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**CHEMISTRY FOR GROWTH  
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**ABSTRACTS BOOK**

Chemistry Department

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### Removal of Electrolytes and E.coli from Groundwater Through Nanofiltration

Qazi Iqra<sup>1</sup>

<sup>1</sup>University Of Engineering And Technology Peshawar, Peshawar Pakistan

#### Abstract

The present work investigates the synthesis of composite nanofiltration membrane and its application for the removal of complex electrolytes and e. coli from groundwater. A novel PIPCSP/TMC, flat sheet nanofiltration membrane was synthesized following the previous published work. The cross flow experimental runs were carried out for 2.5 hrs. under operating pressure ranges (1-5 bar). The effects of pressure on permeance, rejection and flux were determined. An electrolytes solution of KCl, was passed to test the membrane for pure water flux and solute rejection. Single binary ion solution shows rejection of K<sup>+</sup> (26%), and Cl<sup>-</sup> (95.5%), with a pure water flux upto 224 L.m<sup>-2</sup>.hr<sup>-1</sup>. The model solution of an e.coli after passing through membrane gives an e.coli rejection (100 %) with pure water flux up to 211.5 L.m<sup>-2</sup>.h<sup>-1</sup>. PIP-CSP/TMC nanofiltration membrane showed high resistance to fouling and exhibited consistent results in continuous operation 4up to 50 hrs. in cross flow mode.

**Keywords:** E.coli, PIP – CSP / TMC NF Membrane, Electrolytes, Treatment Of Ground Water, Cross Flow Membrane

#### Bibliography