Support Information

Ammonia promoted barium sulfate catalyst for dehydration of lactic acid to acrylic acid

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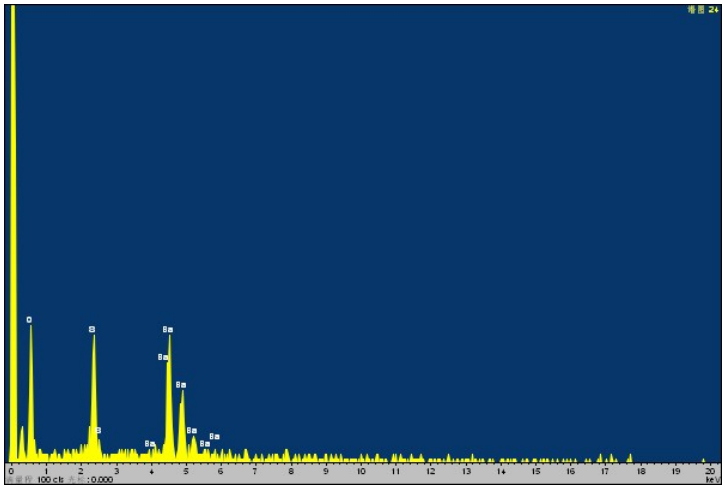
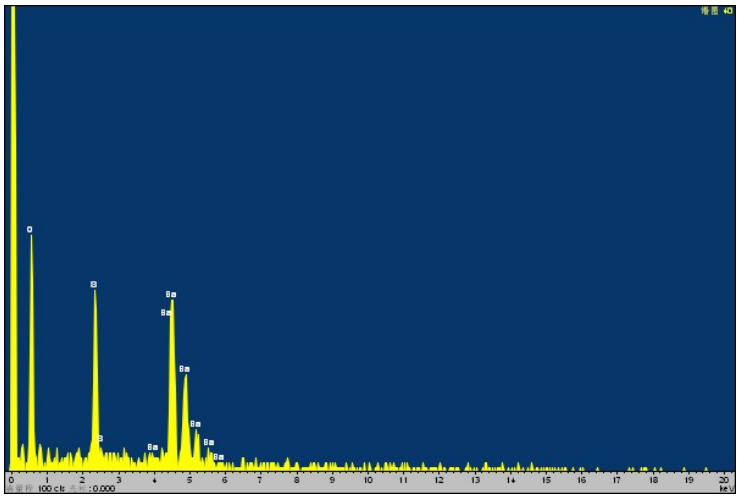
A: treated without alkaline agents



B: treated with aqueous ammonia



C: treated with ethylenediamine

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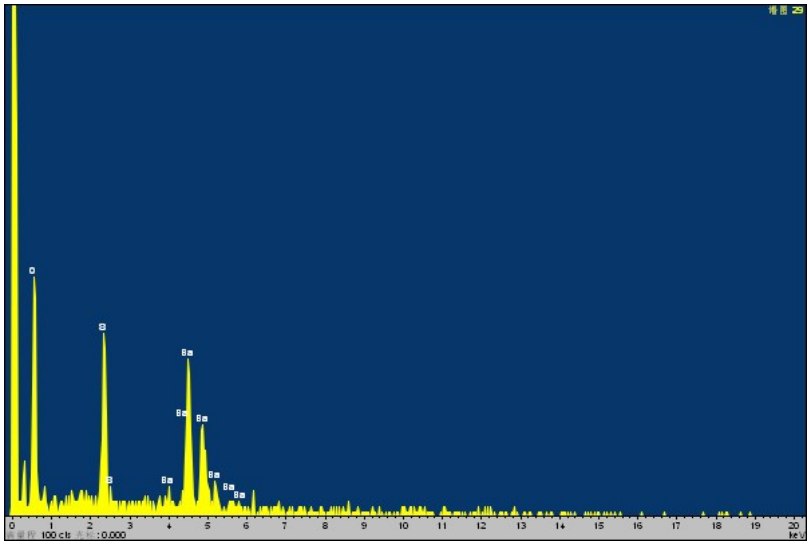
E-mail address: tcmtang2001@163.com (C. M. Tang).



D: treated with n-butylamine

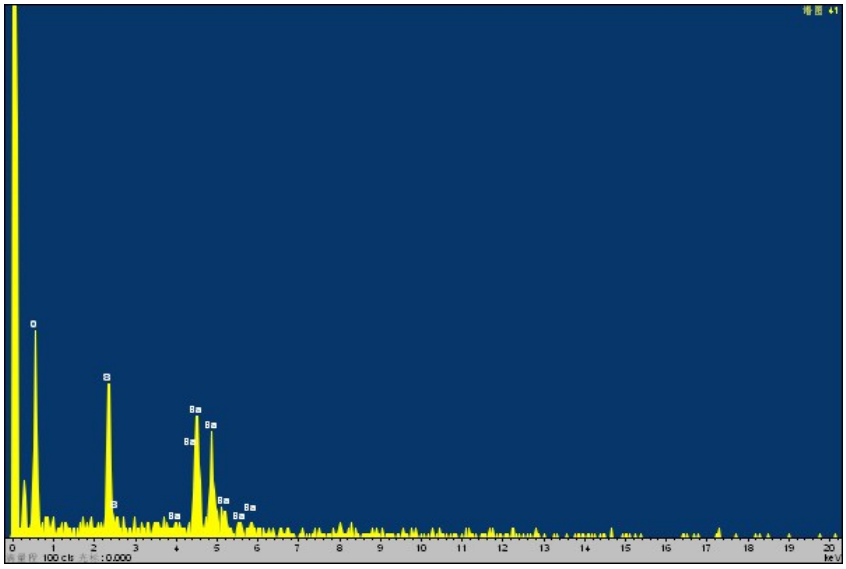


Fig. S1 EDS profiles of the modified $BaSO_4$ with different alkaline reagents.

