Supplementary Materials

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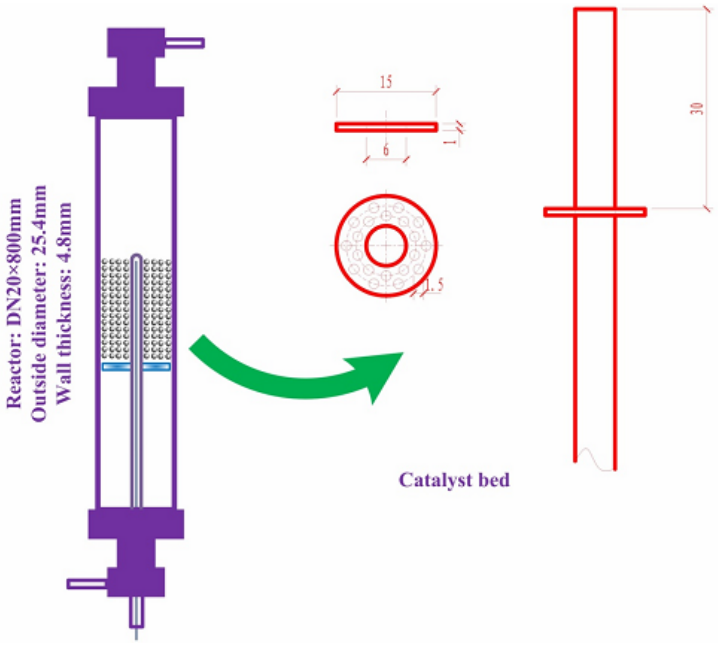

Fig.S1. The exact characteristics of the reactor and the catalyst bed.

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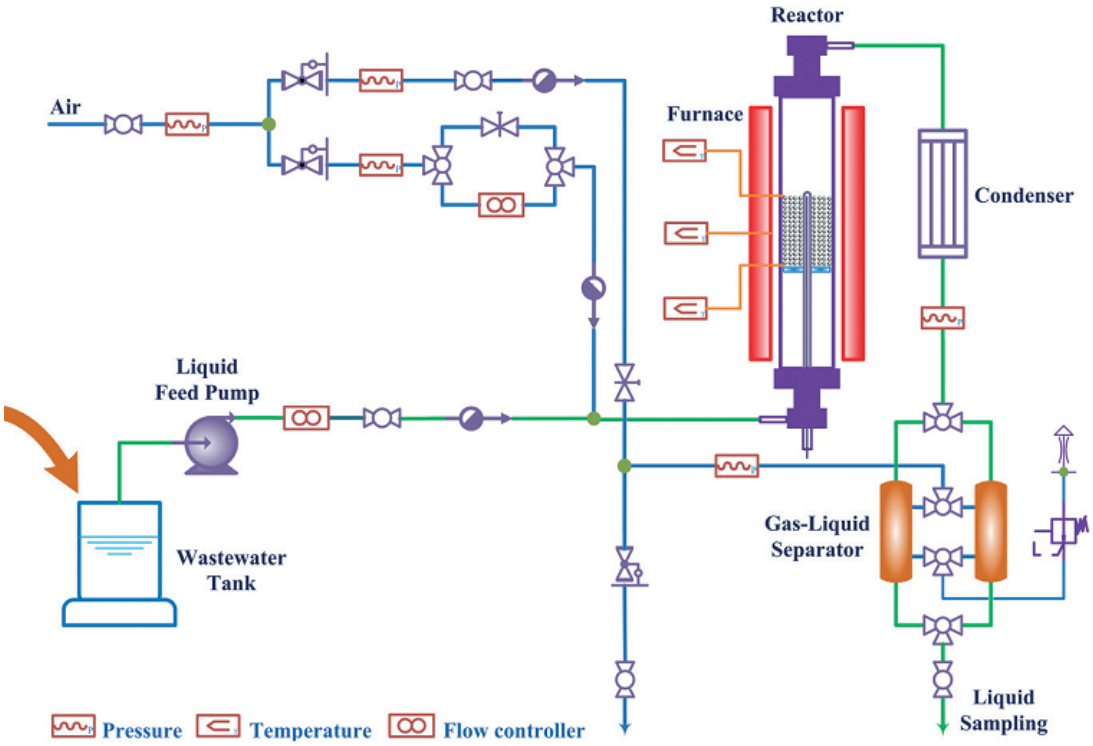


Fig. S2. Schematic diagram of the CWAO experimental equipment and molecular structures of m-cresol.

