

Fault detection and classification in chemical processes based on neural network with feature extraction

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ABSTRACT

Feed forward neural networks are investigated here for fault diagnosis in chemical processes, especially batch processes. The use of the neural model prediction error as the residual for fault diagnosis of sensor and component is analyzed. To reduce the training time required for the neural process model, an input feature extraction process for the neural model is implemented. An additional radial basis function neural classifier is developed to isolate faults from the residual generated, and results are presented to demonstrate the satisfactory detection and isolation of faults using this approach.