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Several examples are used to demonstrate how the BOF process can be further improved. On the automation side, a new data-driven prediction model for the BOF endpoint has been tested. The model is able to learn from large amounts of da¬ta, make predictions in real time and improve the main target values as compared to a conventional model. Furthermore, a slopping-detection system is presented, which combines acoustic and optical sensors in order to predict the probability of a slopping event. On the modelling side, the latest developments to simulate converter processes by means of Computational Fluid Dynamics (CFD) are presented. CFD gives a deep insight into the multiphase flow of melt, slag and gas as well as the mixing process. On the component side, a calibration procedure for the blowing lance is discussed, which is able to check whether the supersonic nozzles are operating at their design point. A prototype of a self-adapting adjustment unit is presented as well. The unit is installed in the lance tip. It reacts to changes in the oxygen pressure and controls the surface ratio between throat and outlet section of each nozzle. Finally, a new bottom stirring procedure with alternating sequence is proposed which combines the stirrers in individual groups and shows gas saving potentials of up to 30%.

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