Supplementary Information

Study of Adsorption-Oxidative Degradation for PAHs over Organic- Inorganic hybrid layered hydrotalcite

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† Electronic supplementary information (ESI) available.

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Contents

Method of measurement of ozone concentration:

The determination mechanism is that the strong oxidant ozone reacts with aqueous solution of potassium iodide to produce free iodine, and the ozone is reduced to oxygen, which makes the free iodine appear in color. Starch is used as an indicator, and the reaction between free iodine and starch appears blue and purple. A certain concentration of sodium thiosulfate solution is used for titration. The reaction equation is as follows: Eq. 1 and Eq. 2:

$$O_3 + 2KI + H_2O \rightarrow O_2 + I_2 + 2KOH \quad (1)$$

$$I_2 + 2Na_2S_2O_3 \rightarrow 2NaI + Na_2S_2O_6 \quad (2)$$

According to the standard curve was obtained by regression (shown in **Fig. S1**),

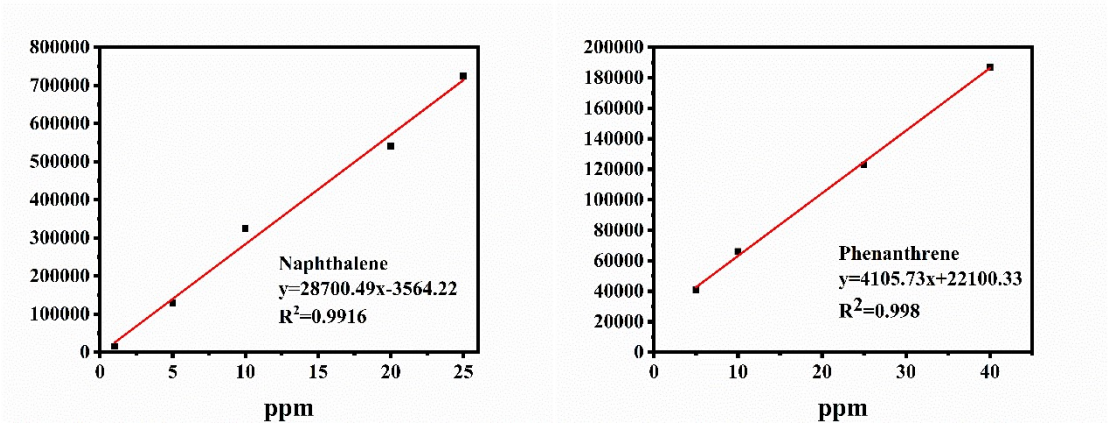


Fig. S1. Standard curve of Nap and PA.

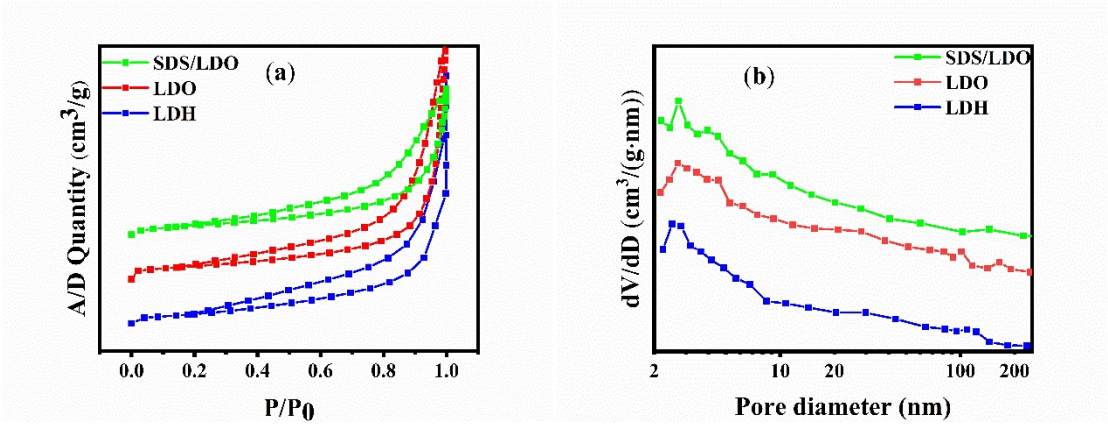


Fig. S2. N_2 adsorption/desorption isotherm of catalysts (a) and Pore size distribution curves (b).

