^{*} and S. N. Roy

Dept. of Civil Engineering, School of Engineering & Technology, Adamas University, Kolkata-700126, India

*Corresponding author

ABSTRACT

The problem of fresh water is made worldwide impact. The continue shortage of fresh water sources may be affected by increasing populations with their activities. Now a day our country, India, faces big problem of fresh water where in many states have facing scarcity of fresh drinking water mainly in villages and rural area. People suffer various type of water borne diseases and inorganic toxic contaminants both from using treated surface/sub-surface/ground water sources. This situation motivated to the researchers and scientist to find the cheapest solution as the traditional method. One of the solutions propose to solve this problem to treat contaminated water especially surface water and make suitable for drinking water by removing of various type of pathogen, vinous, bacteria, turbidity and inorganic component (heavy metals).

This article proposes recent trends in surface water treatment technology over traditional process, the study clearly shows that alumina-clay based low-cost ceramic MF membranes (with a nominal pore size of 0.2 mm) and UF membranes over these low-cost MF membranes (with a nominal pore size of 0.01 mm) are highly capable of removing particulate matter (turbidity) and microorganisms. In fact, the research results show that, when it comes to these contaminants, membrane-treated water was of much better quality than that produced by the best conventional filtration plants. From the above studies it is apparent that low-pressure membranes are highly effective for particulate removal, while high-pressure membranes are effective for dissolved matter removal (both organic and inorganic). In the design of large-scale membrane systems are continually lowering their capital cost and making them increasingly cost competitive with conventional treatment processes.

Keywords: Contaminated water, MF & UF membranes, filtration

