

## Supplementary data

### **Evaluation of contact time and fiber morphology on bacterial immobilization for development of novel surfactant degrading nanofibrous webs**

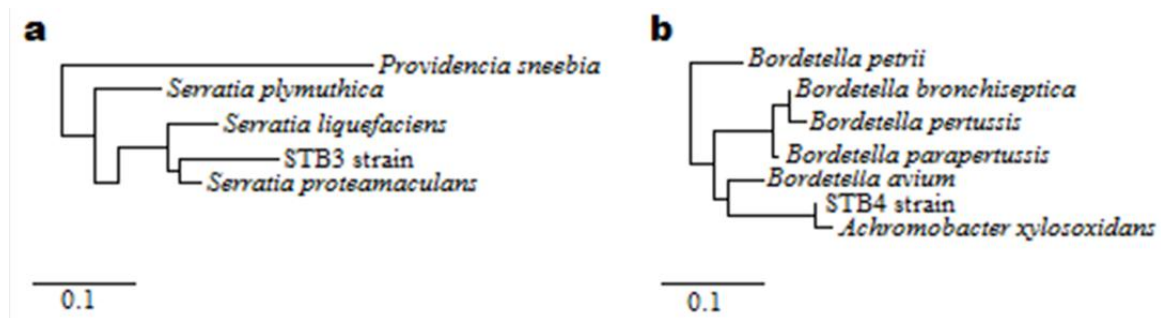
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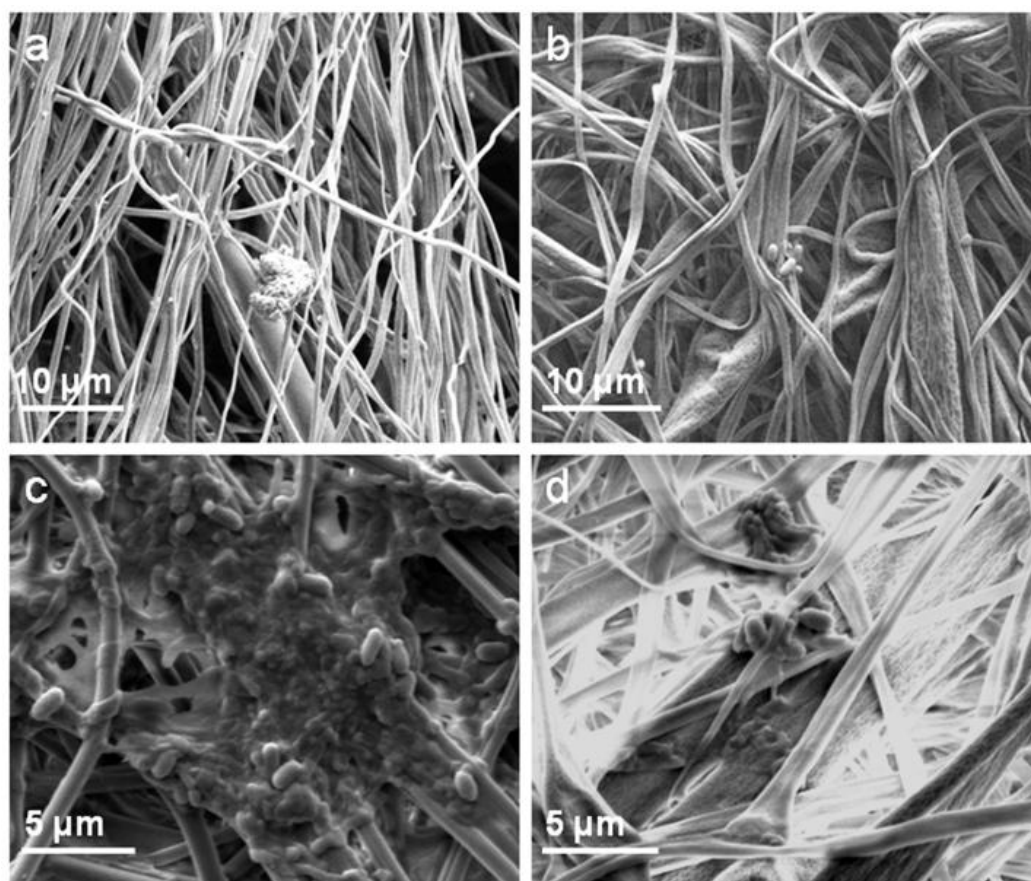
<sup>b</sup>UNAM-National Nanotechnology Research Center, Bilkent University, Ankara 06800, Turkey

