稻秆气化焦油催化裂解脱除过程模型改进与优化 Improving and Optimizing the LS-SVM Model of the Rice Straw Gasification Tar Removal Process by Catalytic Cracking

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关键词： 稻秆 气化 焦油催化裂解 模型改进 优化

摘 要： 对所建立的稻秆气化焦油催化裂解脱除过程LS-SVM模型进行了改进，将原模型的核函数由高斯径向基RBF核函数改为线性lin核函数，并对改进以后的模型进行了验证，在此基础上对稻秆气化焦油催化裂解过程作了优化。结果表明，改进以后的模型具有更好的模拟效果和泛化能力，且当催化裂解温度为949.1356℃，气相停留时间为0.9819s时，焦油催化裂解率达到最大值98.6877%。 The LS-SVM model of the rice straw gasification tar removal process by the catalytic cracking was improved. Linear kernel function was chosen as the kernel function of the model. Moreover, the validation of the improved model was conducted. On this basis, an optimized calculation of the rice straw gasification tar removal process by the catalytic cracking was done. The results indicated that the improved model had better simulation effects and generalization ability, and when the catalytic cracking temperature reached 949.1356℃, the gas residence time was 0.9819s, the maximum of the tar catalytic cracking rate can be 98.6877%.

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