

BAB V

KESIMPULAN DAN SARAN

V.1. Kesimpulan

Dari hasil penelitian dapat dibuat kesimpulan sebagai berikut:

1. Penambahan MPN dan/atau DA dapat secara signifikan meningkatkan kapasitas absorpsi NS terhadap keempat jenis minyak yang diujikan.
2. Absorben NS/Fe_xTA/DA_l dengan nilai $x = 4$ dan 5 memiliki kemampuan penyerapan yang paling baik terhadap keempat jenis minyak yang diujikan.
3. Total kapasitas absorpsi untuk setiap variasi minyak cenderung lebih baik untuk NS/Fe₄TA/DA_l dibandingkan NS/Fe₅TA/DA_l, dengan nilai kapasitas absorpsi urutan minyak goreng>biodiesel>CPO> minyak jelantah, yaitu $6,761 > 6,503 > 6,278 > 5,986$ g/g.
4. Modifikasi dengan surfaktan SDS (NS/Fe₄TA/SDS) memberikan peningkatan kapasitas absorpsi yang signifikan dibandingkan surfaktan lainnya, dengan urutan minyak CPO>minyak goreng>minyak jelantah>biodiesel, yaitu $5,011 > 4,838 > 4,535 > 2,241$ g/g.
5. Kapasitas absorpsi pada penambahan SDS 1 mL cenderung memiliki penyerapan yang lebih baik jika dibandingkan dengan penambahan SDS sebanyak 2 dan 3 mL terhadap keempat jenis minyak yang diujikan.

V.2. Saran

Saran untuk penelitian berikutnya:

1. Perlu ditentukan struktur material dasar absorben sebelum melakukan pelapisan dengan *Metal Phenolic Network* (MPN) untuk mendapatkan kemampuan penyerapan yang maksimal.

2. Perlu dilakukan *double coating* absorben dengan MPN pada rasio TA: Fe terbaik untuk meningkatkan sifat hidrofobisitas absorben.
3. Perlu dilakukan uji karakterisasi *contact angle* untuk memastikan sifat hidrofobik absorben.
4. Perlu dilakukan uji karakterisasi *Fourier-transform Infrared Spectroscopy* (FTIR) pada sampel absorben sebelum dan sesudah proses absorpsi untuk mengetahui perubahan struktur ikatan absorben.

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