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Modelling of an Industrial Naphtha Isomerization Reactor and Development and Assessment of a New Isomerization Process

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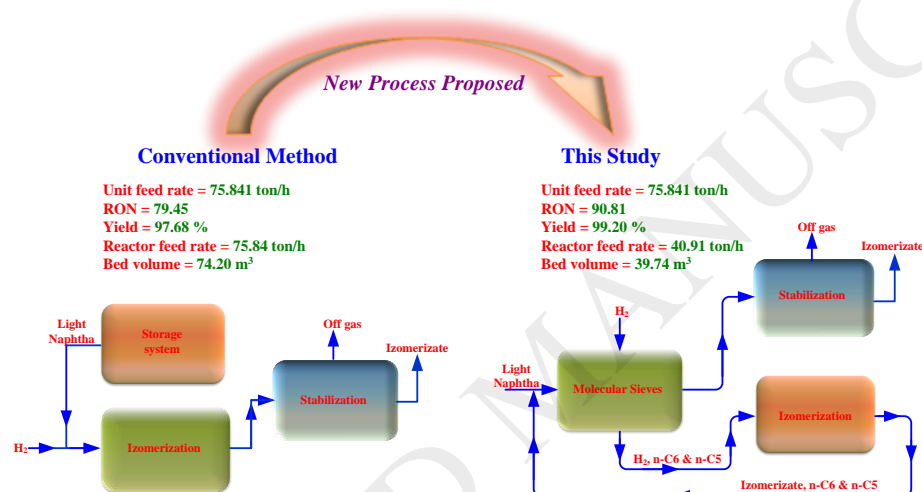
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Graphical abstract



Highlights

- Mathematical model of an industrial naphtha isomerization reactor is developed.
- Parameter estimation technique is utilized to find the best kinetic parameters.
- The optimal design of the reactor is validated against industrial experimental data.
- A new isomerization process is proposed and its performance is evaluated

Abstract

Naphtha isomerization is an important issue in petroleum industries and it has to be a simple and cost effective technology for producing clean fuel with high gasoline octane number. In this work, based on real industrial data, a detailed process model is developed for an existing naphtha isomerization reactor of Baiji North Refinery (BNR) of Iraq

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