

## Recovery of ionic liquids from aqueous solution by microwave-assisted distillation

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Ionic liquids (ILs) are a fascinating class of novel solvents, attracting attention as a possible 'green' alternative to volatile molecular organic solvents. However, the big challenge for the industrial applications of ILs resides in the economics of using ILs. The economic feasibility of ILs can be achieved by recycling them. Due to their ionic structure ILs can be heated to high temperature very fast under microwave irradiation, but microwaves do not have sufficient energy to break any chemical bonds in ILs structure. By this, ILs was recovered faster from ILs/water mixture by microwave-assisted distillation than that by conventional distillation. Hydrophilic ILs such as [Bmim][BF<sub>4</sub>], [Bmim][TfO] and [Emim][MS] was efficiently recovered from 1ml of 50% ILs/water mixture by microwave assisted distillation in 10 minutes in compared with 6 – 9 hours by conventional distillation. In addition, ILs could be dried by microwave irradiation in very short time compare with conventional method.