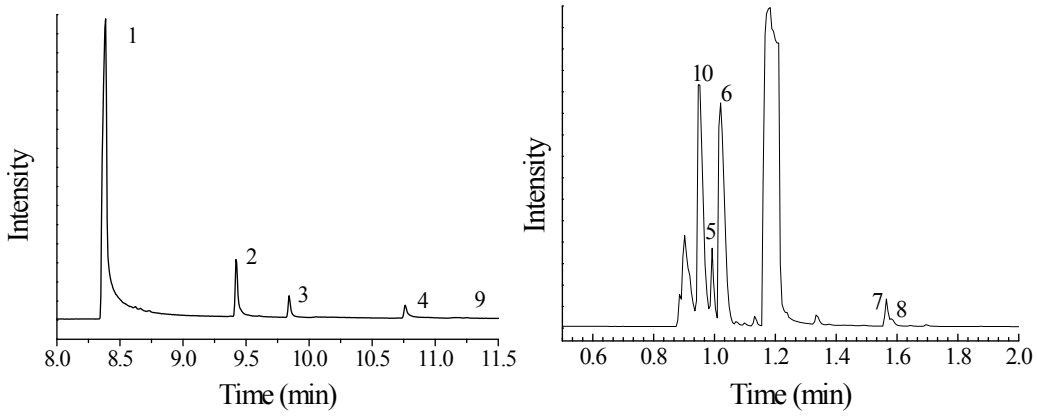
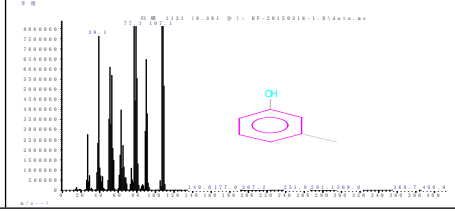
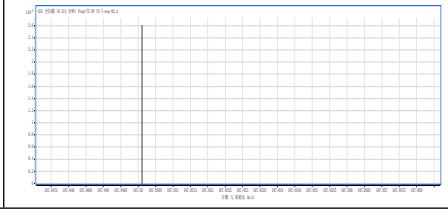
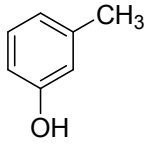
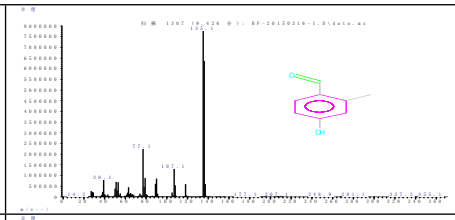
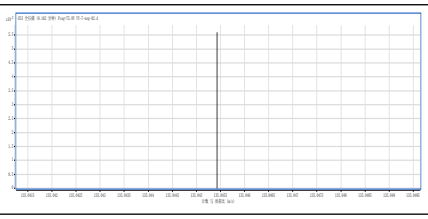
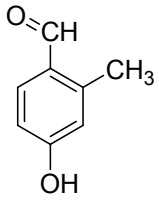
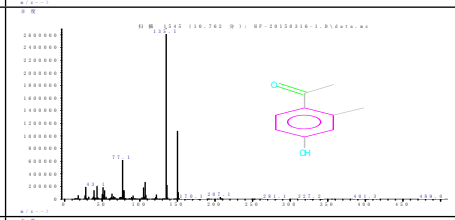
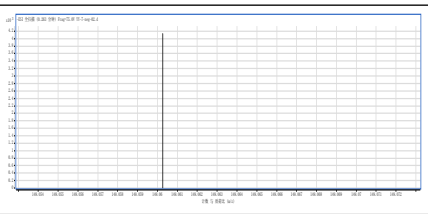
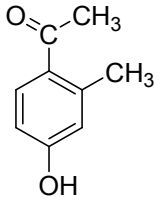
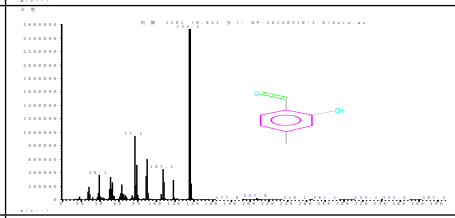
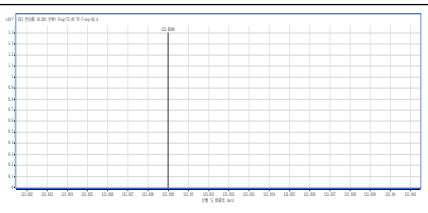
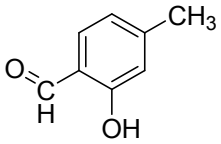
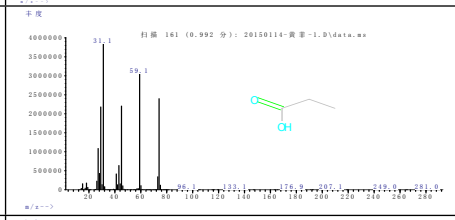
