

다단압축기와 터보 압축 냉각시스템의 모사 및 최적화

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Compressed dry air is an essential utility used in a variety of processes in LCD (Liquid Crystal Display) production industry. Also, chilled water is a utility often used to cool a building's air and equipment, especially in situations where many clean rooms must be controlled continuously. This study first presents hybrid modeling method to predict the overall efficiency and actual power consumption of the compressors and chiller systems. Due to insufficient measurements at the interstages of the multistage compressors, a modified thermodynamic model is developed. Also, Artificial Neural Network is used as the blackbox model for its superiority of modeling nonlinear systems. Using the constructed models of compressor and chiller system, optimization procedure is applied to search optimal conditions in varying demand of total capacity.