

# Application of Per-acetic Acid in Chemical Pulp Bleaching

Sandeep Tripathi, Shree P. Mishra, Om P. Mishra, Pratima Bajpai,  
Sanjay Kumar and Pramod K. Bajpai\*

Raghavan Varadhan\*\*

Per-acetic acid (PAA) treatment of different mill pulps (paper grade and dissolving grade) having different proportions of hardwood and bamboo was carried out. The PAA treatment of final bleached pulps was done at varying pH, reaction time, temperature and dose to get maximum gain in optical properties. Use of per-acetic acid at a dose of 0.5-1.0 kg/TP at ambient temperature and normal plant pulp pH, increased the final pulp brightness by 1.0-1.5 points and whiteness by 2.0-3.5 points. Yellowness and post colour number of pulp also reduced without affecting the viscosity. Almost similar increase in brightness and whiteness was observed when PAA treated pulp was used for the production of high brightness paper (+96% ISO). The brightness and CIE whiteness of PAA treated (1.0 kg/TP) high brightness paper were 97.9% ISO (+1.1) and 142.7 points (+3.2) respectively whereas the same of control (no PAA treatment) were 96.8% ISO and 139.5 points respectively.

The effects of addition of PAA in  $E_{op}$  stage and dioxide stage were also studied. Not much improvement in final brightness and whiteness was observed when PAA was used at a dose level of 0.5-1.0 kg/TP in  $E_{op}$  and D stages. It was noted that in the D stage about 1.0 and 3.0 kg of  $ClO_2$  could be replaced by treatment with PAA at a dose level of 1.0 and 1.5 kg/TP respectively. Use of per-acetic acid in D stage can partially replace  $ClO_2$  where  $ClO_2$  is a limitation.