

Thermochemical Modelling of a Coal Fired Boiler

T.SCHRECK¹, S.PETERSEN², J.BERNABE², K.HACK²

¹ *RWE Power, Niederaußem,*

² *GTT-Technologies, Herzogenrath*

ABSTRACT

In previous presentations it was shown how standard FactSage (Equilib) calculations can be used to approach the subjects of sintering, slagging and fouling coal fired boilers. In continuation of this work two SimuSage-based models have been designed and realised which permit the user “in the plant” to investigate quickly the behaviour of slags and ashes when so-called coal blending takes place.

A rather simple model is used to investigate directly the interactions when coal-ash compositions are directly extracted from slag composition database of RWE. The results suggest optimal mixing ratios for typical coals from the Hambach open cast mine. A more complex model permits the user to investigate the behaviour of blended coals in the actual boiler taking into account the conditions for proper coal combustion.