

***Generic Modelling, Design and Optimization of Industrial Phosphoric Acid Production Processes***

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In the present work we address the systematic and effective design of industrial scale phosphoric acid production processes through the implementation of an efficient process modelling and optimization strategy. A generic and systematic framework is developed that aims to facilitate the modelling and identification of highly performing phosphoric acid production schemes through exploration of interactions and synergies among the participating processing components. The framework allows the employed models to be independent of the processes they are expected to emulate as it is developed through use of generic process modules, thus facilitating design variability and flowsheet interconnectivity. The employed modelling and optimization approach is implemented on an industrial phosphoric acid production process. Design options of increased performance are proposed for the existing process while useful design insights into the interactions of the process components are generated.

Keywords:

Phosphoric acid production, process design, crystallization process modelling

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