

SPEAKER



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BIOGRAPHY

Frank is the Director of Technical Sales & Marketing for Mercer International and based in Germany. He started his career in 1991 with former Sulzer Escher-Wyss which became Voith Paper. Frank held several technical and sales management positions throughout Europe and North America with responsibilities in R&D, refining, fibre systems, fabrics, and tissue. Prior to joining Mercer he was with Canfor Pulp and Arjowiggins Decorative Papers. Frank has a Dipl.-Ing. and Doctorate in Process Engineering from the Rhenish Westphalian Technical University in Aachen, Germany.

LECTURE

No-load power – A critical parameter for laboratory refining

PFI and Jokro mill have a long tradition for evaluating fibrous materials. Both devices differ significantly from industrial refining due to the principle applied, a predominantly squeezing treatment of the fibers. In addition, the recording of the specific energy demand, one of the fundamental practical key figures for describing the refining process, is not provided.

For these reasons, simulating laboratory refining is gaining more importance to be able to evaluate the refining behavior of fibrous materials under practical conditions. Controlling laboratory refiners by means of specific edge load and net specific refining energy are the essential difference to traditional laboratory devices allowing transferring the results to production processes.

Both key figures include the net power input of the refiner. To determine this, knowledge of the no-load power, i.e., the power to overcome friction and pumping losses, is essential. Per definition no-load power is the power absorbed by the refiner at which no change in pulp properties can yet be observed. Its exact recording is very important particularly on a laboratory scale. On the one hand, this serves the comparability of different laboratory refiners. On the other hand, depending on the ratio of net to no-load power of the laboratory refiner used, even small inaccuracies can lead to falsification or misinterpretation of the refining results.

The presentation begins with a comparison of the various laboratory devices. Subsequently, we will have a brief look at the basic key figures of refining. Finally, an approach for the determination of no-load power according to the definition will be presented and discussed.