

## Kinetics of Cu(II) Transport through Bulk Liquid Membrane with Different Membrane Materials

**Authors :** Siu Hua Chang, Ayub Md Som, Jagannathan Krishnan

**Abstract :** The kinetics of Cu(II) transport through a bulk liquid membrane with different membrane materials was investigated in this work. Three types of membrane materials were used: Fresh cooking oil, waste cooking oil, and kerosene each of which was mixed with di-2-ethylhexylphosphoric acid (carrier) and tributylphosphate (modifier). Kinetic models derived from the kinetic laws of two consecutive irreversible first-order reactions were used to study the facilitated transport of Cu(II) across the source, membrane, and receiving phases of bulk liquid membrane. It was found that the transport kinetics of Cu(II) across the source phase was not affected by different types of membrane materials but decreased considerably when the membrane materials changed from kerosene, waste cooking oil to fresh cooking oil. The rate constants of Cu(II) removal and recovery processes through the bulk liquid membrane were also determined.

**Keywords :** transport kinetics, Cu(II), bulk liquid membrane, waste cooking oil

**Conference Title :** ICEBESE 2014 : International Conference on Environmental, Biological, Ecological Sciences and Engineering

**Conference Location :** Paris, France

**Conference Dates :** December 30-31, 2014