



COMPARITIVE STUDY OF MBR AND CAS WASTEWATER TREATMENT SYSTEM

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ABSTRACT : This Paper deals with comparison of membrane bioreactors with conventional activated sludge systems for wastewater treatment. There are many water shortage problems currently in India, some of which are more serious public concern over health and the environment combined with the increased requirements for municipalities to reuse wastewater, have created a need for new technologies that can treat wastewater to generate high quality reusable water at low cost. In several of these technologies, membrane technology could make a great contribution since membrane have the ability to produce water of exceptional purity that can be recycled for reuse in a variety of places. In this papers, several aspects of MBR are covered, with an exhaustive over view of its biological performance different configurations and hydraulics of MBR are prevented, with attention given to fouling phenomena and strategies for reducing it. Also, the high quality of MBR effluent is discussed, whereas in comparison with CAS removals of organic matter, ammonia, phosphorous, solids, bacteria and virus are significantly enhanced. Finally advantages and disadvantages of MBR aver CAS is concerned. In conclusion, MBR represents an efficient and cost effective process that copes excellently with the growing and cost effective process that copes excellently with the growing needs for transforming wastewater into clean water that can be returned to the hydrological cycle without detrimental effects. There is, therefore the growing demand for greener/sustainable technologies for reuse/recycling of wastewater and the membrane bioreactor treatment of these effluents has shown some greater potential as it is much cleaner and meet stringent discharge requirements that with other techniques.

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I. INTRODUCTION:

There are several technologies or systems that are currently in use for waste water treatment. MBR is the most recent development in waste water treatment technology which requires huge capital investment. The selection of a wastewater treatment system for any community by governmental officials can be a challenge, because there are so many components that must be taken into consideration. With the advances in Membrane technology, strategies to reduce operating costs, and increased membrane production. MBR treatment technology has become cost competitive with CAS treatment technology for situations which require lower efficient nutrient limits or water reuse. This Research expands upon prior work by examining how variations in key design, construction, and operational & maintenance cost parameters can impact the point at which one treatment system is a more cost effective process compared to the other treatment system to meet particular sets of flow variations. Treatment of wastewater by membrane technology is an established alternative, particularly in sensitive areas, water scarce regions, and in case in which wastewater reuse and recycling is required. Industries where the membrane bioreactor technology can be implemented includes chemicals, cosmetics, dairy, automotive, petrochemical, pharmaceutical, fire chemicals, pulp & paper, landfill, food, textiles etc. Several researches explored the classification, characteristics, subcategories, configurations and performance of MBR technology. The MBR applications are expected to continue to increase in wastewater treatment, with the drivers being, the need for compact