

## Enhancement Effect of Electromagnetic Field on Separation of Edible Oil from Oil-Water Emulsion

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**Abstract :** The effect of electromagnetic field (EMF) on the removal of edible oil from oil-in-water emulsion by means of electrocoagulation was investigated in rectangular batch electrochemical cell with DC current. Iron (Fe) plate anodes and stainless steel cathodes were employed as electrodes. The effect of different magnetic field intensities (1.9, 3.9 and 5.2 tesla), three different positions of EMF (below, perpendicular and parallel to the electrocoagulation cell), as well as operating time; had been investigated. The application of electromagnetic field (5.2 tesla) raises percentage of oil removal from 72.4% for traditional electrocoagulation to 90.8% after 20 min.

**Keywords :** electrocoagulation, electromagnetic field, Oil-water emulsion, edible oil

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