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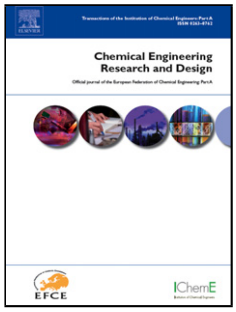

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Simultaneous reduction of cost, environmental impact and energy consumption of biofuel production processes by combining process simulation with heat integration

Robert Brunet, Dieter Boer, Gonzalo Guillén-Gosálbez*, Laureano Jiménez

(Manuscript ID. CHERD-D-13-00809)

Chemical Engineering Research & Design

Highlights:

- This work introduces a methodology based on the combined use of process simulation cost, environmental and energy.
- We analyzed a 2,400,000 gallons/year alkali-catalyzed biodiesel process using vegetable oil.
- We analyzed a 40,000,000 gallons/year dry-grind corn based bioethanol production plant.
- We applied heat integration with the pinch methodology.

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