

ETHYLENE PRODUCTION UTILIZING CATALYTIC MEMBRANE REACTORS

The main objective of this proposed study is to investigate the potential application and feasibility of utilizing multifunctional catalytic membrane reactors to produce ethylene from the dehydrogenation of ethane as an alternative to the conventional processes. Furthermore; various process flow diagrams will be examined with different conditions.

The distinctive features and the influence of the key parameters on this process will be investigated. The research will be divided into two stages. The first stage will include rigorous modeling, simulation, and optimization of the new catalytic membrane reactor process. The second stage will evaluate a complete ethylene process that utilizes membrane reactor. An economic comparison between the conventional and new production routes will be conducted in this study.