BOF DePhos part II: Experimental investigation of the kinetics of the converter process and their relevance to multi-zone-models (LDSage)

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The results of the LDSage Model, developed within a close cooperation between GTT and SMS Group GmbH (see K. Hack, “Advances of Thermochemical Modelling in the BOFdePhos Project”, User Meeting 2016), revealed that no liquid slag can be formed in equilibrium with a high Carbon melt. In the light of those findings, a clarification of the mechanism of slag formation at the early stage of the converter process was required.

For this purpose, a variety of experiments, where high carbon and low carbon melts were blown with an oxygen jet, have been conducted. The evolution of slag was monitored closely and samples were taken at different blowing stages. Based on the results of those experiments, a concept explaining the kinetics of slag-metal reactions during the blowing process has been developed and implemented in the LD-Sage model.