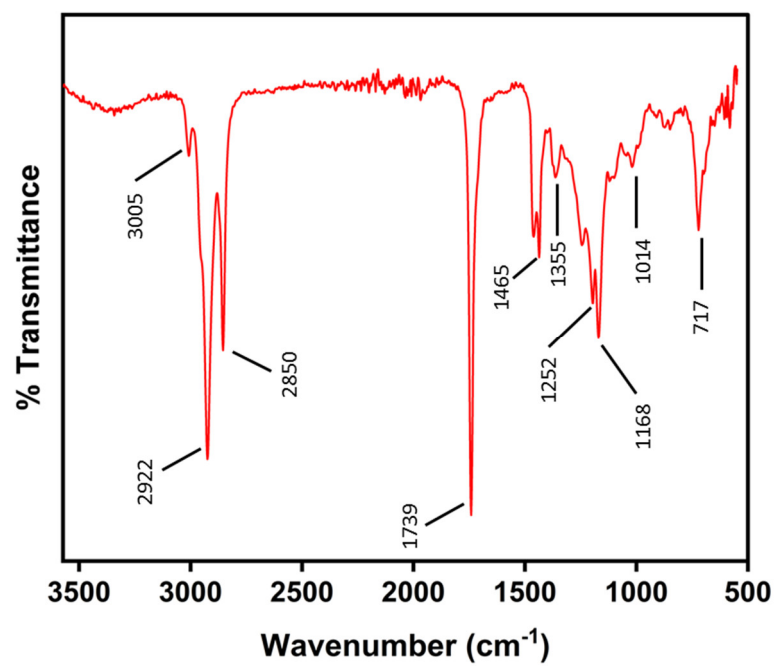


**Table of contents:**

<b>Sl No</b>	<b>Caption</b>	<b>Graphic</b>
1.	FT-IR spectra of the biodiesel product showing different peak positions	Figure S1
2.	$^1\text{H}$ -NMR and $^{13}\text{C}$ -NMR analysis of the biodiesel product	Figure S2
3.	Gas chromatography analysis of the biodiesel product	Figure S3
4.	Optimization of reaction parameters	Figure S4
5.	Heterogeneity test of the CaO catalyst in transesterification of soybean	Figure S5
6.	SEM and EDX images of reused catalyst	Figure S6
7.	FT-IR spectrum of reused CaO catalyst after 5 reaction cycles	Figure S7
8.	XPS deconvolution spectra of magnesium (Mg1s), silicon (Si2p), phosphorus (P2p)	Figure S8



