

Development of Steam Optimization and Evaluation Methods for the Industrial Complex

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There have been many attempts to reduce energy consumption and environmental contaminations in chemical companies. However, there seem to be no significant energy saving opportunities in individual plants these days. For that reason, we should optimize energy consumption from the aspect of the entire industrial complex. Also the optimization method should be assessed using moderate evaluation techniques to validate the results. In this work, we suggested steam networking matrices for steam exchange between companies to reduce energy consumption by optimizing the steam network of an imaginary chemical complex. Moreover, the optimization method was assessed using three kinds of evaluation techniques: economic, environmental and technical evaluation. Results show that we can reduce not only operating cost and energy consumption but also carbon dioxide emissions by constructing new steam exchange networks.

Acknowledgement

This work was supported by Center for Ultramicrochemical Process Systems sponsored by KOSEF.