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Research area: Process aims

Process measuring and control technology

Key words:

Microstickies, Quality of deinked pulps

Subject:
Development of a harmonised procedure to assess microsticky methods

Background / Problem area

One of the main problems in the deinking lines and the paper machine is the presence of stickies. Stickies entering the paper machine via recycled pulps can be deposited on machinery parts, wires and felts of paper machines, which increase production failures and also reduces the quality of the paper. The consequences are increased production costs. To prevent stickies problems and to take specific measures against stickies problems e.g. regarding machinery or the use of specific additives, it is mandatory to know the sticky content in the process streams.

Quantitative sticky evaluation methods are necessary to provide clear and repeatable information on the sticky content of recycled pulp. In particular it is very difficult to find a way for defining the right quantity of micro-stickies present in deinked pulp. The multitude of microstickies methods in the market indicates that the optimum method is yet to be found.

Objective / Research results

The project is aimed at developing a procedure for assessing microsticky methods. This developed method should be considered as an INGEDE standard test method for assessing microsticky methods efficiency.

The principle of the method for assessing microsticky methods efficiency is based on the preparation of stock samples that have defined incremental (stepwise) shares of microstickies (= a predefined series of samples whose microsticky content decreases from one sample to the next). The individual samples are to be tested according to the microsticky measurement method to be evaluated. If the measured values for the micro-stickies reflect the decrease within the sample series adequately, then this method can be considered suitable for verifying the presence of microstickies. The ideal case would show a linear decrease, but other curves that exhibit a decrease are also conceivable. If a decrease is evident, it can be assumed that the microsticky measurement method is suitable. If a constant value or an increase is found across the mixing stages, this would mean a negative assessment. Such a method would not be suitable for measuring microstickies correctly.

The procedure how to prepare the different pulp mixtures was established. Several test series applying this procedure to different microsticky methods were carried out. The procedure of analysing definite mixtures of sticky free and sticky loaded pulps has proved to be a suitable tool for evaluating the efficiency of microsticky measurements. If microsticky methods really do detect microstickies, then this approach can prove that a correlation in fact exists.

Application / Economic benefits

A harmonised procedure to assess microsticky methods will help in classification and development of a method for measuring the concentration of microstickies. It is an essential prerequisite for successful sticky control to reduce stickies problems in mills and consequently to increase their productivity.

Project period: 1st October 2005 – 30th September 2006

Remarks

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