

“Collaborating with ECN has enabled us to take our fundamental research a step further and bring membrane technology to the market.”

Frans Velterop
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Bringing membrane technology to market

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“Pervatech manufactures a ceramic membrane for the dehydration of organic solvents at high temperatures. We try to find technical and economic solutions for complex separation processes. As an entrepreneur, I started developing a ceramic substrate with a polymer membrane in 1982. The technology has continued to be thoroughly developed into a completely ceramic membrane throughout the years.”

The problem

“In the market, there was demand for membranes for very fine filtration of salts and small molecules, for example. Very few organisations manufacture these ceramic membranes. In that respect, we truly operate in a niche market. Pervatech has a limited investment budget, so bringing new applications to the market

and funding new developments, can be difficult. That’s why I approached ECN for the continued development of a specific pervaporation membrane. ECN is the leading developer of membrane technology - especially ceramic membranes - in the Netherlands.”

The solution

“ECN, the University of Twente and the University of Amsterdam developed the Hybsi® pervaporation membrane. The ‘nano sieve’ makes the purification of various industrial product flows possible. Its uses include the production of biofuels and the separation of azeotropic mixtures. The membrane is an essential part of the separation process.”

The impact

“The new technology has led to a substantial reduction in energy consumption and a far higher purification quality. It has also enabled us to eliminate steps in the conventional process, leading to substantial cost savings for our customers, for example in the fine chemicals industry. For Pervatech, this project meant that we were able to expand our specialist knowledge even further. Due to our collaboration with a party such as ECN, and with equipment manufacturers and suppliers, we are recognised as an approved supplier in the market.”

The collaboration

“Collaborating with ECN has enabled us to take our fundamental research a step further and bring membrane technology to the market. Collaboration with an organisation such as ECN is very important to our customers. Purchasing membranes and installing them in a factory is a multi-million investment. Doing business with SME companies that are not as financially strong as larger multinationals could be risky. In this case, the technology is backed by ECN, which ensures the continuity of the technology. Personally I feel ECN could increase their support for SME companies and for scaling up technology to an industrial level. ECN is at the heart of technology and knows all the ins and outs. In the case of membrane technology, the strengths and qualities of the product have been identified, but we do not know what to expect in the long term. The involvement of ECN in, for example, endurance tests or identifying critical parameters can help companies to continue developing innovations faster and more effectively.”

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