**Figure S1.** FT-IR spectra of the biodiesel product showing different peak positions.

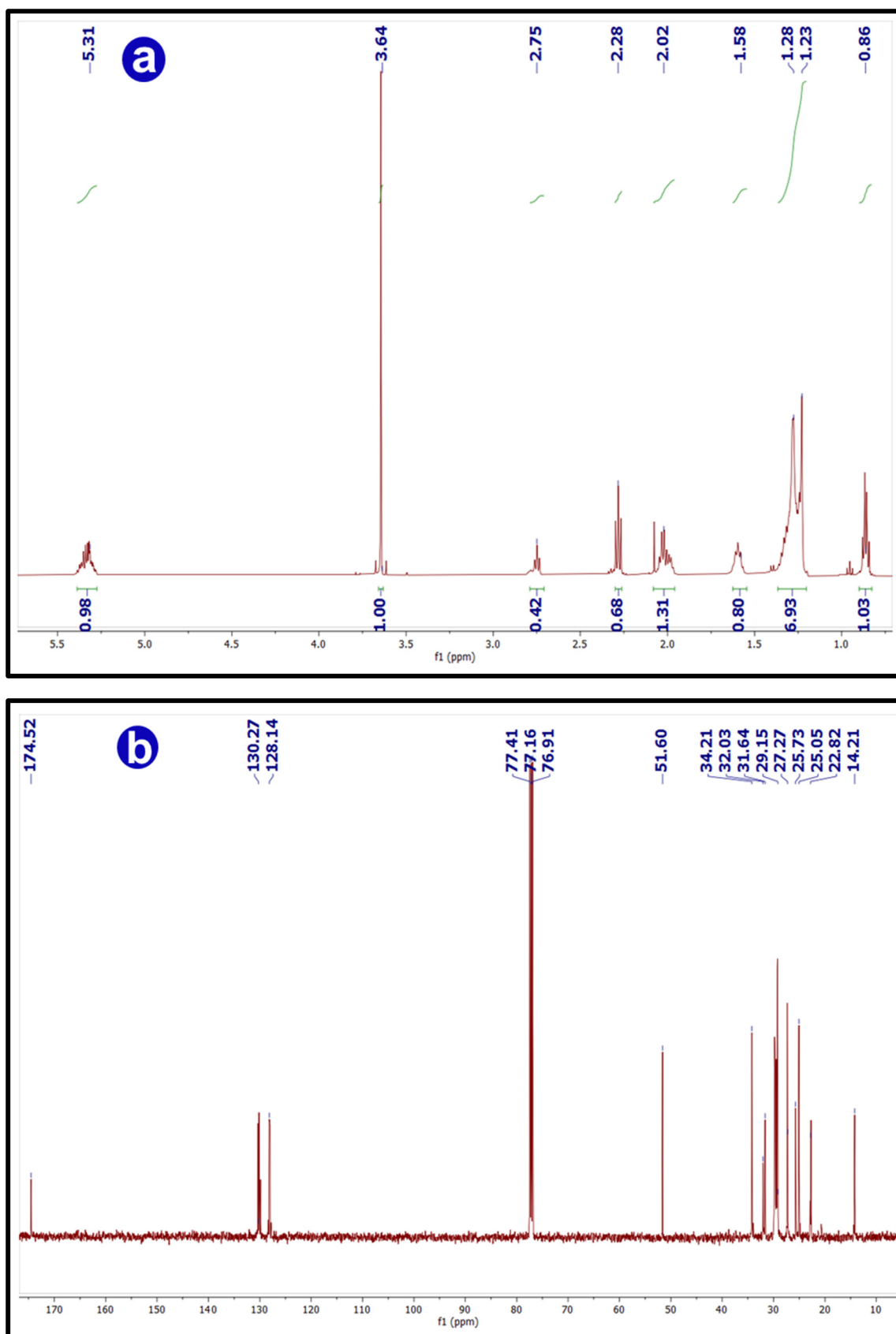
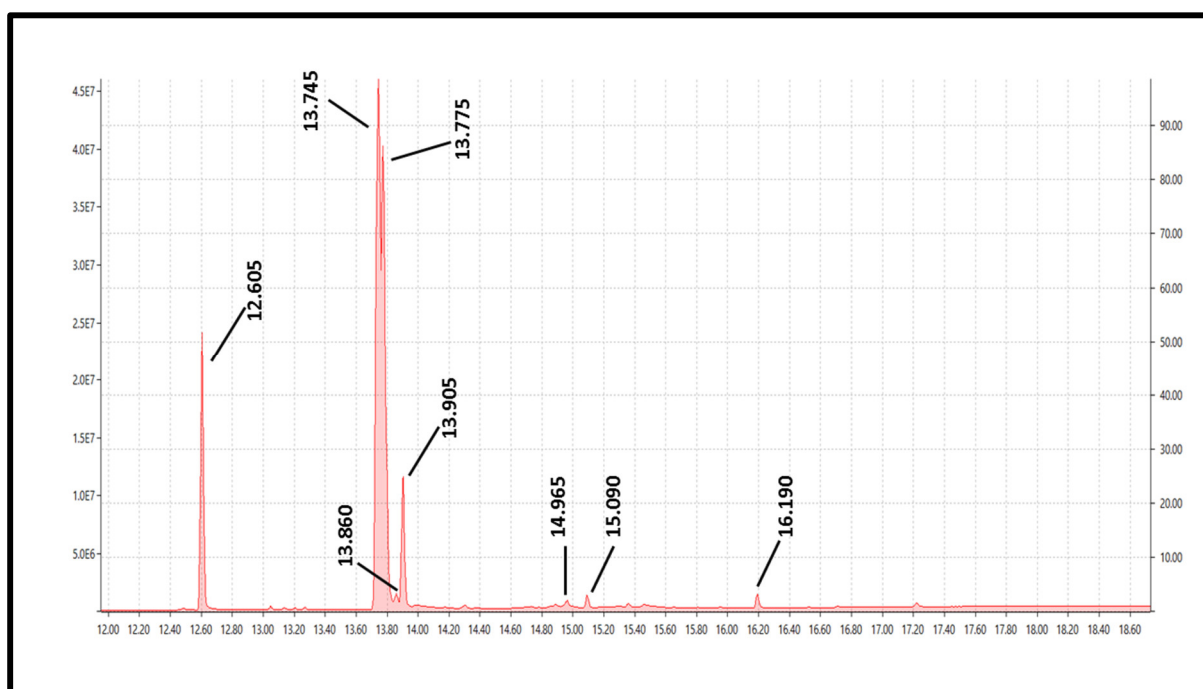
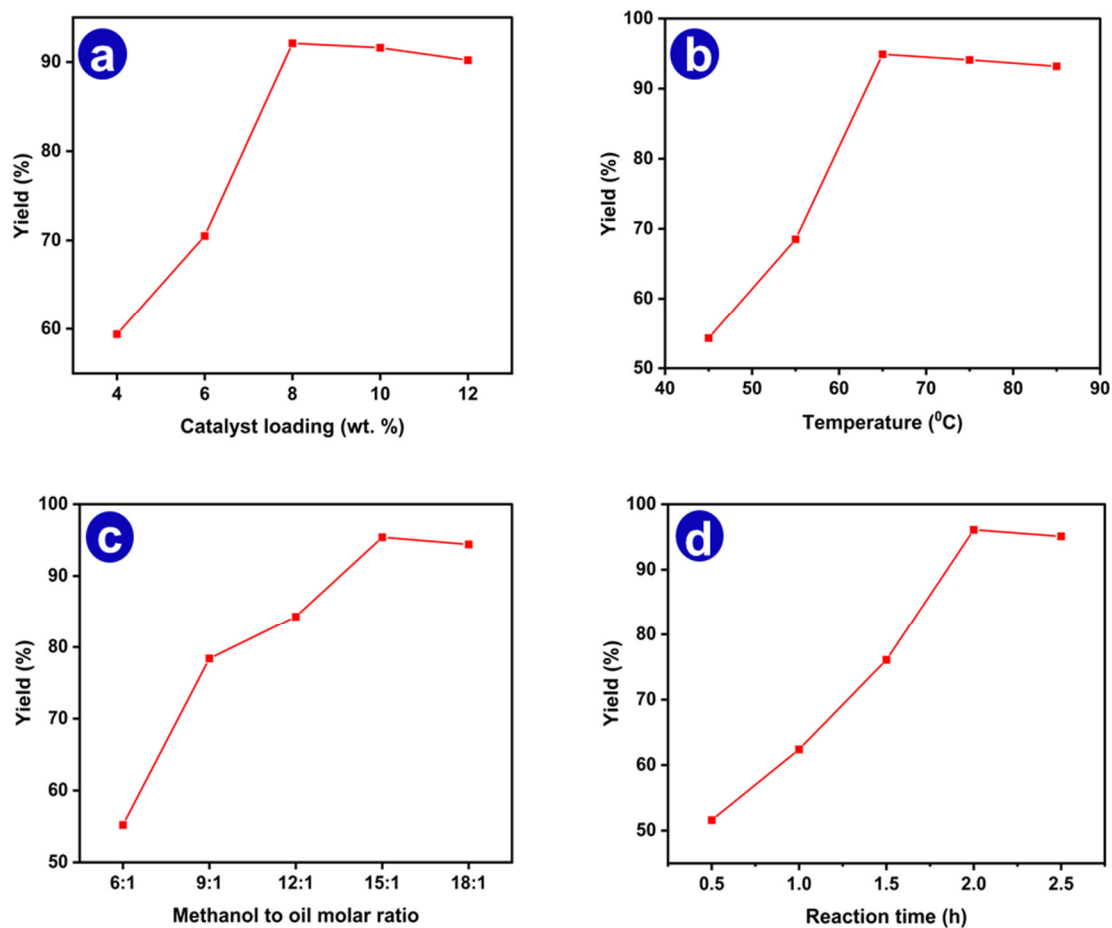


