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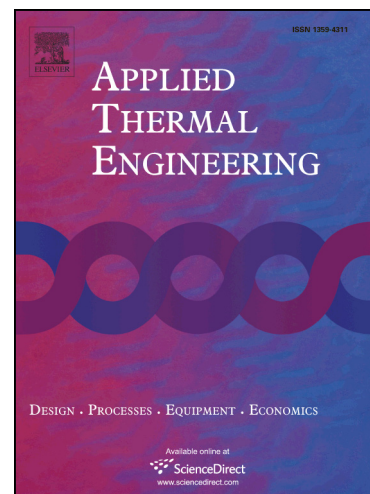
PII: S1359-4311(16)30853-5  
DOI: <http://dx.doi.org/10.1016/j.applthermaleng.2016.05.174>  
Reference: ATE 8390

To appear in: *Applied Thermal Engineering*

Received Date: 2 March 2016  
Revised Date: 27 May 2016  
Accepted Date: 29 May 2016

Please cite this article as: J-C. Bonhivers, A. Moussavi, A. Alva-Argaez, P.R. Stuart, Linking pinch analysis and bridge analysis to save energy by heat-exchanger network retrofit, *Applied Thermal Engineering* (2016), doi: <http://dx.doi.org/10.1016/j.applthermaleng.2016.05.174>

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## Linking pinch analysis and bridge analysis to save energy by heat-exchanger network retrofit

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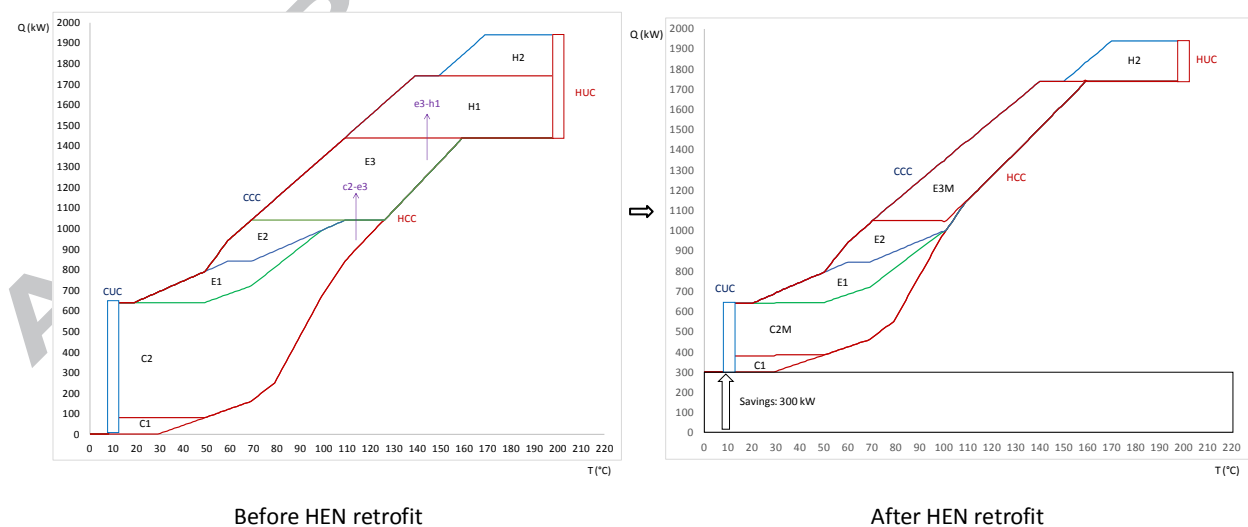
Fax: (514) 340-5150

**Keywords:** process integration, energy efficiency, heat-exchanger network, retrofit

### Highlights

- The flow rate of cascaded heat in exchangers is presented between composite curves.
- Reducing energy consumption implies decreasing the flow rate of cascaded heat.
- Removing cross-pinch transfers is not necessary to reduce energy consumption.
- Bridge modifications are necessary to reduce energy consumption.
- Bridge modifications are evaluated on the Heat Exchanger Load Diagram.

### Graphical abstract



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