

Supporting Information

Improvements in the enzymatic degradation of textile dyes using ionic-liquid-based surfactants

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Table S1. Relative laccase activity (%) in aqueous solutions of ILs.

IL	Relative laccase activity (%)				
	IL concentration (mM)				
	10	50	100	250	350
[N ₈₁₁₁] Br	100.0±3.0	95.2±2.9	83.2±2.5	71.7±2.2	42.7±1.3
[N ₁₀₁₁₁] Br	92.4±2.8	88.6±2.7	86.4±2.6	43.3±1.3	7.1±0.2
[N ₁₂₁₁₁] Br	80.4±2.4	34.8±1.0	27.6±0.8	9.5±0.3	10.8±0.3
[N ₁₄₁₁₁] Br	60.2±1.8	17.5±0.5	10.2±0.3	7.3±0.2	8.9±0.3
[C ₈ mim] Cl	100.0±3.0	95.2±2.9	85.4±2.6	45.2±1.7	27.3±0.8
[C ₁₀ mim] Cl	100.0±3.0	95.2±2.9	90.4±2.7	18.5±0.6	12.4±0.4
[C ₁₂ mim] Cl	92.8±2.8	13.8±0.4	2.8±0.1	1.6±0.1	0.8±0.1
[C ₁₄ mim] Cl	103.0±3.1	7.56±0.2	0.7±0.1	0.1±0.1	1.6±0.1
[Ch][C ₈ O ₂]	49.1±1.5	29.8±1.8	21.7±0.6	14.0±0.4	12.5±2.3
[Ch][C ₁₀ O ₂]	49.7±1.5	49.9±1.5	48.4±1.5	28.8±0.9	17.6±1.5
[Ch][C ₁₂ O ₂]	32.2±2.0	20.8±0.6	13.6±0.4	0.5±0.1	0.5±0.1
[Ch][C ₁₄ O ₂]	24.6±1.7	0.6±0.1	0.2±0.1	1.1±0.1	2.7±0.1

Table S2. Indigo Carmine decolorization (%) by laccase at 25°C. Assays performed using aqueous solutions of laccase and aqueous solutions of laccase and IL.

Time (h)	Indigo carmine decolorization (%)		
	Laccase	Laccase + [N₁₀₁₁₁]Br	Laccase + [C₁₀mim]Cl
0.5	6.3±3.8	82.4±2.1	30.3±1.7
1.0	10.6±1.2	80.5±4.4	43.3±1.5
1.5	16.6±2.0	81.3±3.4	51.0±2.6
2.0	20.5±1.9	82.0±3.2	57.0±1.0
2.5	24.5±2.8	83.5±2.3	61.7±3.1
24	29.0±1.5	92.5±3.1	70.1±3.5