Guest Editorial

The economic prospects for membrane technology are good. The membrane-based industry is growing rapidly. However, one of the limiting factors in this growth still is the enormous flux decline which occurs in practical applications, especially for complex fluids like those in the biotechnology and food industries. This serious problem was the main theme of the Workshop on Concentration Polarization and Membrane Fouling held at the University of Twente, The Netherlands, on May 18 and 19, 1987.

This workshop was a truly international event with 150 participants from 17 different nationalities, inside and outside Europe. There were 16 orally presented papers, showing the progress which has been made in this field from different points of view.

The negative economic impact of membrane fouling is roughly estimated at 500 millions of US dollars on a yearly basis. This figure is based on a conservative calculation assuming a real increase in permeate flux in ultrafiltration and microfiltration installations by a factor of 2.

At this workshop new simulation models were presented which give a better insight into phenomena occurring at the membrane interface. It was shown clearly that adsorption plays an important role in membrane fouling, not only on the outer membrane surface. Elegant methods to reduce membrane fouling were proposed, varying from new module design to cleaning by electrical current.

From this meeting it was clear that there is no unambiguous definition yet for membrane fouling or for fouling tests.

The obvious need for systematic investigations using well-defined fouling components made one of us (at the Örenäs Meeting on Characterization of UF membranes, Sweden, September 1987) propose a scheme for the definition and study of model foulants. Four different types of model components seem appropriate for the two important variables: size of the molecule and type of intermolecular interaction:

	Amphipolar interactions (hydrophobic/hydrophilic)	Unipolar interactions (hydrophilic)
Low molecular weight	surfactants	sugar derivatives oligomeric polyethers
High molecular weight	proteins	carbohydrate polymers polyethers

A lot of work still has to be done!

The organizers would like to thank all the participants for their enthusiastic discussions which will be a stimulus for the necessary research in this field of membrane science and technology.

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