

## Dynamic Simulation of a Reausticizing Plant

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The reausticizing process is the final stage in the chemical recovery in a pulp mill where green liquor ( $\text{Na}_2\text{CO}_3(\text{aq})$ ) from the recovery boiler is mixed with the burned lime ( $\text{CaO}(\text{s})$ ) from the lime kiln to produce strong white liquor ( $\text{NaOH}(\text{aq})$ ) for the cooking process. A new modelling tool, CROM, has been developed for dynamic simulation of chemical processes in aqueous and high temperature systems. It uses ChemApp-library with compatible thermodynamic databases for calculation of equilibrium compositions and enthalpies of streams. Two different methods can be used for combining equilibrium and kinetics to better model the time-dependent reactions in the real processes. CROM-tool has been used for building a flowsheet for the reausticizing process with lime kiln, slaker and causticizer unit operations, and to simulate the transient changes in the process. A thermodynamic data-file has been compiled from aqueous and pure condensed phase databases.