MANUFACTURING THIN FILM COMPOSITE REVERSE OSMOSIS MEMBRANE FOR DESALINATION AND WATER PURIFICATION

BRIEF DESCRIPTION:

The Technology covers the process for manufacturing low fouling thin film composite (TFC) reverse osmosis (RO) membrane in two steps using the semi-automated machinery which were designed and fabricated in the laboratory. The first step in the process is the preparation of poly-sulphone porous support having about 30-40 micron thickness on a non-woven polyester fabric according to wet-phase inversion method at a scale of 1m width x 100-500 length and at the rate of 2-10 meters/min. NaCl rejection with water flux of 50-65 liters/m2 h. Technology has also been developed for making spiral modules of different size from the flat sheet TFC membranes.

Comparative Advantages:

Fabrication of TFC membranes (100x100 m2) with indigenously designed and developed semi-automated polysulphone casting and TFC polyamide coating machines.
Cost Improvement of fouling resistance property of the TFC membranes by simple and robust post treatment method and thus improvement in the membrane life.
Improvement of chlorine stability by simple and robust post treatment of the TFC membranes.
Effective technology for preparation of TFC support membranes and polyamide TFC membranes thereof.
It has low fouling, high flux and high rejection thin film composite reverse osmosis membranes at commercial scale levels at the rate of 20-25 m/h using semi-automated machinery

Scale of Development: Already Commercialised