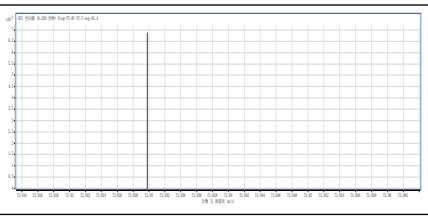
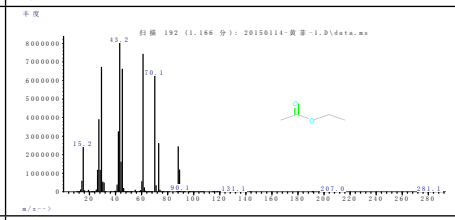
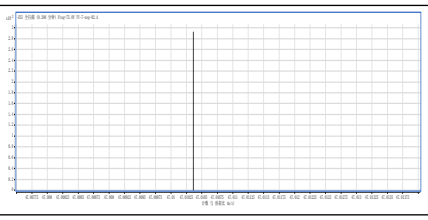
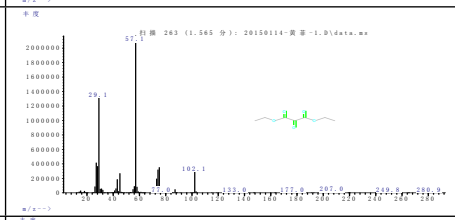
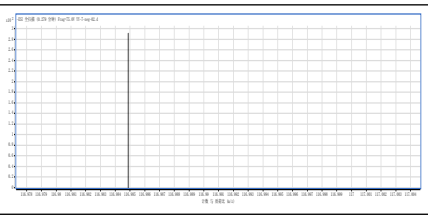
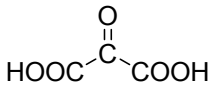
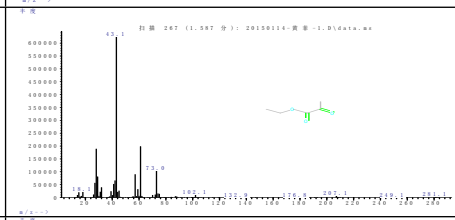
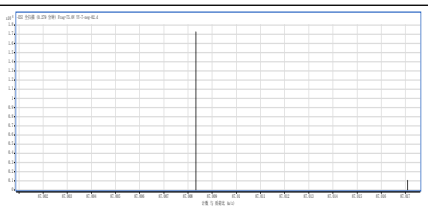
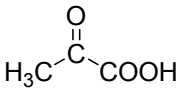
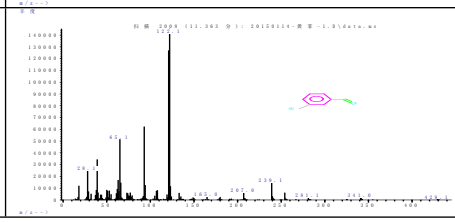
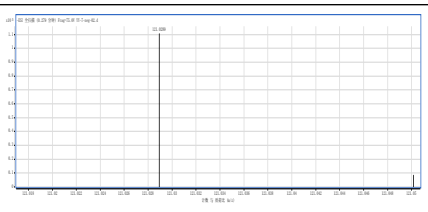
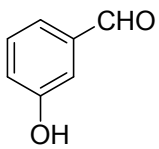
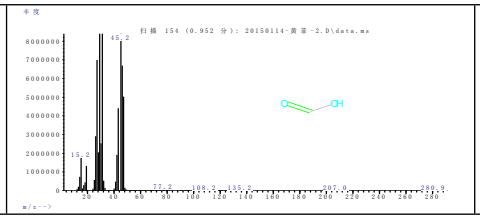
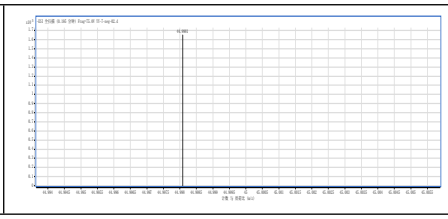


