



BAB 5

KESIMPULAN DAN SARAN

5.1 Kesimpulan

1. Pada temperatur pirolisis 500°C dengan ukuran partikel -60 mesh dihasilkan perolehan asap cair terbesar sebesar 35.19%-wt
2. Pada temperatur pirolisis 400°C dengan ukuran partikel -20+40 mesh dihasilkan perolehan arang terbesar sebesar 57.71%-wt
3. Semakin besar temperatur pirolisis, perolehan asap cair dan gas tak terkondensasi akan meningkat, sedangkan perolehan arang dan tar akan menurun
4. Semakin kecil ukuran partikel biomassa, perolehan asap cair dan gas tak terkondensasi akan meningkat, sedangkan perolehan arang dan tar akan menurun
5. Dari hasil analisa asap cair dengan GC-MS, secara kualitatif terdapat kandungan kafein yang cukup tinggi dengan rata-rata sebesar 38.78 % luas area
6. Semakin tinggi temperatur pemanasan dan semakin kecil ukuran partikel pada arang, kadar air dan kadar karbon terikat akan semakin berkurang sementara kadar abu akan semakin bertambah. Sedangkan kadar zat mudah menguap tidak terlihat kecenderungannya
7. Kandungan kadar air, abu, zat mudah menguap, dan karbon terikat pada kulit biji kakao belum memenuhi standar SNI, sehingga tidak cocok diaplikasikan sebagai bahan bakar

5.2 Saran

1. Dilakukan analisa TGA untuk mengetahui rentang temperatur degradasi biomassa seperti selulosa, hemiselulosa, dan lignin.
2. Dilakukan analisa proksimat kulit biji kakao untuk mengetahui komponen utama yang terkandung didalamnya.
3. Memodifikasi reaktor pirolisis dengan menambahkan gas *inert*.
4. Memperbanyak sensor temperatur didalam raktor agar temperatur akhir pemanasan tepat
5. Dilakukan preparasi awal umpan berupa pengeringan agar diperoleh basis kering



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