**Removal and recovery of electroplating industry wastewater using Membrane distillation**

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**Abstract:**

Membrane distillation (MD) is a feasible process for treatment of industrial wastewater. The MD process uses a hydrophobic and microporous membrane to separate a feed water to a pure distillate stream. Due to its hydrophobic nature, the MD membrane prevents the permeation of liquid water by transport of water vapor through membrane. In this study a MD process was used for the treatment of nickel electroplating wastewater and recovery of nickel. MD process concentrates the nickel concentration 20 folds. The Nickel concentration increased from initial 1,2 mg/l to 23 mg/l at a water flux of 12 L/m2.h. No significant reductions in water flux was detected and no significant fouling problem was detected. The effects of water fluxes (12, 20 and 30 L/m2.h) ,pressure ( 10 bar, 15 and 35 bar) and temperatures ( 20, 30 , 50 and 60 oC and on the removal and recovery of nickel was detected. The permeate exhibited 99% nickel and heavy metal yelds while from the retentate 23 mg/l nickel was detected at the lowest water flux of 12 L/m2.h.

**Biography of presenting author** (should not exceed 100 words)

Prof. Dr. Delia Teresa Sponza is currently working as a professor at Dokuz Eylül University, Department of Environmental Engineering. Scientific study topics are; Environmental engineering microbiology, Environmental engineering ecology, Treatment of fluidized bed and activated sludge systems, Nutrient removal, Activated sludge microbiology, Environmental health, Industrial toxicity and toxicity studies, The effect of heavy metals on microorganisms, Treatment of toxic compounds by anaerobic / aerobic sequential processes, Anaerobic treatment of organic chemicals that cause industrial toxicity and wastewater containing them, Anaerobic treatability of wastewater containing dyes, Treatment of antibiotics with anaerobic and aerobic sequential systems, Anaerobic and aerobic treatment of domestic organic wastes with different industrial treatment sludges, Treatment of polyaromatic compounds with bio-surfactants in anaerobic and aerobic environments, Treatment of petrochemical, Textile and olive processing industry wastewater by sonication, Treatment of olive processing industry wastewater with nanoparticles and the toxicity of nanoparticles. She has many international publications.

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