

Unimills is a leading European supplier of tailor-made vegetable oils producing more than 450 kton/a of product. The strength of Unimills is its diversity of processes, ranging from hydrogenated to fractionated, double-fractionated, and interesterified oils. Since the recent takeover by Sime Darby and the adoption of a new strategy there is scope for investment in additional oil processing capacity.

The PI Quicksan was focussed on the process of oil deodorization. By this, the oil is stripped with steam at low pressure in order to remove various contaminants from the oil. The current process is carried out in large (25+ meters, containing several tons of product) equipment, with substantial energy demands in the form of heat and steam. Edible oil deodorization has essentially remained unchanged for the last forty years.

The Quicscan has looked at the current proces in two ways:

- a) **Short term empirical:** What process intensification equipment can be purchased to improve certain parts of the process?
- b) **Medium/long term fundamental:** How can process intensification technology create a (dramatic) improvement in operation?

As for b) a number of ideas have been put forward that are mostly concerned with the decoupling of mass- and heat transfer, allowing (at least in theory) comparable product quality with significantly reduced energy expenditure.

Based on the results, the feasibility of a follow-up study together with a technical university is being investigated.