



Experimental Study of the Liquid Film Flow on Rotating Disc Contactor of Rough Surface Partially Immersed in Liquid Bath

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Abstract : Several studies related to the viscosity liquid film flow on the surface of a flat disk that rotated vertically have been done by other researchers, both experimental and numerical models. But the difference is that, this study using tap water with low viscosity. In addition this study analyzed the influence of surface roughness factor on the profile of liquid films. In this study, the liquid film thickness profile was measured when it was dragged to follow the vertically rotating disk. The disks were distinguished between hydrophilic and hydrophobic. In some literature, it is explained the factors that influence the thickness of liquid film is the radius of the disk, the angular velocity, viscosity and surface tension. Furthermore, in this study, it was identified that the thickness of liquid film is also influenced by the surface roughness of the disk. The results showed that the liquid film was able to attach well on the hydrophilic surface compared to hydrophobic one. In addition, the liquid film thickness profile was also more evenly to the edges of the disk and was able to reach the top when the disk emergence from the liquid surface in the trough.

Keywords : liquid film, vertically rotating disk, surface roughness.

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