A study on monitoring of process with multiple operating modes using Dynamic Principle Component Analysis Model

김미영, 이창준, 정윤주, 이기백[1], 윤인섭*
서울대학교; [1]충주대학교
(esyoon@pslab.snu.ac.kr*)

Most industrial processes have multiple operation modes. However, since they are based on the assumption that the processes are operated at steady state, many of current multivariate statistical process monitoring(MSPM) methods have problems. When the mode of a process is changed by the change of set point or others, the results of a monitoring with the conventional MSPM approaches are considered it as a fault and then the false alarms can trigger continuously. So then we need a model reconstructed for each operating mode through the conventional MSPM approaches directly and quickly.
Hence, in this study we propose a new monitoring method for a process that can be identified multiple operating mode and reduce false alarms. This model is built by the proposed method using DPCA and is applied Tennessee-Eastman challenge process to verify the efficiency of this model.