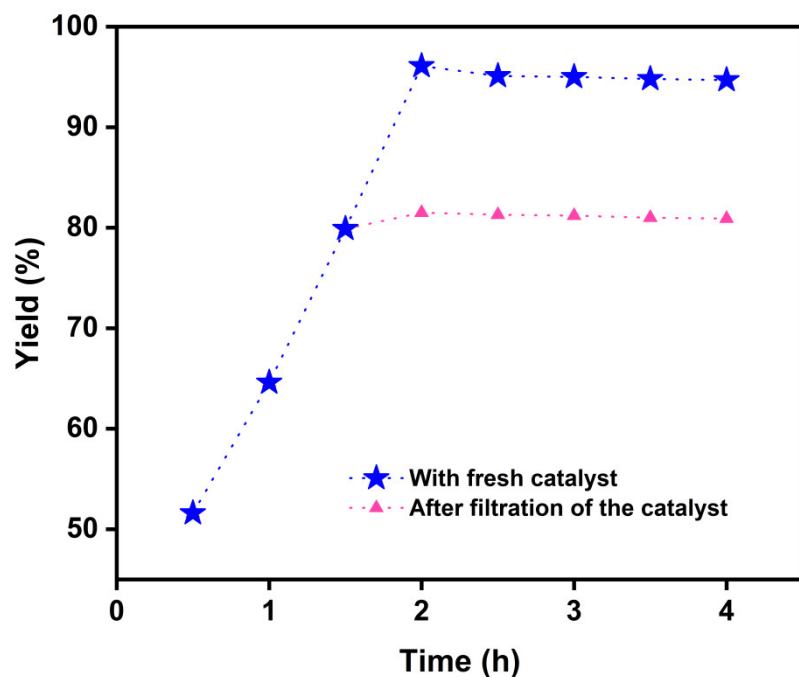
Figure S2. (a)  $^1\text{H}$ -NMR and (b)  $^{13}\text{C}$ -NMR analysis of the biodiesel product.



