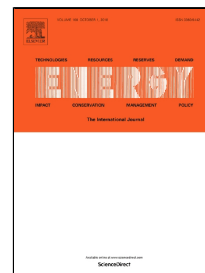


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Increasing Energy Efficiency of Milk Product Batch Sterilisation

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Abstract

The food industry is a large energy consumer and most heat demands in food processing are low-temperature. The aim of this study is to develop and simulate innovative retrofits or redesigns that unlock the heat recovery potential of industrial batch sterilisation processes. The case study focuses on the whey cream process, although the method and results apply to similar batch sterilisation processes. The initial situation is compared to energy efficient designs based on “Energy Storage” and “Rescheduling”. Using a thermodynamic model, including the control system, the dynamic behaviour is simulated. The results show a high energy saving potential of up to 83%, faster processing with up to 60% timesaving, and favourable economics for the proposed novel designs.

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