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乙烯裂解炉中温度的分布

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关键词 [ethylene](#) [pyrolyzer](#) [furnace](#) [reactor tube](#) [flue-gas](#) [temperature](#) [heat flux](#)

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Temperature Distribution in Ethylene Pyrolyzer

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Abstract A good understanding of the detailed temperature distribution in the furnace plays an important role in the implementation of operation optimization and design improvement of ethylene pyrolyzer. Numerical simulation of the turbulent flow, combustion and heat transfer was carried out to investigate the temperature distribution in industrial furnace. Inhomogeneities of the flue-gas temperature distribution were observed in X, Y, and Z direction of the furnace from the simulated results. Along the height of the furnace, the average flue-gas temperature increased initially and decreased afterward, and reached its peak at the height of 5 m. The reactor tube skin temperature varied not only along the height of the furnace, but also around the circumference of the tube. The heat flux profiles from the furnace towards the reactor tubes followed the shape of the average flue-gas temperature profile. The heat flux of the inlet tubes was constantly higher than that of the outlet tubes at the same height in the furnace.

Key words [ethylene](#); [pyrolyzer](#); [furnace](#); [reactor tube](#); [flue-gas](#); [temperature](#); [heat flux](#)

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