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袋式除尘器流场动态测试及优化

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(东华大学 环境科学与工程学院，上海，201620)

摘 要：采用热线风速仪及建立袋式除尘器实验装置对袋式除尘器内部流场气流分布进行测试，应用CFD对其气流分布进行数值模拟与实验对比。利用计算机模拟诊断得出流场分布不均匀产生的原因，提出流场改进措施及结构优化参数。研究结果表明：流场的不均匀性主要是入口风速过高和袋室的结构不合理造成的；计算机模拟结果与实验结果基本吻合，表明用CFD模拟方法替代试验进行流场的研究是可行的。

关键字：袋式除尘器；CFD数值模拟；流场

Dynamic test and optimization of flow field in bag filter

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Abstract: The test airflow distribution was made by using hot-wire anemometer and the establishment of experimental equipment of bag filter, and numerical simulation of CFD was made. The causes of uneven distribution of flow field was diagnosed by simulation, improving measurements of flow field and optimizing parameters of bag filter structure were put out. The results show that the main reasons of flow field non-uniformity are the higher inlet velocity and unreasonable bag chamber structure. Simulation results of computers are basically consistent with experimental ones, which indicates that using CFD simulations replaced test flow field to study flow field is feasible.

Key words:bag filter; CFD numerical simulation; flow field

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