Supplementary Material

Promoted catalytic degradation performance over MnOx nanoflower catalysts modified by transition metal

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The masses of the various catalysts obtained after calcination are as follows: MnOx-NP-AA weighed 2.1210 g, MnOx-NP-CA weighed 1.7648 g, and MnOx-NF weighed 4.3707 g.

Fourier-transform infrared (FT-IR) spectrometer were performed to detect the surficial functional group via Thermo Fisher.

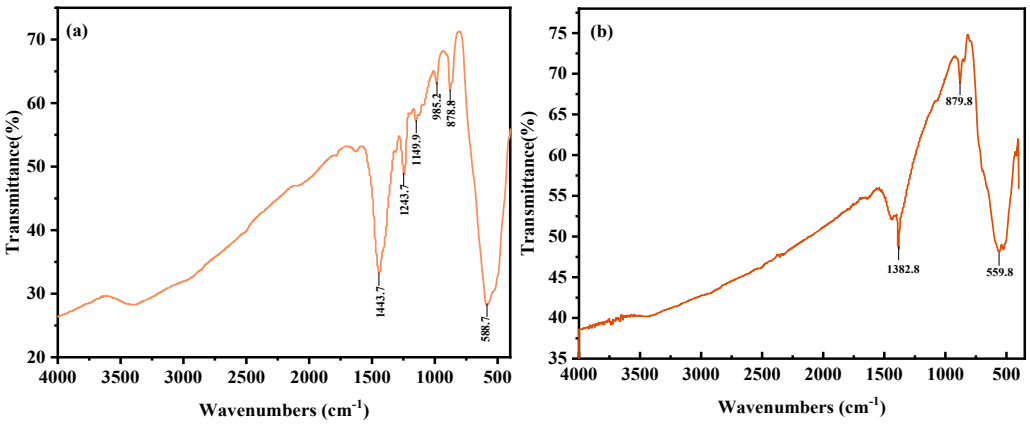

Fig. S1. Infrared spectra of perfluoropolyether (a) Before decomposition and (b) After decomposition

PFPE utilizes a Y-type polyether with the fundamental structure $CF_3O(C_3F_6O)\ m(CF_2O)\ nCF_3$. The supplier is Fujian Yonghong Advanced Materials Co., Ltd. Additional relevant properties of PFPE are detailed in Table S1.

Table S1 Related Properties of PFPE-

Average molecular weight	1500
ISO Viscosity Grade	100
Density (20℃)	1.91 g/cm^3
Kinematic viscosity (20℃)	300 mm^2/s
Kinematic viscosity (40℃)	100 mm^2/s
Viscosity Index	110
tipping point	-34 ℃
Evaporation loss (120℃, 22hr)	0.1 %
Acid value	0.01 MgKOH/g

In the experiment, a Hitachi ICS-1000 ion chromatograph was used to determine the concentration of fluoride ions in the samples.

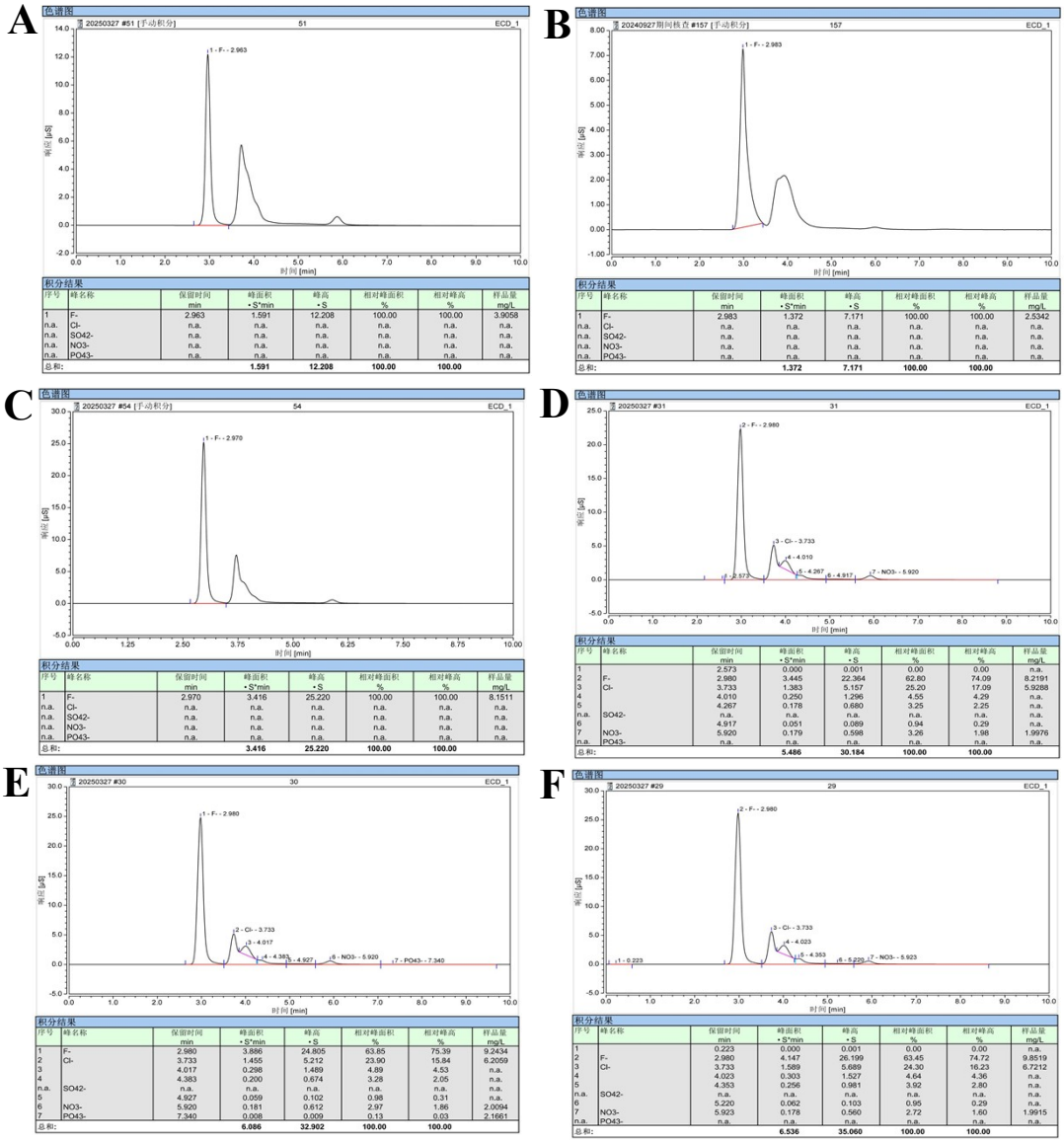

Fig.S2 Ion chromatogram (A) MnOx-NP-AA (B) MnOx-NP-CA (C) MnOx-NF (D) Co/MnOx-NF (E) Ni/MnOx-NF (F) Fe/MnOx-NF