SYSTEM ENGINEERING

工业PTA氧化过程4-CBA浓度的模糊神经网络模型

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摘要    A fuzzy neural network (FNN) model is developed to predict the 4-CBA concentration of the
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关键词    模糊神经网络系统    对苯二酸    氧化过程    传感器    变量    模糊曲线
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**Fuzzy Neural Network Model of 4-CBA Concentration for Industrial Purified Terephthalic Acid Oxidation Process**

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**Abstract**  A fuzzy neural network (FNN) model is developed to predict the 4-CBA concentration of the oxidation unit in purified terephthalic acid process. Several technologies are used to deal with the process data before modeling.First,a set of preliminary input variables is selected according to prior knowledge and experience. Secondly,a method based on the maximum correlation coefficient is proposed to detect the dead time between the process variables and response variables. Finally, the fuzzy curve method is used to reduce the unimportant input variables.The simulation results based on industrial data show that the relative error range of the FNN model is narrower than that of the American Oil Company (AMOCO) model. Furthermore, the FNN model can predict the trend of the 4-CBA concentration more accurately.

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