

Pulping Problems Associated to Constituents of Lignocellulosic

IWK 103

-Last of Part 1

Effect of Fe and Mn

Iron, Fe	<ul style="list-style-type: none">-Production of colored complex upon reaction with lignin (Prasakis <i>et al.</i>, 1996)-Catalyst for decomposition of hydrogen peroxide
Manganese, Mn:	<ul style="list-style-type: none">-Agent for brightness reversion (Prasakis <i>et al.</i>, 1996)-Catalyst for decomposition of hydrogen peroxide (Vuorinen and Heikkila 2003) in APMP pulping liquor

Effects of Ca and Cu

- Ca:

- Restriction of swelling (Prasakis *et al.*, 1996) (Zhao *et al.*, 1992)
- Source of scaling problem (He *et al.*, 2003)

- Copper, Cu:

- Agent for brightness reversion
- Peroxide decomposition (Prasakis *et al.*, 1996)

Effect of Silica

- Silica, Si
 - Increase liquor viscosity and thus pose problem in chemical recovery (Pan and Leary, 1998), (Siegle, 2004)
 - Abrasion of metals frequently applied to paper (TAPPI, 1996)
 - Difficulty in lime recausticisation (Kulkarni *et al.*, 2005)
 - Heat exchanger (Tutus and Eroglu, 2003), (Kulkarni *et al.*, 2005)

Effects of Extractives

Extractives are

- Consumer of pulping chemicals (Hutholm *et al.*, 1997)
- Form organic deposits on equipment (Higgins, 1977) (Hillis and Sumimoto, 1989)
- Pitch deposition in paper product (2005)

Effect of Lignin

- Lignin
 - Poor defibration or fibrillation of fibre (Saka and Thomas, 1982) and thus
 - poor inter-fiber bonding (Retulainen *et al.*, 1998)

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