

## Supplementary Information

### **Solar-driven active and reusable immobilized fluorine-doped ZrO<sub>2-x</sub> thin film photocatalyst for dye-contaminated water**

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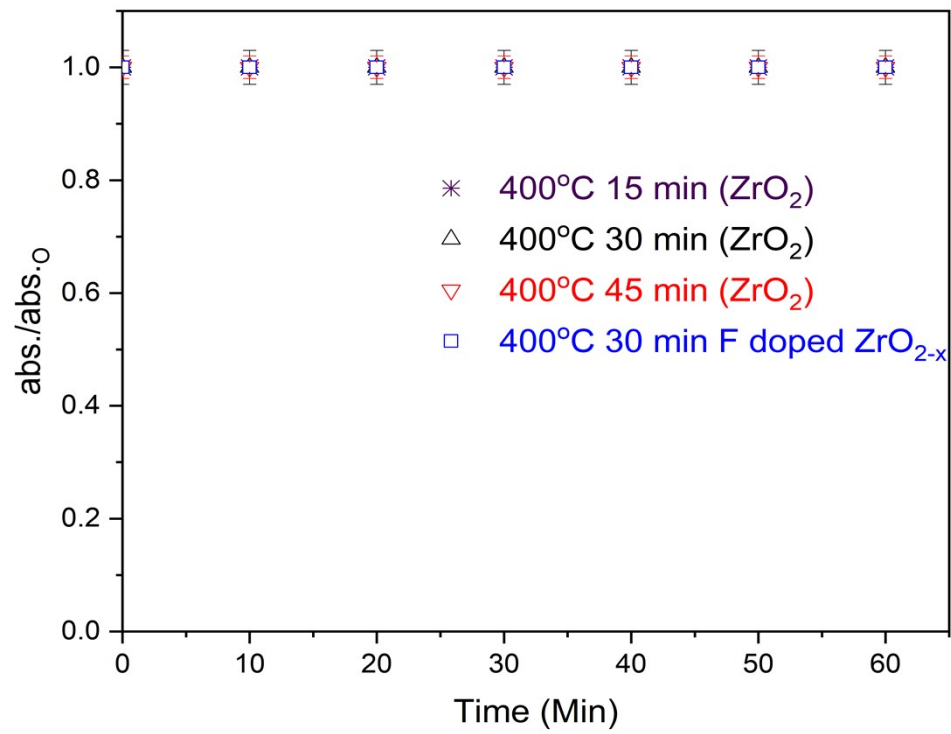
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**Fig. S1 The adsorption profile of ZrO<sub>2</sub> deposited at 400°C for (15, 30, and 45 min) and F-doped ZrO<sub>2-x</sub> (400°C/30 min) thin films prepared, RR =10 mg/L at natural pH.**