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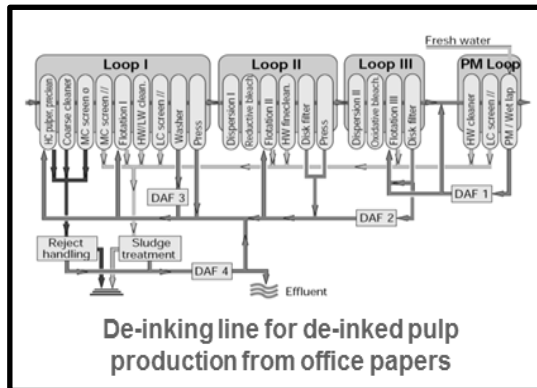
Ph.D. thesis (2016-2019)
LGP2 (M. Aourousseau, N.
Marlin, A. Boyer)
ARC Environnement –
Région AURA

Toward an eco-efficient deinking: The use of ozone for an eco-friendly process and for recovered cellulosic fibres of high quality

*Vers un désencrage éco-efficient : l'ozone pour un procédé propre et des fibres
cellulosiques de récupération de qualité – ECO-Z-DIPline*

Context

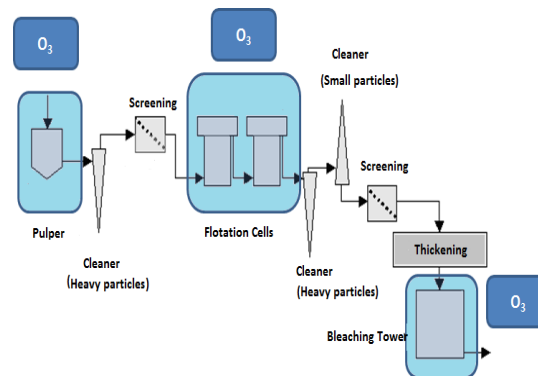
Recycling of mixed office papers (MOW) into paper of high brightness or market deinked pulp is limited since it requires complex deinking lines with many unit operations that consume energy, water and chemical products (recycling rate of MOW=10%)



These unit operations generate also a lot of rejects: in this context, the incorporation of ozone in different unit operations of a deinking line is studied at LGP2.

Objectives

The purpose of this project is to develop a new eco-efficient deinking line, using ozone: study of the synergetic effect of ozone in one unit operation on the performances of the others

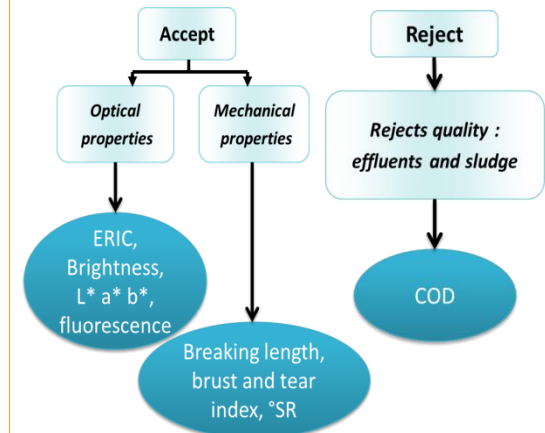


This new deinking line would allow to reduce the number of unit operations, the chemistry introduced during the whole process and the reject pollution.

The ultimate purpose is the production of high quality fibres with low environmental impact for paper application.

Methods

- Simulation of a deinking line in the laboratory with the sequence: “pulping – deinking – bleaching”, adding ozone successively in each operation and synergetic effect of ozone in one unit operation on the performances of the others
- Study of the effect of ozone on: accept and reject



- Achievement of a comparative life cycle analysis between ozone-based deinking line and a conventional line towards the development of a Best Available Technology (BAT).