

Supplementary Materials

Table S1. Difference of Degradation Efficiency between Single-strain and Ttwo-species Immobilization Mycelial Pellet

Treating object	Papermaking wastewater			Dye Wastewater			Heavy wastewater		
	C	H	L	CR	CV	MG	Cu ²⁺	Pb ²⁺	
Treatment rate by single-strain mycelial pellet, %	2.38 ± 0.46	4.14 ± 0.49	34.05 ± 2.80	69.51 ± 4.12	62.33 ± 3.07	71.13 ± 5.22	38.27 ± 3.06	34.06 ± 3.66	
Treatment rate by two-species immobilization mycelial pellet, %	39.05 ± 1.52	50.90 ± 3.48	51.61 ± 2.81	92.74 ± 5.29	84.23 ± 8.32	91.61 ± 5.5	65.96 ± 3.18	52.33 ± 4.18	

Experiment data is expressed as mean±SD. The data of the two groups are significantly different (sig < 0.05), which is statistically significant.

Table S2. Effect of on papermaking wastewater degradation

Time of reuse	Cycle times, %	Cellulose, %	Hemicellulose, %
1	51.27 ± 3.02	41.58 ± 2.78	57.1 ± 2.57
2	44.96 ± 1.93	37.15 ± 1.15	39.06 ± 1.36
3	27.04 ± 0.78	20.75 ± 1.07	27.43 ± 0.79
4	Autolysis		

Experiment data is expressed as mean ± SD.

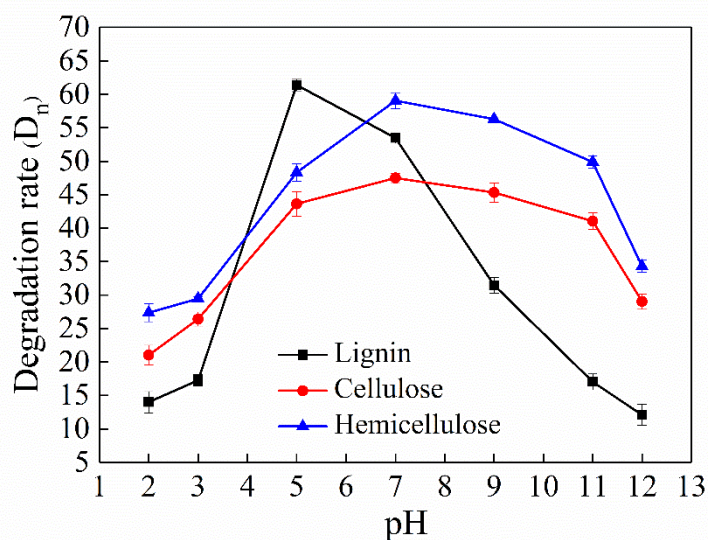


Fig. S1. Effect of pH on lignin, cellulose and hemicellulose degradation. (The experiment conditions were as follows: 160 r/min and 28°C, adjusted the pH to 2, 3, 5, 7, 9, 11 and 12, respectively. Sampled at an interval of 2 days).

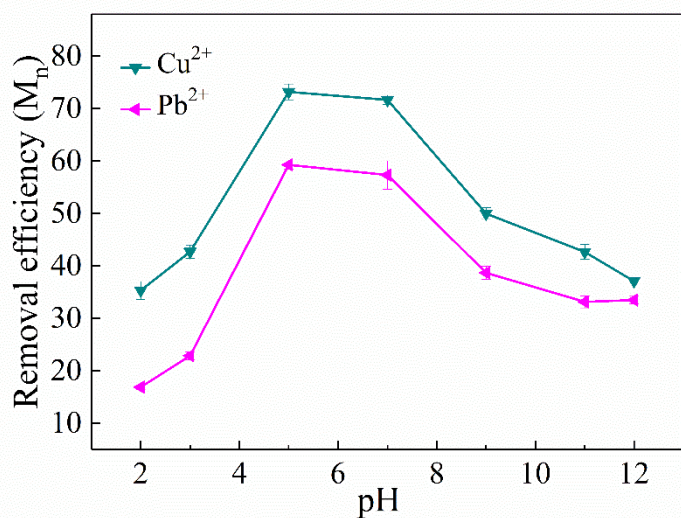


Fig. S2. Effect of pH on Cu²⁺ and Pb²⁺ adsorption. (The experiment conditions were as follows: 160 r/min and 28°C, adjusted the pH value to 2, 3, 5, 7, 9, 11 and 12, respectively. Sampled at an interval of 1 day).

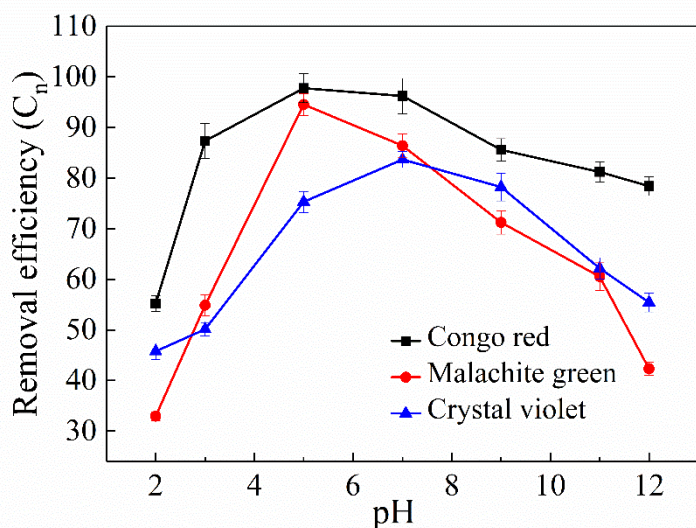


Fig. S3. Effect of pH on the dye decolorization. (The experiment conditions were as follows: 160 r/min and 28°C, adjusted the pH value to 2, 3, 5, 7, 9, 11 and 12, respectively. Sampled at an interval of 1 day).

Appendix

18srDNA sequence of *Aspergillus fumigatus*:

GAACCTGCGGAAGGATCATTACCGAGTGAGGGCCCTCTGGGTCCAACCTCCCACCCGTGTCTATCGTACCTT

GTTGCTTCGGCGGGCCCGCCGTTTCGACGGCCGCGGGGAGGCCTTGCGCCCCGGGCCCGCGCCCGCCGA

AGACCCCAACATGAACGCTGTTCTGAAAGTATGCAGTCTGAGTTGATTATCGTAATCAGTTAAAACCTTTCAAC
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GCGGCGGCACCGCGTCCGGTCCTCGAGCGTATGGGGCTTTGTACCTGCTCTGTAGGCCCGGCCGGCGCCA
GCCGACACCCAACTTTATTTTTCTAAGGTTGACCTCGGATCAGGTAGGGATAACCCGCTGAACTTAAGCATATC
AATAA