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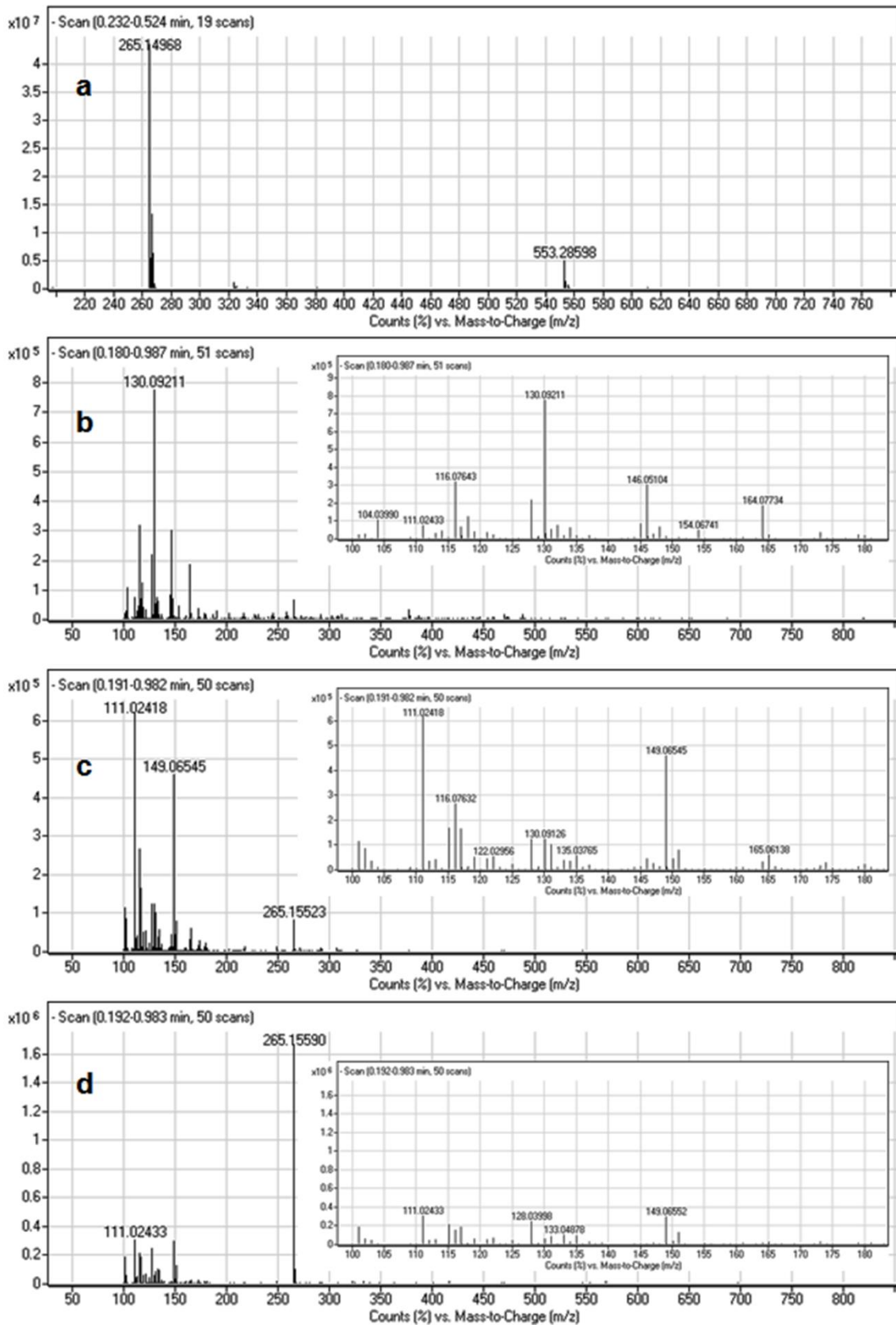
<sup>d</sup>Gazi University, Life Sciences Application and Research Center, 06830, Golbasi, Ankara, Turkey



