# Application of anti-correlation design criteria for recursive parameter estimation of batch reactors

김정훈, 이종민[1,†]

서울대학교; [1]서울대학교 화학생물공학부

(jongmin@snu.ac.kr[†])

Typical batch processes such as polymerization reactors and bioreactors exhibit highly complex dynamics. Dynamic models provided with a number of model parameters are used to describe their behaviour, where minimizing the correlation between those parameters is required to obtain decent parameter estimates. Another characteristic of batch process is that the measurements of the system are made infrequently. This necessitates the use of model-based design of experiment (MBDOE) techniques and/or measurement data obtained from several different batch experiments. In the current study, we propose a parameter estimation scheme that can be used in identification process of batch systems where aforementioned issues arise. The proposed scheme uses a framework of model-based design of experiment (MBDOE) technique where a specially designed anti-correlation design criterion is used as an objective. A new experimental design attempts to gather the information which is lacking from previous batches.