## **Supporting information**

## In-vivo and in-vitro efficient textile wastewater remediation by

## Aspergillus niger biosorbents

Shuhui Li<sup>a,b</sup>, Jianying Huang<sup>a\*</sup>, Jiajun Mao<sup>b</sup>, Liyuan Zhang<sup>d</sup>, Chenglin He<sup>b</sup>, Guoqiang Chen<sup>b</sup>, Ivan P. Parkin<sup>c</sup>, Yuekun Lai<sup>a,b\*</sup>

<sup>a</sup>College of Chemical Engineering, Fuzhou University, Fuzhou 350116, China <sup>b</sup>National Engineering Laboratory for Modern Silk, College of Textile and Clothing Engineering, Soochow University, Suzhou 215123, P. R. China <sup>c</sup>Department of Chemistry, University College London, London, WC1H 0AJ, United Kingdom <sup>d</sup>Department of Civil Engineering, The University of Hong Kong, Hong Kong, P. R. China \*Corresponding Author E-mail: jyhuang@fzu.edu.cn; yklai@suda.edu.cn

## Figure Captions:

**Fig. S1** The relationship between cultivation time and the growth weight and diameter of fungus spores.

**Fig. S2** The interaction between pH values and cultivate time on various concentration of dyes by "in-vivo" adsorption.

**Fig. S3** The optical images of three acid dyes on various pH values: (a) Orange 56, (b) Blue 40 and (c) Blue 93.

**Fig. S4** The EDS analysis of fungus spore: (a-f) element mapping and (g) energy spectrum and elements proportion.

**Fig. S5** The optical images of as-prepared 3D fungus aerogels with different weight concentrations of fungus hyphae: A-0.5 wt%, B-0.25 wt%, C-0.1 wt%, D-0.05 wt%. (top and bottom showed the diameter and height of as-prepared fungus aerogels, respectively)

Fig. S6 FT-IR spectrum of pure fungus aerogel, GO and composite fungus/GO aerogel.

**Fig. S7** The display of conduction ability of 3D fungus/GO aerogles before (a) and after (b-d) carbonized: a LED couldn't be lighted by fungus/GO aerogel, but can be illuminated by carbonized fungus/GO aerogel.



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