

Surface Modification of PES Membrane Using Laser Irradiation

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Laser irradiation of the Nd:YAG type was applied to modify the surface characteristics of a commercially available polyethersulfone (PES) membrane to decrease its protein adsorption affinity. Effect of parameters including the number of pulses and grafting hydrophilic functional groups on the physico-chemical properties of the surface and in particular its wet ability and Bovine Serum Albumin (BSA) adsorption was studied. ATR-FTIR was used to access grafting of hydrophilic group as well as other chemical changes on the surface. Wet ability and BSA adsorption were determined by measuring the contact angle and SEM respectively. Results obtained in this study illustrate a good potential in application of laser radiation in development of membranes with desirable futures.

Key words: Laser Irradiation, PES, Membrane, BSA Adsorption, Surface Modification.