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Supplementary Information

Chemical and Spectroscopic Characterization of a Vegetable Oil used as Dielectric Coolant in Distribution Transformers

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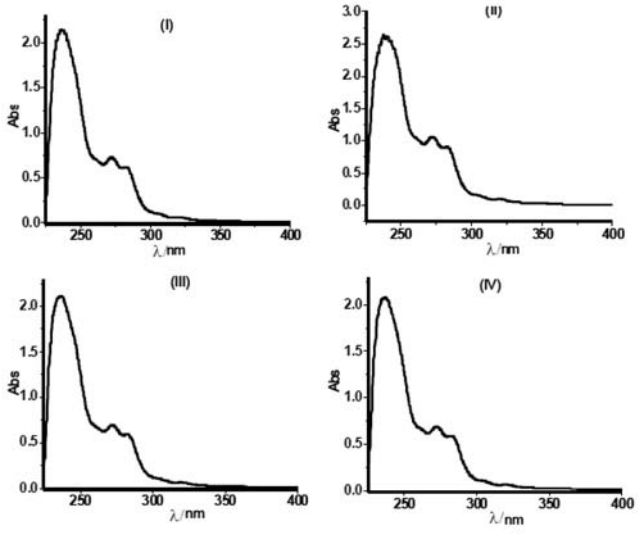

Figure S1. UV-Vis spectra of the FR3® oil samples (I-IV) (*n*-hexane as solvent).

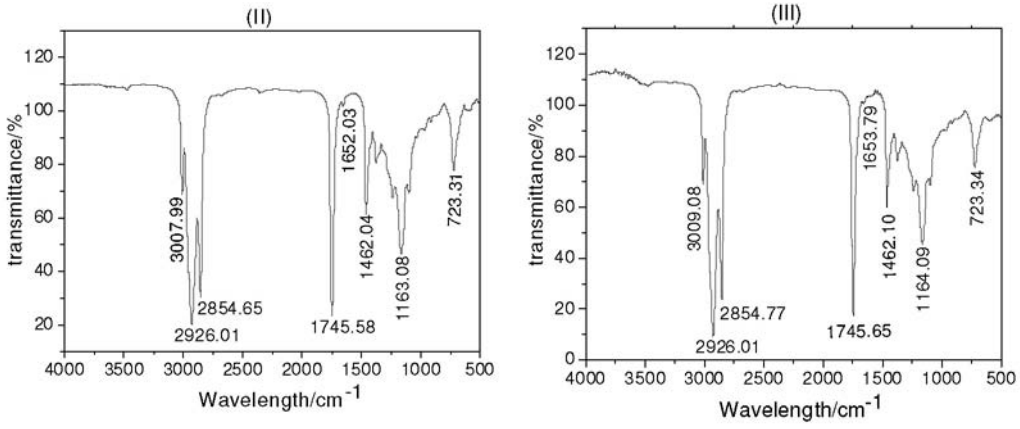

Figure S2. IR spectra of the used (II) and (III) FR3® oil samples (films on NaCl cells).

