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REACTION KINETICS, CATALYSIS AND.....

甲烷/空气射流燃烧中氮氧化物生成模型的研究

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摘要 With the development of reaction kinetics and transfer science, the modeling of NOx formation plays more and more important roles in the protection of environment and the design of combustion reactors; in this case, turbu-lence-chemistry model and NOx formation model are the two most important aspects. For thermal NOx mechanism, this article studied the CH4/air system and applied a set of latest NO formation rate constants published at the Leed University which replaced the original model code in FLUENT to increase its precision on prediction of NO concentration. The realizable k-ε model, Reynold Stress model and standard k-ε model were also investigated to predict the turbulent combustion reaction, which indicated that the simulation results of velocities, temperatures and concentrations of combustion productions by the standard k-ε model were in good accordance with the experimental data. With the application of the simulation results to the experimental data to fit some important kinetic parameters in the equation of O atom model and revision of the equation later, this article obtained a new NO formation rate model. It has been proved that the prediction of the developed model coincides well with the measurements.

关键词 NO formation rate model heat transfer mass transfer CH4/air combustion numerical simulation
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Study on NOx formation in CH_4/air jet combustion

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Key words NO formation rate model; heat transfer; mass transfer; CH4/air combustion; numerical simulation

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本刊中 包含“NO formation rate model”的 相关文章
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