ABSTRACT

Bulk liquid membrane (BLM) is one of the simplest types of liquid membrane that shows superior membrane stability but inferior solute fluxes. The inferior solute fluxes of BLM are caused by its small interfacial area per unit volume, long transportation path, and high membrane resistance. The interfacial area and transportation path of BLM are influenced by its configurations, whereas the membrane resistance is governed by its membrane phase viscosity, stirring speed, and operating temperature. Hence, this paper aims to outline the different types of BLM and discuss the various factors affecting the membrane resistance of BLM in heavy metal removal and recovery from wastewater. Major challenges and future prospects toward the utilization of BLM as a prospective separation technique for large-scale industrial applications are also highlighted and discussed.

Keywords: Bulk liquid membrane; Heavy metal; Removal; Recovery; Membrane resistance