

### Simulation and optimization of distillation of azeotropic mixtures using various separation techniques

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An Azeotrope is a mixture of several liquids that cannot be separated by simple distillation. When azeotropic mixture is boiled, its vapor has the exact same composition of the liquid, hence making impossible to separate it by simple distillation. Since it is several interest to separate mixtures which is unseparable through distillation, there have been many researches undergone in this field to solve it and generated several useful methods which includes extractive distillation, pressure swing distillation, etc. While there are many ways to separate the mixture, there are also more than enough compounds that form azeotropes, and should be separated by using different techniques. In this study, for the purpose of optimizing, separation of azeotropic mixtures through these techniques are simulated via simulators, mainly using Aspen Plus.