

Optimization of a natural gas liquefaction process applied temperature different composite curve analysis

팜눅트랄, Le Quang Minh, 김서은, Nguyen Van Duc Long, ANDIKA RIEZQA, Le Cao Nhien, 이문용<sup>†</sup>  
영남대학교  
(mynlee@ynu.ac.kr<sup>†</sup>)

The objective of this study is to optimize Korea Single Mixed Refrigerant (KSMR) liquefaction cycle, a newly developed process by Korea Gas Corporation, by coordinate descent methodology. The temperature different composite (TDC) curves demonstrates the condensation and evaporation inside the heat exchangers when changing mixed refrigerant composition in a clearer way compared to the composite curves of temperature and the heat flow. Analysis on TDCC curves thus is conducted to evaluate the effect of each variable on process's compression energy consumption. Compared to the base case, energy save in optimization result is above 22%. The technique described in this research can be utilized to obtain a better solution in solving optimization problems. This study was supported by a grant from the Gas Plant R & D center funded by the Ministry of Land, Transportation and Maritime Affairs (MLTM) of the Korean government. This work was also supported by Priority Research Centers Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2014R1A6A1031189).