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SCIENTIFIC & RESEARCH PROJECTS

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Project Title:

Investigation of Different Approaches for Hydrogen Management in Petrochemical Complexes

Abstract:

Extensive use of hydrogen in refineries and petrochemical plants is an incentive for designing integrated hydrogen networks to utilize hydrogen more efficiently. On the other hand, hydrogen, as an important byproduct, is not properly used in some petrochemical complexes and mostly sent to the fuel system. Few works have been reported in literature for improving hydrogen network in petrochemical complexes. In this paper, however, a modified automated targeting approach has been developed and applied to petrochemical plants for estimating fresh hydrogen target. Furthermore, this paper is aimed to develop a superstructure based optimization framework to consider hydrogen plant as part of the whole network. Also, four industrial cases are studied to demonstrate the importance of hydrogen management in petrochemical complexes and proving the applicability of the new method.