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流动与传递

Numerical Simulation of Macroscopic Mixing in a Rushton Impeller Stirred Tank

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摘要 The macroscopic mixing in a stirred tank with different tracer injection locations, impeller speeds and impeller positions is simulated numerically by solving the transport equation of the tracer based on the whole flow field in the baffled tank with a Rushton disk turbine numerically resolved using the improved inner-outer iterative procedure. Predicted mixing time is compared well with the literature correlations. The predicted residence time distribution of the stirred tank is very close to the present experimental results. The effect of the installation of a draft tube on the mixing time and residence time distributions is addressed.

关键词 macroscopic mixing,stirred tank,residence time distribution,mixing time,numerical simulation

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