Modified Coordinate Decent methodology for solving process design optimization problems: Application to NG plant

칸 모드 샤리크, 박진호, wahid ali, 김경민, 최봉구, 이문용*

영남대

(mynlee@ynu.ac.kr*)

Modified Coordinate Decent (MCD) methodology is presented in application to process optimization problems. Search initialization inspiring by pattern search, sequential coordinate randomization and box space search are the notable modification made in the conventional coordinate decent algorithm. The convergence and robustness in calculation of proposed methodology is demonstrated using extensive numerical test problems. Finally the MCD algorithm is coded in Visual Basic and exploited for optimization of two process design problems developed in commercial simulator. Successful optimization of Korea SMR liquefaction cycle and DWC configuration for BTX separation is performed using MCD. The strong points of MCD are its robust convergence, small control parameters and simple implementation hence making it suitable for process optimization problems developed in commercial simulator. Acknowledgement: This research 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