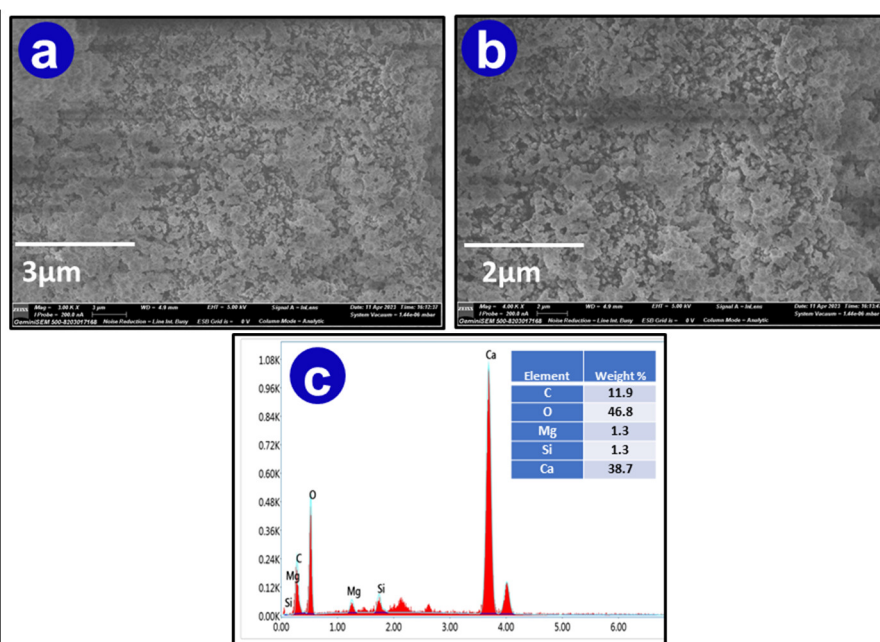
**Figure S3.** Gas chromatography analysis of the biodiesel product.



