

Application of vapor recompression to binary distillation for the case of large temperature difference between reboiler and condenser

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When it comes to separating mixtures, distillation is the most widespread way. However distillation consumes a lot of energy so that many researchers have studied for the way to improve energy efficiency of distillation over last few decades. The vapor recompression distillation is the one of the most effective way to reduce the energy needed for distillation. For many cases of binary distillation, vapor recompression have proven to be useful in lots of stuides but there is an impediment to applying vapor recompression to vaious cases. In case of large temperature difference between reboiler and condenser, vapor recompression is not suitable for reducing energy of distillation.

In this study, we proposed a proper way to apply the vapor recompression in case of large temperature difference between reboiler and condenser with considering fluid kinds of distilate.(wet, dry or isentropic) Then, we applied the way we proposed to some appropriate cases.