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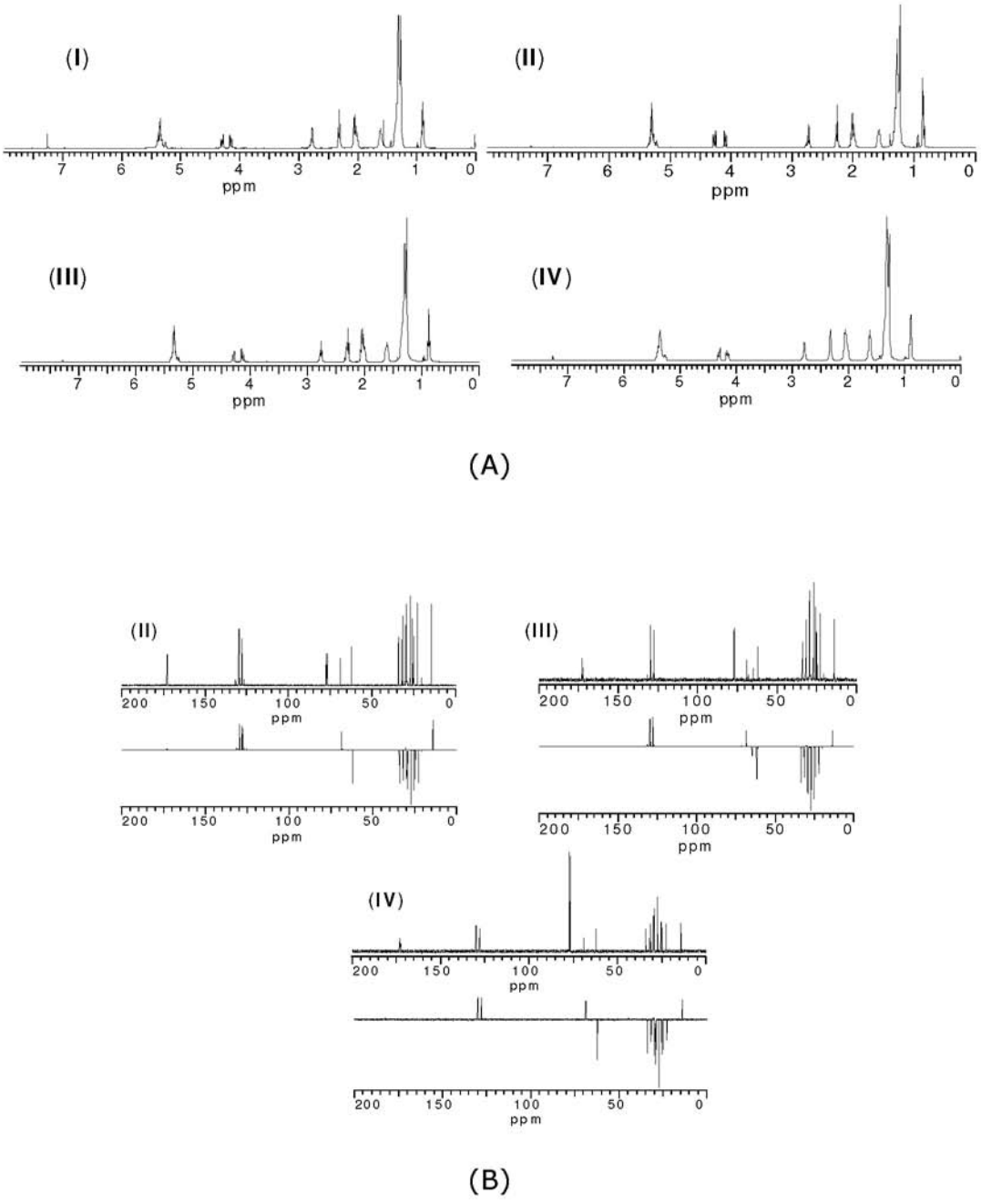

Figure S3. (A) Comparison of the ^{1}H NMR spectra of the unused (I) and used (II-IV) FR3® oil samples. (400 MHz, $CDCl_3$ as solvent). (B) Comparison of the ^{13}C NMR and DEPT-135 spectra of the used (II-IV) FR3® oil samples. (100 MHz, $CDCl_3$ as solvent).

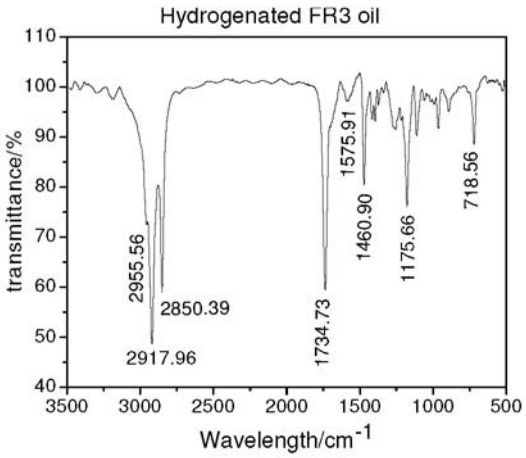

Figure S4. IR spectrum of the hydrogenated FR3® oil sample (film on NaCl cell).

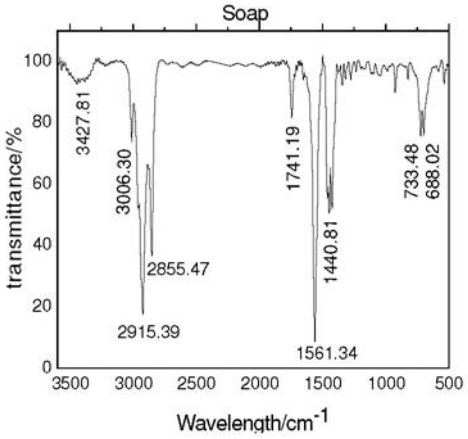

Figure S5. IR spectrum of the soap obtained from the saponification of a FR3® oil sample (I) (film on NaCl cell).

