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Pinch analysis of Acrylic Acid Process Plant

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Abstract : This study deals with design and heat integration of acrylic acid process plant. This work is divided in to two parts. In the first part acrylic acid process was designed using ASPEN PLUS V8.8. In the second part, pinch analysis was applied using ASPEN ENERGY ANALYZER and a base case HEN was developed. The base case performance was improved with Retrofit analysis. The retrofit design saves the energy of the process by minimizing the operating costs. In retrofit mode two new heat exchangers were added to the base case HEN which reduced the operating cost with the payback period of 0.3254 years.

Key words: Pinch analysis, Aspen Plus, Heat exchanger networks (HEN), Aspen energy analyzer, Retrofit analysis.

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