Fig.S3. GC-MS spectra of m-cresol in CWAO reaction

Table S1 Result of GC/MS and HRMS

peak	GC/MS	HRMS	Molecular Formula
1			

2			
3			
4			
5			CH_3CH_2COOH
6			CH_3COOH
7			
8			
9			

10			HCOOH

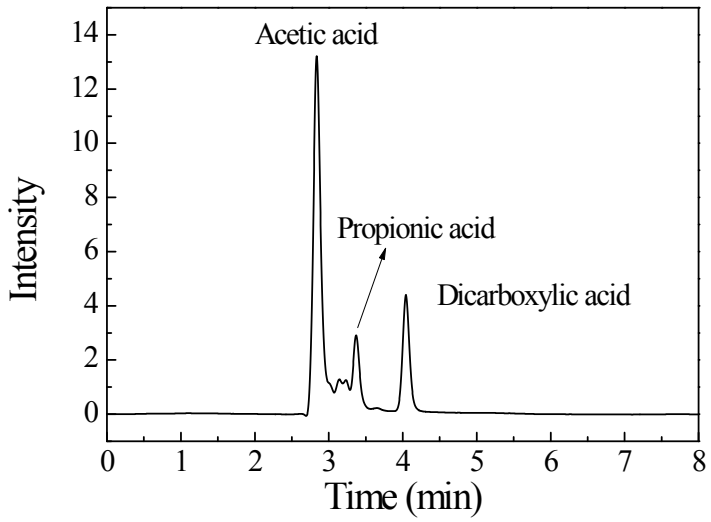
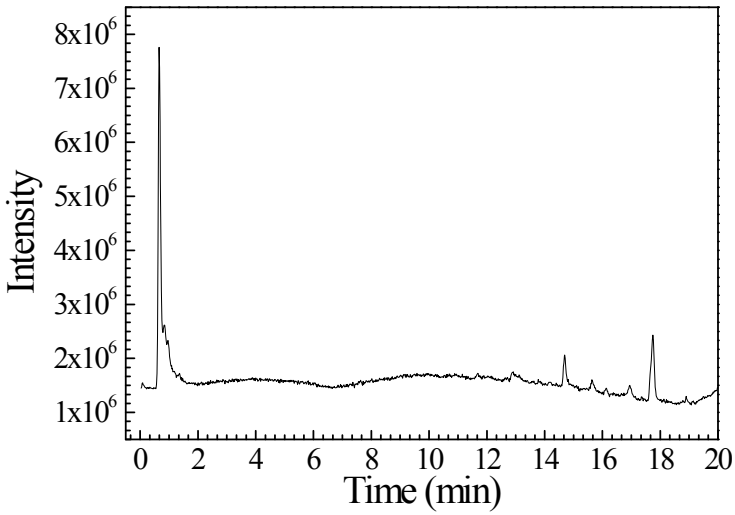
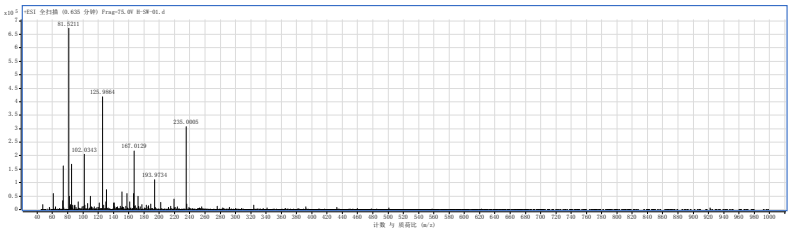


Fig.S4. Total ion chromatogram of the effluent by HNO_3-SW

The total ion chromatogram of the effluent by HNO_3-SW was shown in Fig.S4. It indicated that many low molecular acids were in the intermediates.





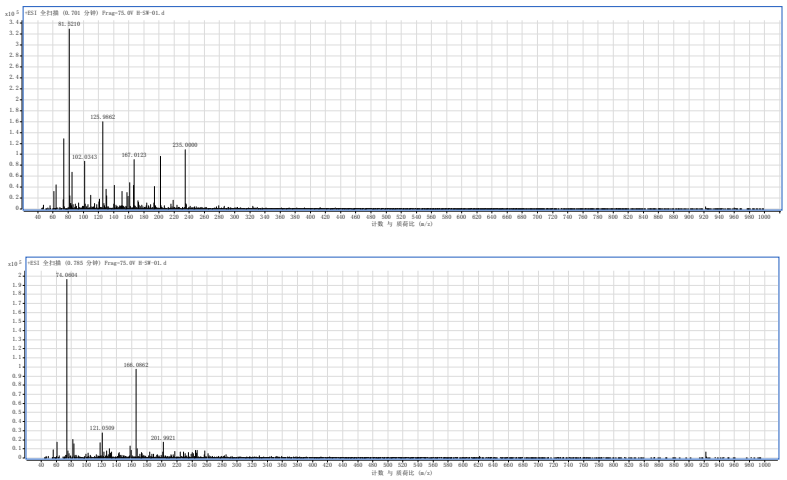


Fig.S5. HPLC-MS spectra of the effluent by HNO_3-SW

From the spectra of HPLC-MS (Fig.S5), the intermediates were low molecular acids and the retention time was lower than 2 mins. It indicated that it was difficult for C18 chromatographic column to identify low molecular acids.