عنوان مقاله:

Heat Transfer Calculation in the Firebox of the Ethylene Plant Furnaces (RESEARCH NOTE).

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خلاصه مقاله:

The thermal cracking of hydrocarbons for olefin production is carried out in long tubular reactors inserted in a furnace, in this process the heat flux along the reactor wall determines the feedstock conversion, the olefin selectivity's and rate of coke deposition. A detailed firebox simulation model is therefore a powerful tool in the design and operation of pyrolysis furnaces and reactors to study the effect of process variables. The zone method of analysis is a versatile tool for studying the effects of process variables on furnace operation. A computer program which applies a zoning technique has been written in FORTRAN ۷۷ for analyzing the heat transfer in the radiant chamber of the firebox. The temperature distribution, inside the cracking coils, calculated by the kinetic model [۱], has been used for this model. Application of the program to the simulation of the thermal cracking furnace shows that the temperature distributions in such a furnace are highly non-uniform. The results are in agreement with the fundamental results of SPYRO* simulation model [۲] for the thermal cracking furnaces.

کلمات کلیدی:

Cracking Furnace, Radiation, Simulation, Zone Method

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