

Functional PCA기반 SBR공정 배치 모니터링 및 해석

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Functional Principle component analysis (FPCA) is a data-mining technique use to obtain information from the large multidimensional dataset. It assumes data as discrete measurement of a function and data is converted into parameters by functions so variance and chances of uncertainty in analysis is also reduced. In This work FPCA is successfully applied for on-line monitoring of a sequencing batch reactor (SBR). We used pH-time cycle to monitor the batches of SBR, from pH time- cycle we can get Ammonia Valley and nitrate Apex functions, on which we applied FPCA for the batch monitoring. The results of the FPCA showed that pH- time cycle is a more reliable parameter to monitor the batches of SBR process. Acknowledgements: This work was supported by the National Research Foundation of Korea (NRF) grant funded by the Korea government(MSIT). (No. NRF-2017R1E1A1A03070713).