



## Filtracní Technika

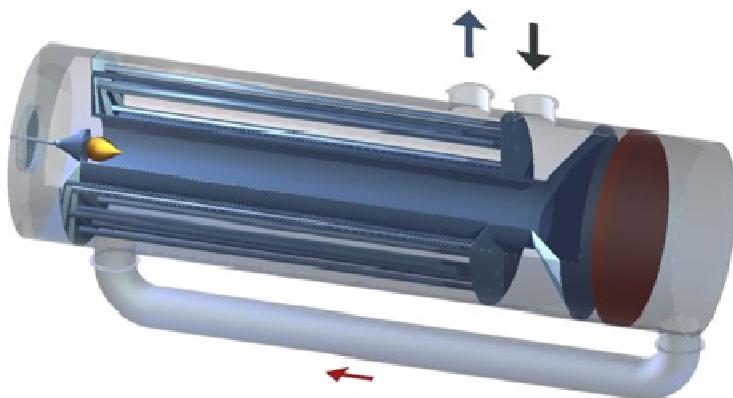
### Recuperative Catalytic Oxidizer

Optaglio is a leading firm with its registered office in England that produces holograms pressed into polymer foils. Holograms are used as safety measures to complicate the falsification of documents, brand products, money, certificates, weapons etc.

Special glues with a high content of organic solvents are used in the production of holographic foils. The glue consists of a mixture of components: toluene 4%, acetone 17%, mixture of alcohols 64%, MEK, Isobutyl-acetate and many others in trace amounts.

In 2007, the company Optaglio asked us to propose the best available technology for the liquidation of emissions for two coating lines with a total flow of air 1,500 m<sup>3</sup>/hour and concentrations of VOC 2 - 3 g/m<sup>3</sup> of the said compounds.

Given the amount of the investment and the operation costs, the optimum equipment seemed to be the recuperative catalytic oxidation unit. Waste air from the coating lines is drawn into the heat exchanger then passes through the heater into the catalytic reactor. There the destruction of VOC takes place and the chemical reaction increases the temperature behind the catalytic reactor by an average of 70°C. Air flows through the hot side of the plate heat exchanger to the chimney. Thermal efficiency of the heat exchanger is 80%. The thermal energy obtained from the oxidation reaction in the reactor is sufficient to maintain the autothermal operation of the equipment for a majority of the operation time.



Autonomous control of heating enables the operating temperature on the catalyst to be reached within a short time and to possibly maintain the desired temperature of the catalyst unless calorific hydrocarbons are immediately present.

### Řešíme emise

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The recuperative catalytic unit has remarkably low demands for operation and service. The non-existence of moving parts and its compact structure predict trouble-free operation. The equipment has been in continuous two-shift operation with the original catalyst since 2008.

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