IN-LINE FLOCCULATION MONITORING IN A HATSCHEK MACHINE FOR FIBRE-CEMENT MANUFACTURE

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Abstract

The aim of this study is to obtain real-time information of flocculation processes in the fibre–cement manufacture through a soft sensor. This paper presents three different applied trials, carried out in different Hatschek machines, representing the main two industrial processes (air curing and autoclaving), in order to monitor the flocculant dosage changes, flocculant changes and the relationship between final product properties and flocculation. Three different anionic poly-acrylamides of low charge with different molecular weights were used as flocculants. The obtained results demonstrate that focused beam reflectance measurement (FBRM) is a valuable in-line sensor as well as a control and predictive process tool to monitor the flocculation processes in fibre–cement manufacture. Furthermore, a correlation between the sensor data (counts/s of particles between 50 and 86 µm) and the final product properties (density) was established, thus minimising the production of fibre–cement outside the intended specifications to achieve a better control on the final product quality.