

NUMERICAL AND EXPERIMENTAL INVESTIGATION OF NAPHTHA PYROLYSIS IN THE FAST-MIXING REACTOR

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Abstract

Under study is the process of naphtha pyrolysis in the heat-carrier flow when the ultra-short time of feedstock / heat carrier mixing is realized. The experiments are carried out within the temperature range at the reactor inlet of 1,250 – 1,400 K. Detailed data on the temperature and product composition distribution along the reactor axis are obtained. Experimental results are compared with the calculation. Under discussion is the difference between the products composition in our experiments and steam cracking and ACR-reactor. Significant increase in the ethylene yield in our experiments is noticed.