

KILNVIEW

Interactive Modeling Tool for Kiln Analysis

KILNVIEW is a Windows-based, one-dimensional, steady state rotary kiln model with an easy-to-use graphical users interface (GUI) for performing process calculations. **KILNVIEW** can be configured for mineral processing and waste incineration applications.

CAPABILITES:

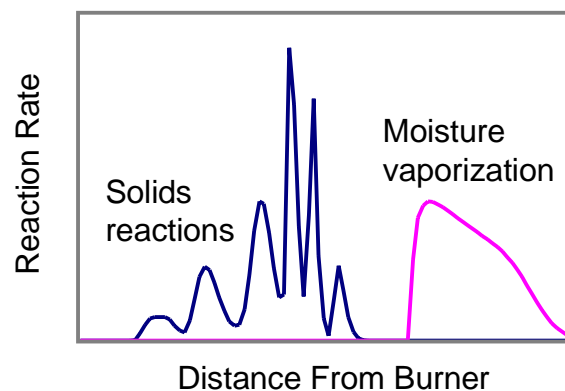
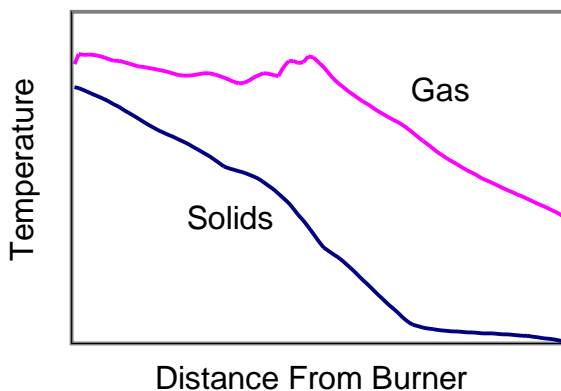
- model direct and indirect firing
- model fuel-rich and fuel-lean conditions in kiln
- compute required secondary air flow rate to achieve specified kiln off gas composition.
- complex feed and burner mixtures
- mid-kiln injection of high BTU waste
- includes effects of:
 - solid-phase reactions
 - entrainment of fines
 - melting & drying of the feed
 - combustion of organic matter in feed
 - sizing of feed

APPLICATIONS

- process optimization
- determine impact on process of operating variables
- examine impact of variations in feed composition
- quantify technical risk of capital improvements
- analysis of process economics
- development of control algorithms
- train plant personnel

SAMPLE RESULTS

Results for a counterflow process kiln are shown below. On the left are the temperature profiles for the combustion gases and the solids. On the right are reaction and phase-change profiles for the solids.



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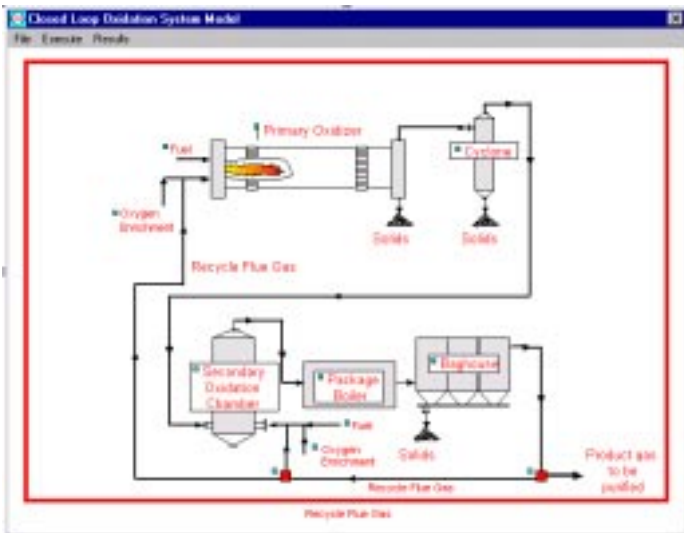
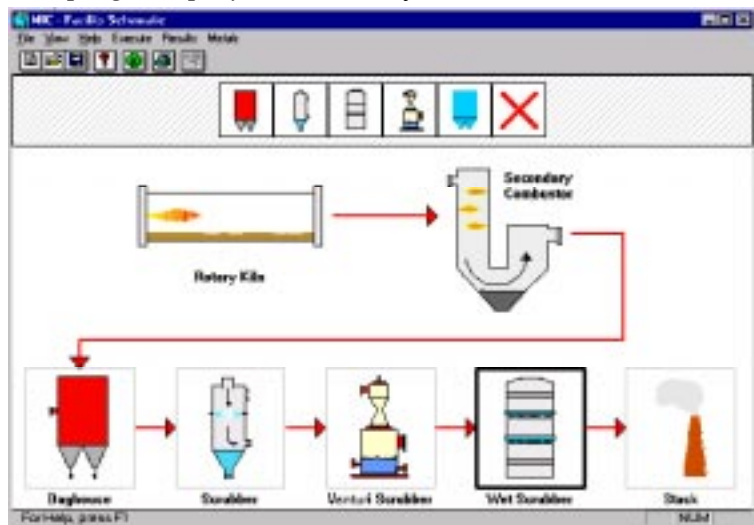
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Configured Models

The functionality of **KilnView** can be extended to create a configured model tailored to the exact requirements of a customer's kiln-based process. The configured model can include simple heat and mass balance box models for pre-heaters, pre-calciners, cyclones, scrubbers, baghouses, stacks, secondary reactors as well as economic analysis information. All components within a **KilnView** configured model communicate in a seamless manner to provide a true *plug and play* functionality.

Shown at right is a tool for designing and modeling incineration schemes. A rotary kiln and secondary combustion chamber are fixed components in the model, but the engineer is allowed to select and position up to four air pollution control devices. Once the design is complete, the model is executed and the results displayed in the form of pop-up graphs, charts, and data boxes on the screen.



Shown at left is a configured model for a process that utilizes recycled flue gas to optimize oxygen usage.



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