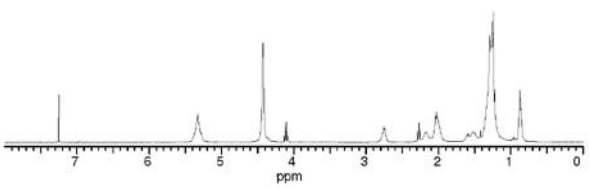

Figure S6. ^{1}H NMR spectrum of the free fatty acid obtained from a FR3® oil sample (I) (400 MHz, $CDCl_3$ as solvent).

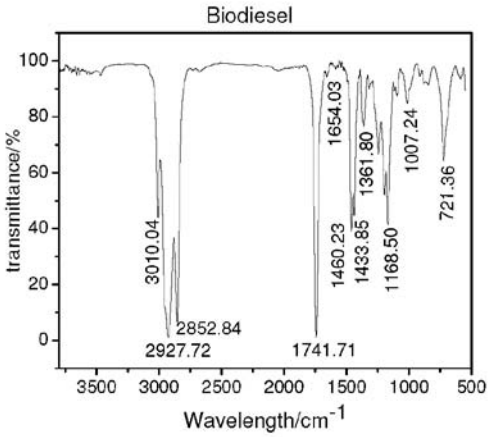

Figure S7. IR spectrum of the biodiesel obtained from the FR3® oil samples (I) and (IV) (film on NaCl cell).

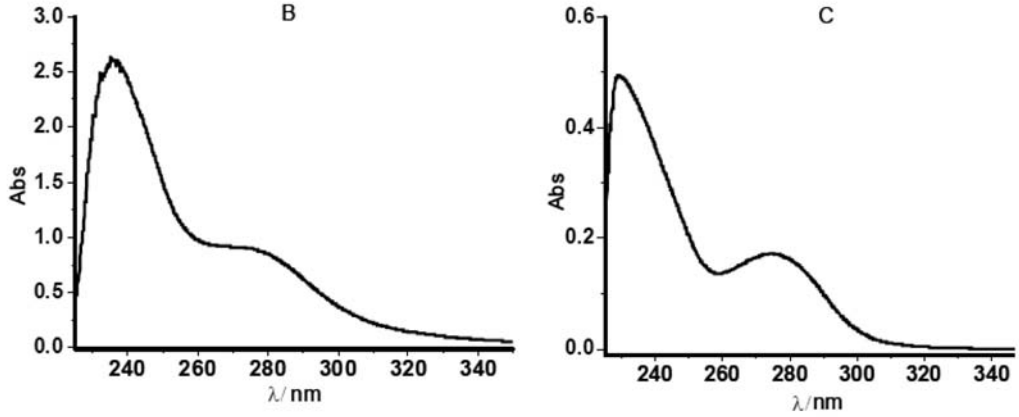

Figure S8. UV-Vis spectra of the FR3® oil samples (B and C) (*n*-hexane as solvent).

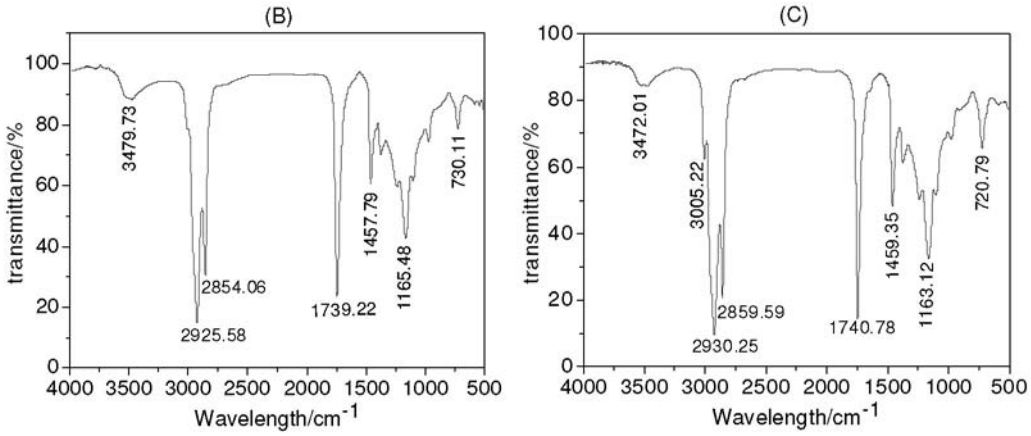

Figure S9. IR spectra of the FR3® oil samples (B and C) (films on NaCl cells).

