

Abstract of Presentation

Presentation Title:

Development of Integrated Filtration System for Water Treatment and Wastewater Reclamation in Developing Countries

Abstract:

Simple water treatment system utilizing floating plastic media followed by sand filter was developed for the treatment of surface water and secondary effluent from sewage treatment plant. PACl was found to be the most appropriate coagulant in the system in which total particle retention of more than 95% could be achieved. The use of zeolite bed in place of sand filter during secondary effluent treatment helped removing ammonium nitrogen meanwhile phosphorus was removed by chemical precipitation in the floating filter. The final effluent could be reused for non-potable purposes. In subsequent study, the sand filter used in second treatment step was replaced by microfiltration membrane to enhance pollutant removal efficiencies. The system was applied to the treatment of surface (river) water. High retention of turbidity, natural organic matter and water-borne microorganisms in the system was achieved. Moderate virus removal was also detected.