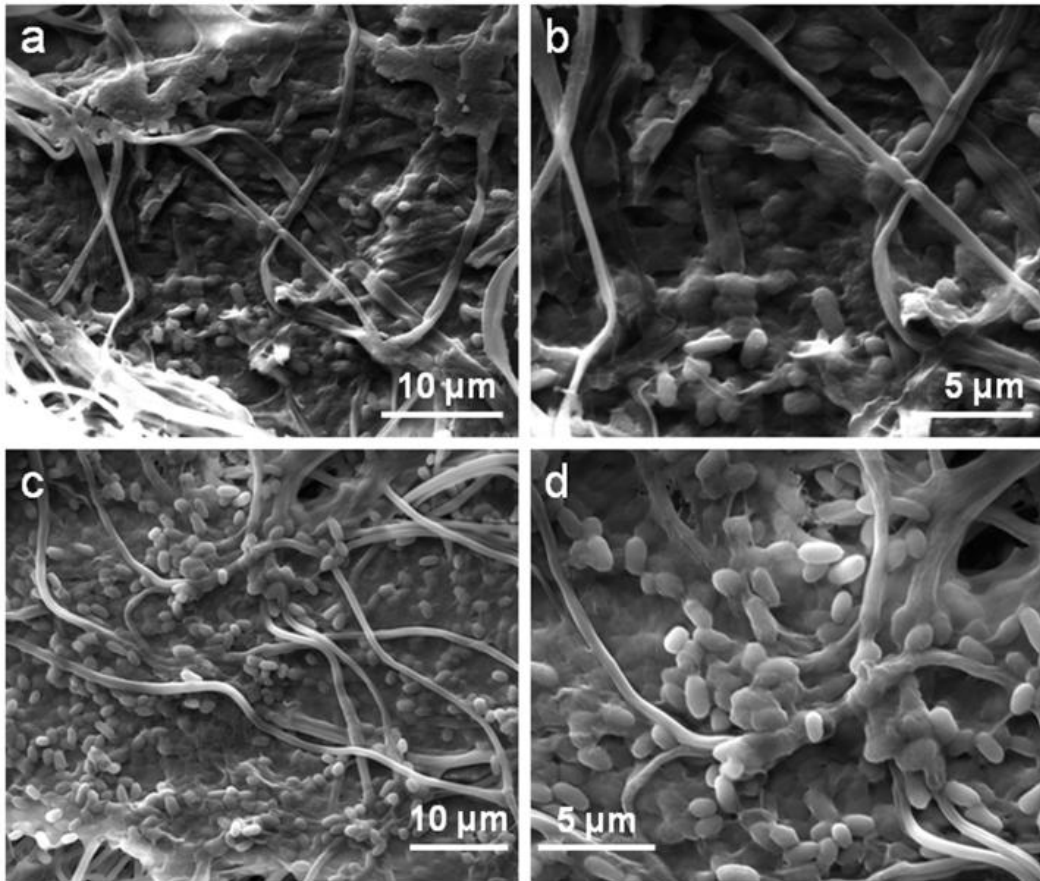
**Supplementary Figure 1.** Phylogenetic trees of (a) STB3 and (b) STB4 strains according to 16S rRNA gene sequencing analysis.



**Supplementary Figure 2.** SEM micrographs of (a-c) nCA and (b-d) pCA nanofibers showing immobilization of STB3 cells onto (a) nCA nanofibers and (b) pCA nanofibers; and immobilization of STB4 cells onto (c) nCA nanofibers and (d) pCA nanofibers after 7 days of incubation.



**Supplementary Figure 3.** LC-MS spectra of (a) SDS solution in water at 100 mg/L (b) nutrient broth in water (c) STB3 sample having 100 mg/L initial SDS after incubation and suspension of bacterial cells (d) STB4 sample having 100 mg/L initial SDS after incubation and suspension of bacterial cells.



**Supplementary Figure 4.** SEM micrographs of (a-b) STB3 immobilized pCA webs and (c-d) STB4 immobilized pCA webs after the reusability test, showing strong bacterial attachments.

**Supplementary Table 1.** Adsorption kinetics coefficients of STB3/pCA and STB4/pCA webs for each isotherm model.

<b>Samples</b>	<b>Isotherm</b>	<b>Parameters</b>	<b>Values</b>	<b>Ry<sup>2</sup> value</b>
STB3/pCA	Freundlich	Kf	184.98	0.991
		1/n	0.555	
	Langmuir	Q <sub>max</sub>	3367	0.992
		b	0.057	
	Toth	Q <sub>max</sub>	3023	0.992
			b	
n		4.9		
STB4/pCA	Freundlich	Kf	76.78	1.000
		1/n	0.48	
	Langmuir	Q <sub>max</sub>	1464	1.000
		b	0.032	
	Toth	Q <sub>max</sub>	1350	1.000
			b	
n		4.58		

**Supplementary Table 2.** The R<sup>2</sup> values of zero, first, second and third order plots for the removal of SDS by STB3/pCA and STB4/pCA webs.

<b>Samples</b>	<b>Model</b>	<b>R<sup>2</sup> values</b>
STB3/pCA	zero order	0.9319
	first order	0.8583
	second order	0.6515
	third order	0.6246
STB4/pCA	zero order	0.8531
	first order	0.7414
	second order	0.6434
	third order	0.6249