Formation of Nitrogen Oxides in the heating system of a coke oven
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Volltext

To predict the formation of nitrogen oxides in the heating system of coke plants, detailed information about the combustion process is needed. Due to the high temperatures in the heating system, the data cannot be measured. A model for a combustion chamber was generated for the computational fluid dynamics (CFD) package FLUENT 6.3. With this program the formation of thermal and prompt NO was simulated. Because of the unsteady conditions in the combustion chamber (variable ambient temperature and periodic change of hot coke and cold coal) a pseudo – steady state was assumed. To prove the model's ability to predict changes in the formation of NO due to different operating conditions, a set of operating points from the coke plant in Linz was used for the calculations. The results were then compared to literature.