

MICROBIAL SALINE ELECTROLYSIS CELL SYSTEM FOR ELECTRICITY PRODUCTION FROM HIGH ORGANIC SALINE WASTEWATER

By: Rustiana Yuliasni

ABSTRACT

Food Processing Industry generates high content of organic and salinity wastewater which still be treated conventionally by using high energy demanding technology such as physical-chemical technology. Bioelectrochemical based technology, Microbial Fuel Cell (MFC)-Microbial Electrochemical Cell (MEC) and Ion Exchange Membrane (IEM) combination technology, can give more sustainable option for Wastewater Treatment Plant, because the technology can remove organic and salinity simultaneously by converting them to electricity. The electrical energy can also be a driving force for salt ions separation. The combination of MFC-MEC-IEM technology for treating high organic and salinity wastewater is called Microbial Saline Wastewater Electrolysis Cell (MSC).

The goal of this research is to develop technology based on Microbial Saline Wastewater Electrolysis Cell (MSC) to treat high organic and salinity wastewater so this technology later can be practically integrated to the Food Processing Industry Wastewater Treatment Plant, as an advanced technology.