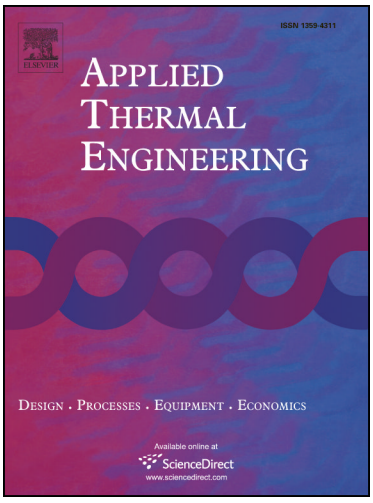

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Development of an oil free water-lubricated twin-screw air compressor

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Abstract. Due to the growing need for the compressed air of higher quality, the water-lubricated twin-screw compressor with water as the only liquid in the compressor has drawn much attention to produce clean air absolutely free of oil. This paper presents an experimental study on the developed water-lubricated screw compressor to investigate the compressor performance under the influence of rotating speed, discharge pressure, water injection flowrate and water injection mode. The aim is to search proper operating parameters to achieve the power saving and efficiency improvement of the compressor. The results may provide some reference for the development and improvement on the water-lubricated air screw compressor in the future work.

Keywords: water-lubricated; screw compressor; water injection; performance; oil-free air