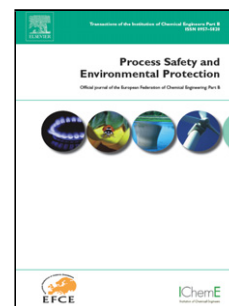


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Author: Saeed Eini Hamid Reza Shahhosseini Majid Javidi
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Inherently safe and economically optimal design using multi-objective optimization: the case of a refrigeration cycle

Saeed Eini^a, Hamid Reza Shahhosseini^a, Majid Javidi^b, Mahdi Sharifzadeh^{c*}
mahdi@imperial.ac.uk, Davood Rashtchian^a

^a Center for Process Design, Safety and Loss Prevention (CPSL), Chemical and Petroleum Engineering Department, Sharif University of Technology, Tehran, Iran

^b Iranian Offshore Engineering and Construction Company (IOEC)

^c Centre for Process System Engineering (CPSE), Department of Chemical Engineering, Imperial College London, United Kingdom

* Corresponding author at: Room C603, Roderic Hill Building, South Kensington Campus, Imperial College London, UK. SW7 2AZ. Tel.: +44(0)7517853422.

Highlights

- The safety and economic performance of industrial processes are highly tangled
- A novel framework is proposed to simultaneously optimize safety and profitability
- Process inherent safety is quantified as the consequence and frequency of accidents
- Multi-objective optimization established the trade-off between safety and economy
- The proposed methodology was demonstrated using the case of a refrigeration cycle

Abstract

The Economic viability of industrial processes strongly depends on their safe and reliable operation. The method of inherent safe process design enables systematic consideration of safety measures in order to ensure process safe operation at the early stages of process design. The

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