

철강공정의 부생가스인 Linz-Donawitz Converter Gas로부터 올레핀 생산 공정에 대한 기술경제
성
평가

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LDG is one of the byproduct gases generated in the steelmaking process. The main component of LDG is CO(60-65%). It is currently used as a heat source, but CO can be utilized as a syngas to produce other chemical with additional hydrogen source. This study aims to evaluate the techno-economic feasibility of producing ethylene and propylene from LDG. Process simulation was conducted using Aspen Plus. The process consists of methanol synthesis, methanol-to-olefin(MTO) and olefin separation. The kinetic parameters for methanol synthesis and MTO reaction were obtained from Korea Research Institute of Chemical Technology. Heat exchange network design, electricity generation and economic evaluation were conducted. The results showed that MSP of ethylene was comparable with current market price under certain conditions. Hydrogen took up the largest portion among the total production cost.

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