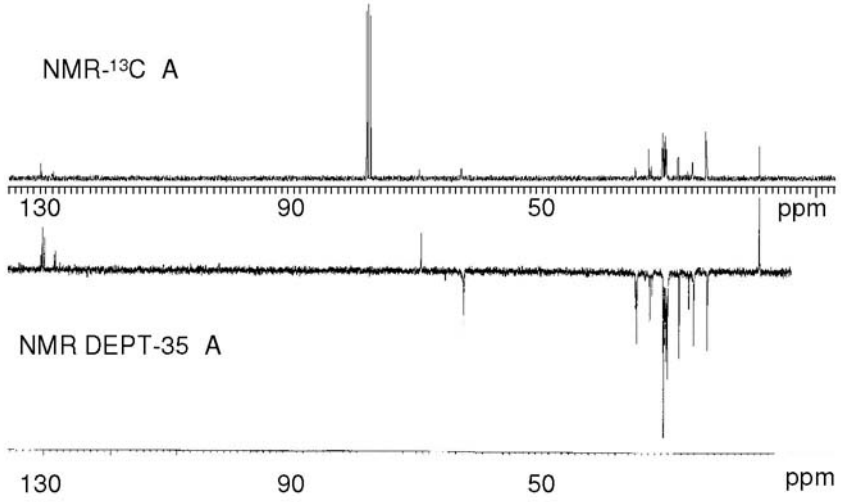

Figure S10. ^{13}C NMR and DEPT-135 spectra of the accelerated aged FR3® oil sample A (100 MHz, $CDCl_3$ as solvent).

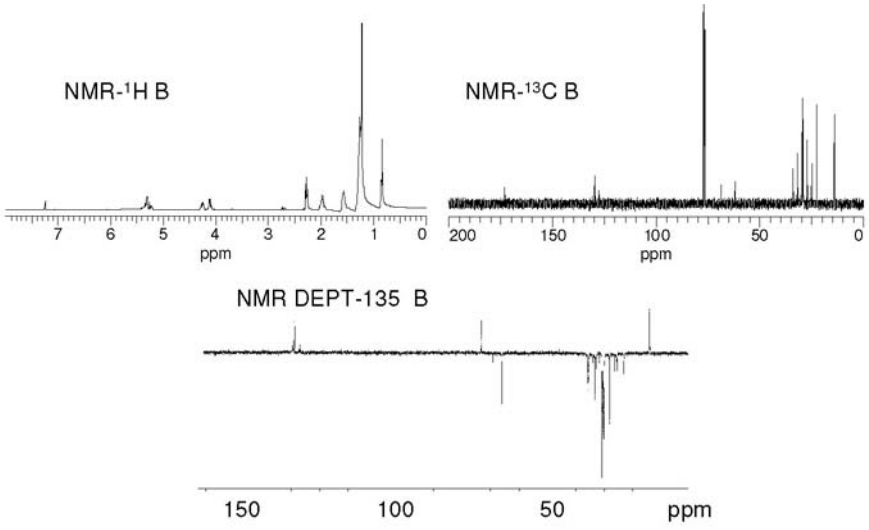

Figure S11. NMR spectra of the accelerated aged FR3® oil sample B (400 and 100 MHz, $CDCl_3$ as solvent).

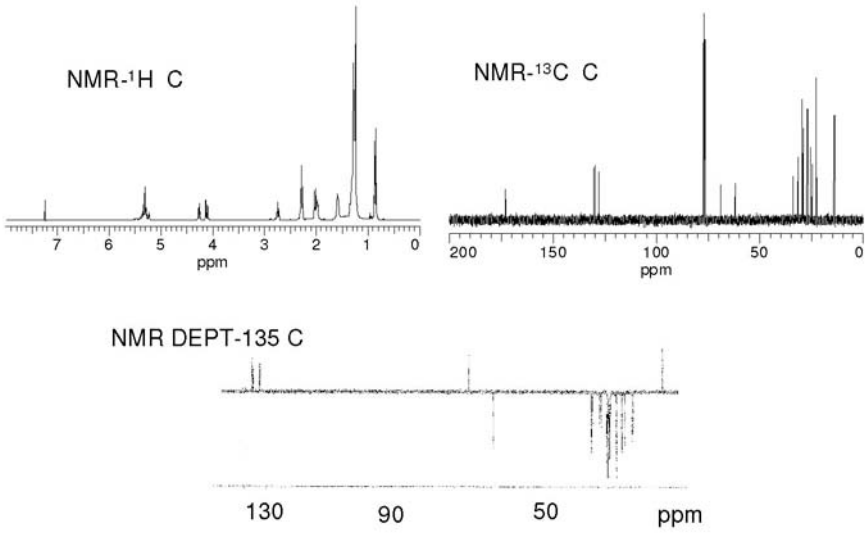

Figure S12. NMR spectra of the accelerated aged FR3® oil sample C (400 and 100 MHz, $CDCl_3$ as solvent).