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Salt Repellent Behavior of Superhydrophobic Filtration Membrane

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In this study, we present the salt repellent behavior of superhydrophobic filtration membrane. Bio-fouling or mineral-fouling is the main factor of decreasing the performance of filtration membrane. The superhydrophobic modification of filtration membrane using PECVD (Plasma enhanced chemical vapor deposition) is introduced. The oxygen plasma was introduced for developing nano hairy structures and subsequent HMDSO (Hexamethyldisiloxane) coating was used for enhancing low surface energy. Saline water evaporation test was carried out to evaluate the difference of contamination of salt on superhydrophobic and moderately hydrophobic filtration membrane. EDS and EPMA were used for visualizing the residue of salt crystal.

Keywords: salt repellent, superhydrophobicity, filtration membrane