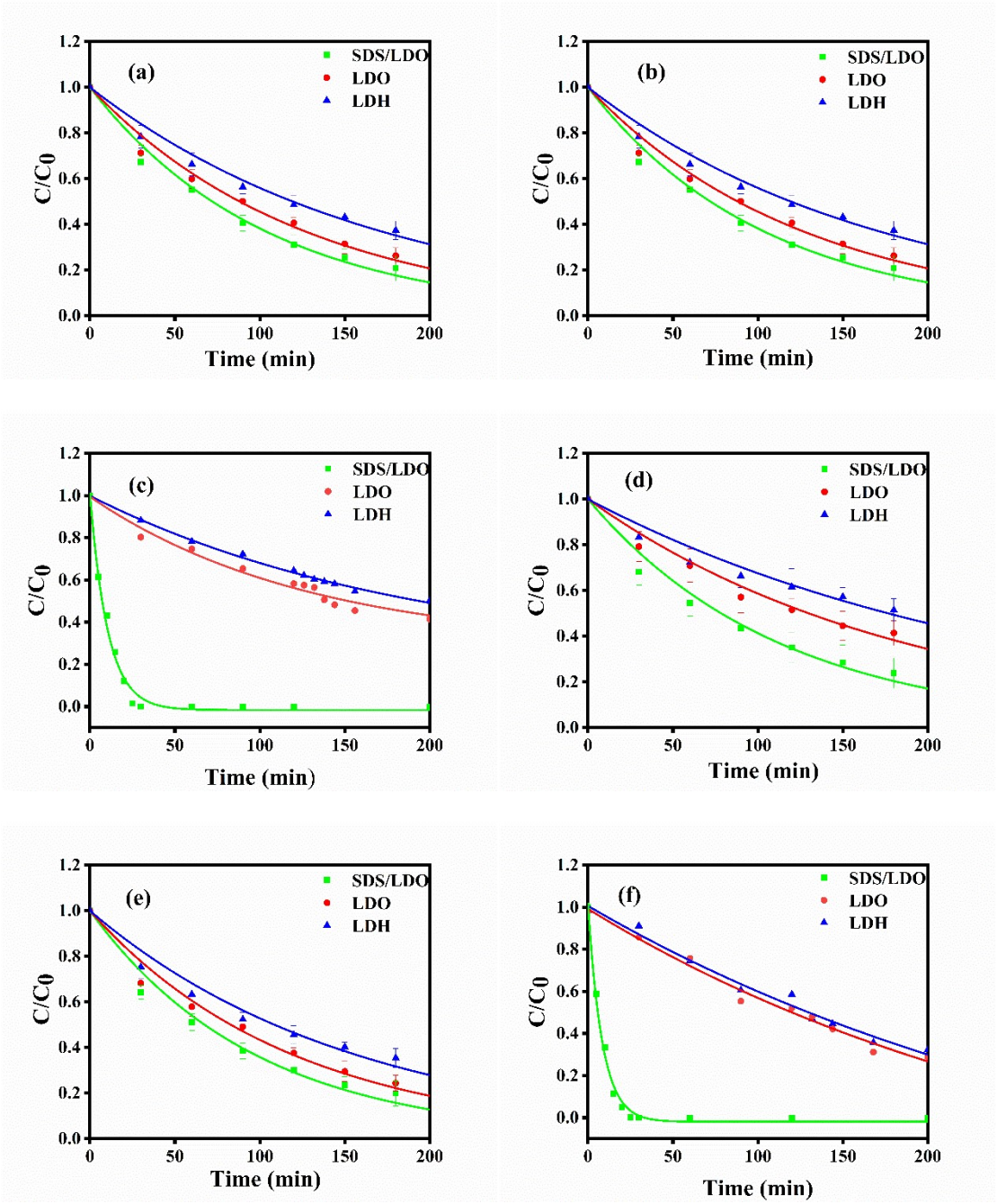


Fig. S3. Degradation of Nap and PA

(a) Nap oxidized by H_2O_2; (b) Nap oxidized by $Na_2S_2O_8$; (c) Nap oxidized by O_3;

(d) PA oxidized by H_2O_2; (e) PA oxidized by $Na_2S_2O_8$; (f) PA oxidized by O_3.

