

Title: Dynamic Model for the Lime Kiln in the Chemical Kraft Recovery

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A new dynamic version of process simulation software KilnSimu has been made. It uses the same method of combining ChemApp and its Gibbs energy minimization routines with reaction kinetics as the old steady-state version, but in addition it takes into account the time-dependent changes in the input and output values of the process. The study case for the dynamic model is the lime kiln in the Chemical Kraft Recovery. The lime kiln is a major component of the Kraft pulp mill recausticizing operation. Lime kilns are often the last place in a pulp mill where fossil fuels are used, but recently, it has become more common to use fossil-free options in the lime kilns as well, making pulp mills completely fossil-free. One common alternative to methane is the bark gasification gas used in the study case.