A process intensification quickscan (PI-quickscan) was carried out at Indorama. Indorama Europoort produces Purified Terephthalic Acid (PTA) and Polyethylene Terephthalate (PET), mainly for the recyclable PET bottle industry. To narrow down the scope of the PI-quickscan the filtrate purge section of the PTA plant was selected. This section is a large energy consumer within the PTA process. The function of the filtrate purge section is to remove impurities from a mixture of catalyst, acetic acid and water. The impurities are generated during the oxidation process of para-xylene with oxygen to produce the PTA. The filtrate purge consists of various distillation columns (including azeotropic) and an extraction column. Before the PI-quickscan was executed first the PFD's and the heat and material balance was send to the PI-quickscan members. At the start of the scan on the 14th of January 2009 Indorama presented the filtrate purge process. During the presentation discussions started to understand the functions of the various unit operations and to address the economics of the process. The PI-quickscan was concluded with a good report including short and mid/long term practical recommendations. With success a plant experiment is already started based on the report. A selection of the short and long term recommendations is given below:

1. (Short term) Optimizing a flow ratio setting, to reduce steam usage of the filtrate purge process. This is currently implemented in the plant and already resulted in a significant steam/cost savings. No capital investment was required.

2. (Short term) Improve extraction process by phase inversion of the continuous and dispersed phase. This option is under consideration; the advantage is that also here no additional capital investments are required.

3. (Short term) Reduce catalysis losses by adjusting the coalescer package and / or placing an additional coalescer. This option requires a relative low investment.

4. (Long term) Make use of other then distillation separation techniques, for example filter / membrane unit to separate impurities. This option requires large investments, but energy saving potentials can be significant.