

14th International Congress of Chemical and Process Engineering



CHISA 2000

27-31 August 2000
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Event 617

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Process
System Engineering

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H5.6

Estimation of energy saving potential of industrial sites with methods of process integration

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The problem of rational use of energy resources in Ukrainian industry is of prime importance. Most of operating energy consuming industries were built in Ukraine when energy resources were comparatively cheap, so level of consumption of energy in most of industries is enormously high.

The Chemical Industry is one of the most energy consuming branch of modern Ukrainian economy. It relates especially to specific chemical processes, as for example for titanium dioxide plants build in Ukraine and designed before energy crisis of 1972-1973. One of the main features of such plant is absence of heat recuperation inside process, i.e. there is no integration of process streams.

The main problem solved was to estimate the energy saving potential and to define the ways of energy saving retrofit of typical titanium dioxide plant.

To solve this problem is impossible without using of main tool of Process Integration – Pinch Analysis, developed by prof. B.Linnhoff. Pinch Analysis was successfully used in Ukraine for oil refinery and district heating..

The use of this method for typical titanium dioxide plant case shows the possibility to save more than 8,000 tons of relative full per annum with short payback period.