**Majewska-Nowak, K. Application of Electro-membrane Processes to Desalination of Solutions Containing Organic Compounds. *Ochrona Srodowiska* 2014, Vol. 36, No. 4, pp. 33–43.**

**Abstract:** The potential of electro-membrane processes in salt separation from aqueous solutions containing organic substances was discussed. The discussion was preceded by brief description of conventional electrodialysis, electrodialysis reversal and electrodeionization. It was emphasized that desalination of organic substance solutions was essential not only for biochemical technology, but also for industrial water and wastewater treatment. Desalination and concentration of industrial effluents by microfiltration–electrodialysis system enabled reuse of water and valuable substances, thus providing the possibility of creating water closed-loop systems. It was demonstrated that salt removal from solutions containing neutral organic macroparticles might be a simple procedure when conducted with use of conventional electrodialysis. In contrast, the presence of ionic organic compounds led to intensive fouling and/or leakage of organics into the concentrate stream. It was concluded that to overcome these limitations it was advisable to apply electrodialysis reversal and mono-selective ion-exchange membranes.

**Keywords:** Electrodialysis, mono-selective ion-exchange membrane, fouling, organic ion.