

## **290t Membrane Applications for Recovery & Renewable Energy**

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MEMBRANE USE AS A RECOVERY DEVICE ABSTRACT Membrane Applications in Dairy Industry and Renewable Energy by Chester Luce Chairperson of the Supervisory Committee:

A application paper is presented on the history of use of membrane systems, and their use in the dairy industry, beginning with the birth of the water membrane systems, and covering the applications, materials of construction, advantages, core issues with the different configurations and types, how they provide the Dairy Industry with better cost effective solutions depending on the application and the membrane configurations including using membrane technology on wastewater recovery issues creating renewable energy from Dairy wastes. The paper addresses all the sanitary membrane applications including: Microfiltration – and the ability, when put into a properly configured system, to recover proteins and other valuable materials from a typical Dairy. Reverse Osmosis – for the recovery of water and concentration of salts for reuse or resale Pervaporation – for the cost effective recovery of waste materials from a Dairy and converting them cost effectively into Dry Ethanol