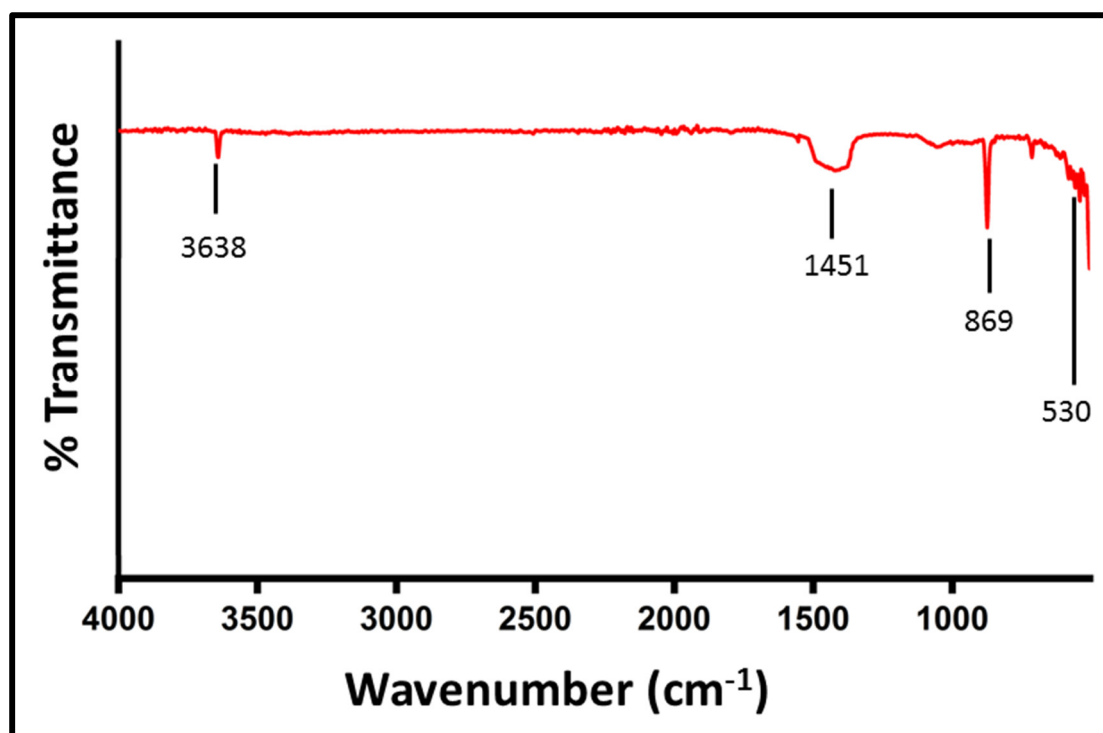
**Figure S4.** Influence of one reaction parameter on biodiesel yield keeping the other three parameters fixed: (a) influence of catalyst loading, (b) influence of temperature, (c) influence of MTOR, and (d) influence of reaction time



