BAB V
KESIMPULAN DAN SARAN

5.1.Kesimpulan

Kesimpulan yang dapat diperoleh dari simulasi *Pressure Swing Distillation* untuk pemisahan THF-Air adalah sebagai berikut:

1. Pemilihan tekanan LPC pada 0,6 bar dan tekanan HPC pada 11 bar memberikan nilai *Total Annual Cost* (TAC) yang paling minimum.
2. Desain kolom optimal untuk konfigurasi PSD dengan *partial heat integration* adalah D1= 0,913 m, D2= 0,974 m, L_c1= 12,436 m, L_c2= 8,047 m, NT1=19, NF1=14, NR1=11, NT2=13, NF2=3.
3. Desain kolom optimal untuk konfigurasi PSD dengan *full heat integration* adalah D1= 0,876 m, D2= 0,971 m, Lc1= 9,510 m, Lc2= 8,778 m, NT1=15, NF1=12, NR1=11, NT2=14, NF2=3.
4. PSD dengan *heat integration* sebelum optimasi dapat mereduksi TAC sebesar 24,585% untuk *partial heat* integration dan 55,323% untuk *full heat integration* dibandingkan tanpa *heat integration*.
5. *Pressure Swing Distillation* dengan *heat integration* mampu mereduksi biaya energi sebesar 67,813% pada *full heat integration* dan 35,483% pada *partial heat integration* dibandingkan tanpa *heat integration.*
6. TAC pada *Pressure Swing Distillation* dengan *heat integration* setelah optimasi lebih rendah daripada sebelum optimasi. Dengan reduksi 39,903% pada *partial heat integration* dan 10,406% pada *full heat integration*.

5.2.Saran

Saran yang dapat diberikan untuk pengembangan penelitian berikutnya adalah sebagai berikut:

1. Pemilihan tekanan kedua kolom dilakukan dengan melepas *bottom rate,* sehingga titik azeotrop dapat disesuaikan guna mencapai kemurnian yang lebih optimum.

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