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## IMPROVING THE RECYCLEABILITY OF PRINTING PAPER BY *IN-SITU* FILLER LOADING

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### **Abstract**

The purpose of this study is to analyze the recycling potential of printing papers, which are obtained by two different filler loading processes: conventional loading by direct addition of calcium carbonate to cellulose fiber suspension and in-situ loading by precipitating calcium carbonate within cell wall and lumen of pulp fibres. In order to evidence the influences of the both filler content and loading method, a reference sample for recycling was obtained without filler, but using the same fibres stock. The results have shown that at similar filler content of paper, in-situ loading method gives higher opacity and brightness than conventional method, but lower level of mechanical strength. By recycling, conventional loaded paper loss the most part of the filler after first cycle and totally after three cycles, but in-situ loaded paper preserves about 30% of filler even after six cycles. Generally, the study indicates that in-situ loading could be an environmental-friendly solution for printing paper production and recycling.

*Key words:* filler loading, in-situ loading, papermaking, paper recycling, printing paper

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