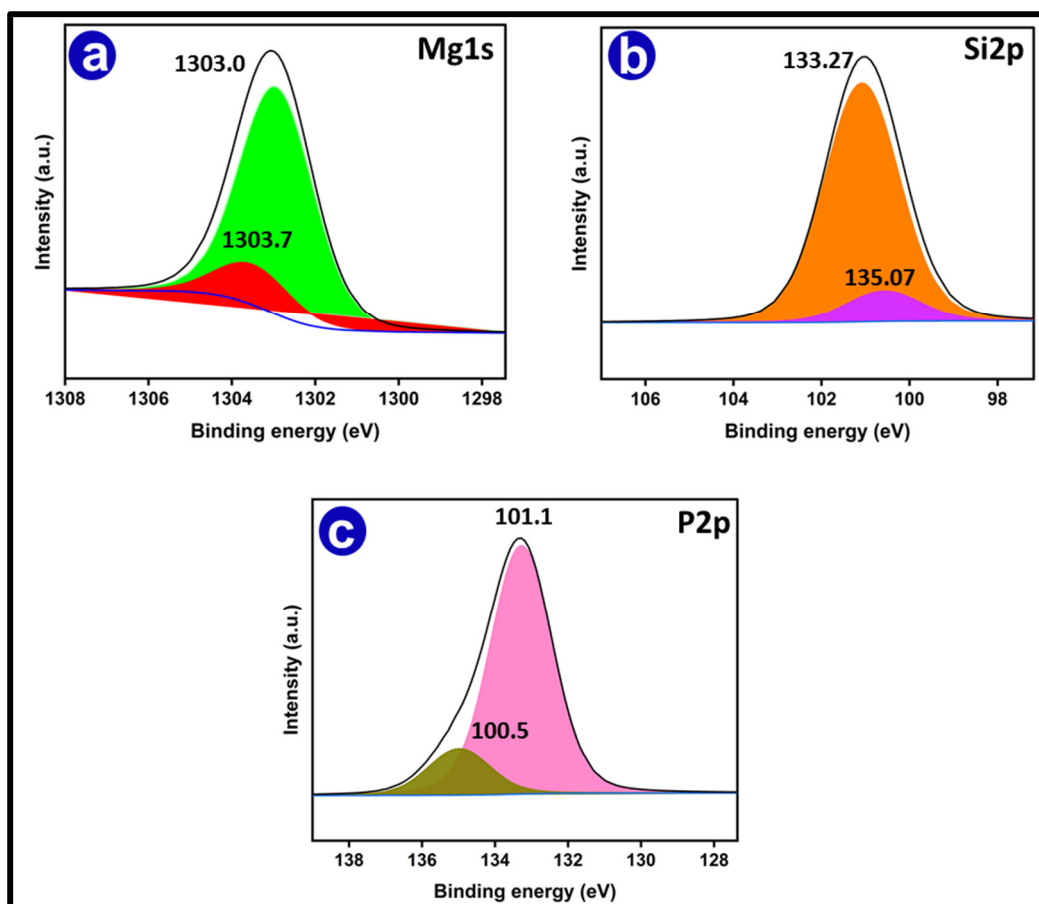
**Figure S5.** Heterogeneity test of the CaO catalyst in transesterification of soybean.



**Figure S6.** Scanning electron microscopy analysis of reused CaO catalyst after 5 cycles: Representative SEM images (**a**,**b**). Respective scale bars and magnifications: (**a**) 3  $\mu\text{m}$ , 3.00 kx (**b**) 2 $\mu\text{m}$ , 4.00 kx; (**c**) the EDX spectrum with elemental composition (inset).



**Figure S7.** FT-IR spectrum of reused CaO catalyst after 5 reaction cycles.



**Figure S8.** XPS deconvolution spectra of (a) magnesium (Mg1s) (b) silicon (Si2p) (c) phosphorus (P2p).