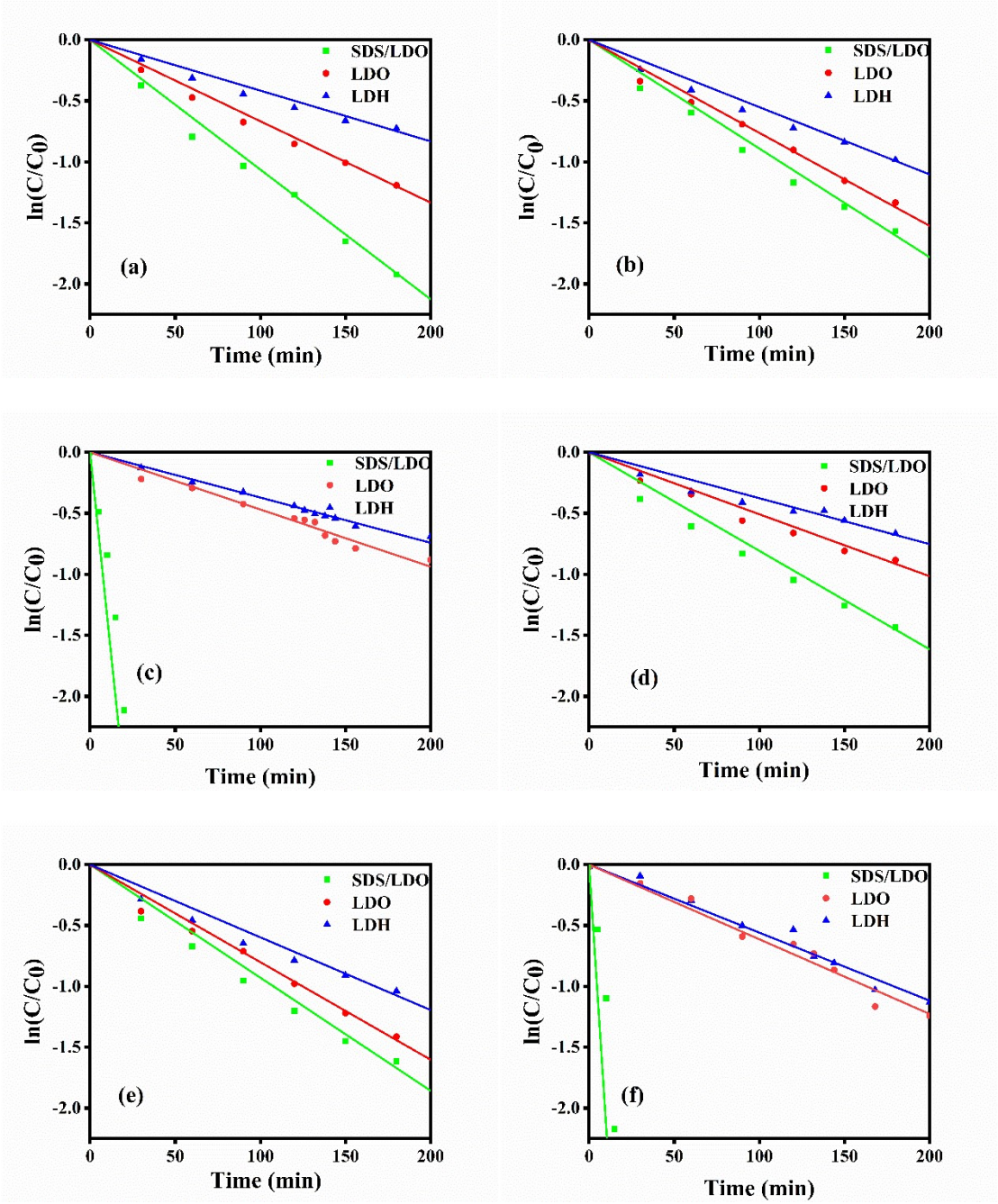
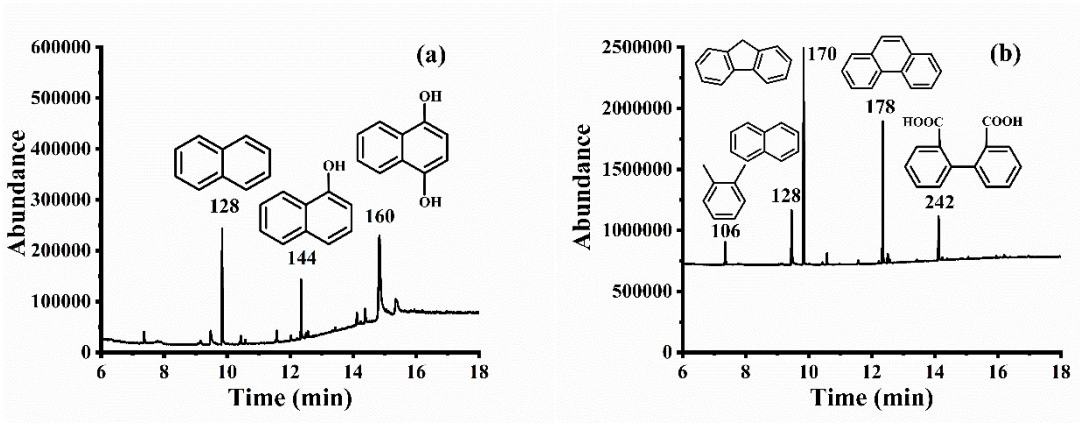


Fig. S4. Pseudo-first-order kinetic equation for catalytic degradation of Nap and PA (a) Nap oxidized by H_2O_2; (b) Nap oxidized by $Na_2S_2O_8$; (c) Nap oxidized by O_3; (d) PA oxidized by H_2O_2; (e) PA oxidized by $Na_2S_2O_8$; (f) PA oxidized by O_3.



Sch. S1. Degradation mass spectrometry (a) Nap and (b) PA.