

## Effect Temperature Treatment on Physicochemical and Water Permeability Properties of Polysulfon Modified Membranes

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### Abstract

The temperature treatment on casting of Polysulfon (PSF) modified membranes have investigated to study physicochemical and water permeability membrane properties. The PSF modified membranes was prepared by UV-photografting technique with different temperature treatment (25 – 100 °C). The physical and chemical characterization of membranes include functional group analysis, degree of grafting, whereas water permeability was carried by water flux test. As the result, the functional group analysis showed that there were the new functional group in modified membranes. Increase temperature treatment, increasing degree of grafting, whereas the water flux decrease with increase temperature treatment.

**Keywords:** Modified membrane, UV-Photografting, physicochemical, water flux

### Introductions

The modified membranes via UV-photografting technique have many used for various purposes such as to improve hydrophilicity (Helin, et.al, 2008; Heru et. al, 2007) and to make charged membranes (Dai, et.al 2008); . The grafting using UV radiation have advantages such as simple, inexpensive and easy to operate (Qiu, et.al, 2006). The successful the UV-photografting process depend on intensity and time radiation, monomer concentrations, structure of membranes.

The asymmetric membrane is a structure membrane that have different structure in the toplayer and sublayer. The form of membrane structure affected on selectivity and permeability parameters. There were some factor that affected on form of structure membranes include choice polymer, solvent, nonsolvent, composition casting solutions and and temperature casting (Mulder, 1996). In this paper, would be reported preparation of modified PSF membrane via UV-photografting technique The thermal treatment with various temperature (25, 50, 75 and 100 °C) when process of the membrane formation will be studied their influence on physical and chemical properties.