Retrofit design of LNG regasification process and its exergy recovery

박성호, 박찬샘, 정익환, 나종걸, Krishnadash Singh, 한종훈*
서울대학교
(chhan@snu.ac.kr*)

A new process integration scheme is proposed, where both LNG regasification and GTL (Gas To Liquid) processes are combined to maximize exergy utilization. In conventional LNG regasifier, thermal exergy intrinsically contained by LNG is being thrown away by means of sea water. It could be recovered by configuring ORC(Organic Rankine Cycle) in which working fluid uptakes heat from GTL sub processes, and then rejects it to LNG heat sink.Exergy loss from all unit processes was evaluated and based on the analyses, optimal ORC configuration was investigated.

This research was supported by the second phase of the Brain Korea 21 Program in 2014, by Institute of Chemical Processes in Seoul National University, by MKE and grant from the LNG Plant R&D Center funded by the Ministry of Land, Transportation and Maritime Affairs (MLTM) of the Korean government, by the Energy Efficiency & Resources Core Technology Program of the Korea Institute of Energy Technology Evaluation and Planning(KETEP) granted financial resource from the Ministry of Trade, Industry & Energy, Republic of Korea (No. 2010201020006D), (No. 20132010201760) and (No. 20132010500050).