

## 폐수처리공정의 고급제어를 위한 센서이상 감지 및 보정 기법

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Wastewater treatment plants (WWTP) are notorious for poor data quality and sensor reliability due to the hostile environment in which the measurement equipment has to function. In this paper, a structured residual approach with maximum sensitivity (SRAMS) based on the redundancy of the measurements is used to detect, identify and reconstruct single and multiple sensor faults in a Single reactor for High activity Ammonia Removal Over Nitrite (SHARON) process. SRAMS is based on inferences, which are insensitive to the faults in the sensor of interest and sensitive to faults in the other sensors. It is used for four types of sensor failure detection: bias, drift, complete failure and precision degradation. The application of sensor validation shows that single and multiple sensor faults can be detected and that the fault magnitude and fault type can be estimated by the reconstruction scheme. This sensor validation method is not limited by the type or application of the considered sensors. The methodology can thus easily be applied for sensor surveillance of other continuously measuring sensors and analyzers and for advanced control system in wastewater treatment process.