



SCIENTIFIC & RESEARCH PROJECTS

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Project Title:

Generalization of Decomposed Integration Methods for Cost Effective HEN with MCL

Abstract:

At many circumstances, in heat exchange processes several exchangers were used with different cost laws due to their pressure ratings, materials of construction and exchanger types. In such circumstances traditional methods of pinch technology cannot be led to minimum total annual cost may cause some other disadvantages like more complexity or higher maintenance. In this research work a new approach based on decomposition has been used to achieve the cost-effective networks with multiple cost laws. The cost laws multiplicity can have several reasons. The most common cases are mixed pressure ratings, mixed types, and mixed materials of construction however many other factors such as purchasing exchangers from different vendors or purchasing exchangers in different times can also cause multiplicity cost laws.

The present paper demonstrates application of two decomposition methodologies (Total decomposition and Partial decomposition) for a few sample conditions with typical cost laws. The outcomes of this study indicate effectiveness and potentiality of the methods.