


Supplementary Information

Regenerated Cellulose Membrane from Peanut Shell for Biodiesel Purification

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Figure S1. Image of the regenerated cellulose membrane obtained by spreading 7 mL of cellulose solution in 10 cm diameter Petri dish.

Table S1. Total esters in soybean methyl biodiesel after filtration using the cellulose membranes produced according to the 2^{5-2} fractional factorial design

Experiment	CUEN:cellulose ratio / (mL:g)	N ₂ flux	Stirring	Porogenic agent	Porogenic agent mass / g	Total ester / %
1	2:0.75	no	magnetic	Na ₂ SO ₄	0.600	80.9 ± 1.0
2	4:1.25	no	magnetic	SiO ₂	0.200	NF
3	2:0.75	yes	magnetic	SiO ₂	0.600	89.9 ± 0.5
4	4:1.25	yes	magnetic	Na ₂ SO ₄	0.200	NF
5	2:0.75	no	ultrasound	Na ₂ SO ₄	0.200	85.3 ± 4.6
6	4:1.25	no	ultrasound	SiO ₂	0.600	NF
7	2:0.75	yes	ultrasound	SiO ₂	0.200	80.9 ± 7.8
8	4:1.25	yes	ultrasound	Na ₂ SO ₄	0.600	NF

CUEN: bis(ethylenediamine)copper(II) hydroxide; NF: not filtered.

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Table S2. Analysis of variance (ANOVA) for the total ester content in the biodiesel purification by regenerated cellulose membranes

Source of variation	Sum of squares	Degree of freedom	Mean squares	<i>F</i> -value
Regression	42.819	5	8.564	6.620
Residual	6.468	5	1.294	
Lack-of-fit	3.941	3	1.314	1.040
Pure error	2.527	2	1.263	
$R^2 = 0.8688$		Adjusted $R^2 = 0.7375$		

R^2 : coefficient of determination.

