

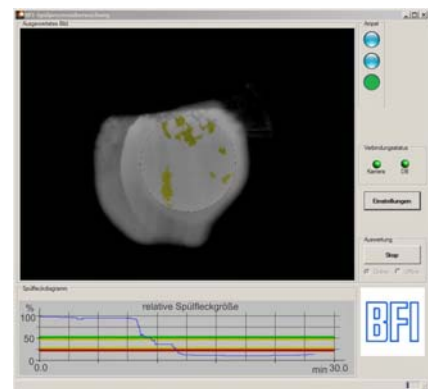
Bfi Monitoring of vacuum processes using digital image processing

VDEh-Betriebsforschungsinstitut GmbH
Dept. Measurement and Automation Steelmaking
Contact: Dr. Bernd Kleimt



Online access to so far non-accessible process parameters of vacuum degassing is made possible by innovative measurement systems that are based on infrared or CCD imaging at the degassers. Especially infrared cameras allow to distinguish between steel and slag on the melt bath surface in the degasser and therefore to evaluate the stirring and degassing behavior. In cooperation with modern digital image processing software, novel process parameters are determined and used for online optimization of the vacuum processes.

- VD (tank degasser): Online image processing system for evaluation of the melt bath surface; Determination of the intensity of the movement of the melt bath, of the amount of slag on the melt, of the correct operation of purging plugs during degassing and of the temperature loss of the melt; Combination of the novel online process parameters with dynamic process models to optimize process control (minimization of treatment time, control of stirring gas flow rate, avoidance of slag splashing); Improved stability of the degassing process and reduced energy consumption.
- RH (recirculating degasser): Online image processing system for determination of splashing in the pressure drop phase, of the movement of the melt and of the bath level in the degasser; Online feedback for optimised process control; Prolonged life-time of the refractories and improved degassing of the melt by control of the pressure during the pressure drop phase.



VDEh-Betriebsforschungsinstitut GmbH
Sohnstr. 65, 40237 Düsseldorf, Germany
Tel.: +49 211 6707 201; Fax: +49 211 6707 202
<http://www.bfi.de>

Direct Contact to this project:
Dr. Birgit Palm
Tel: +49 211 6707 293
birgit.palm@bfi.de