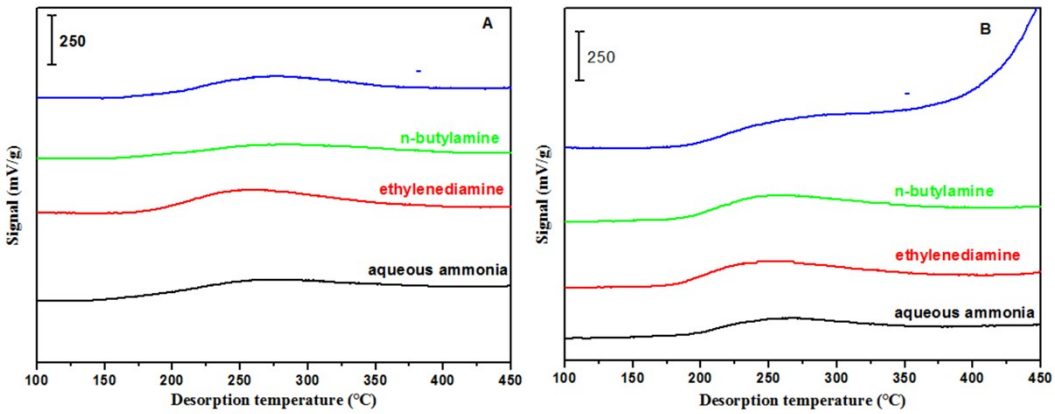


Fig. S2 NH_3-TPD profiles of the modified $BaSO_4$ with different alkaline reagents and their corresponding CO_2-TPD profiles.

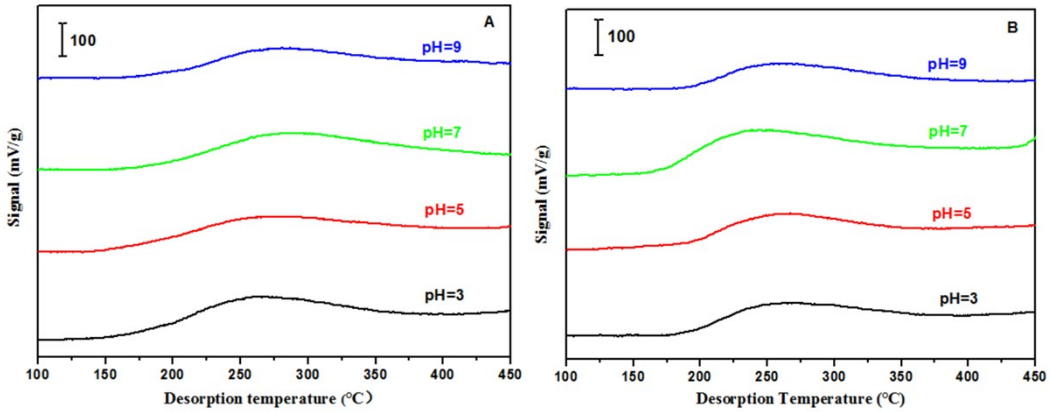


Fig. S3 NH_3-TPD profiles of the modified $BaSO_4$ with aqueous ammonia at different pH values and their corresponding CO_2-TPD profiles.

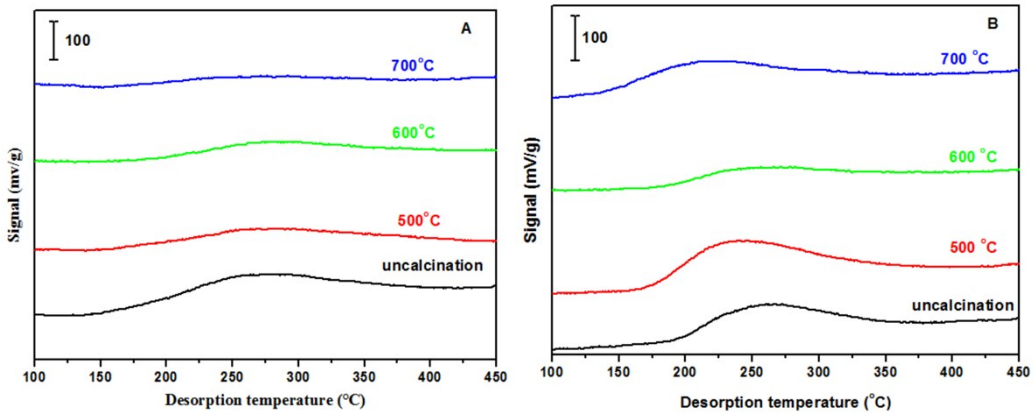


Fig. S4 NH_3-TPD profiles of the modified $BaSO_4$ with aqueous ammonia and pH=5 at different calcination temperatures and their corresponding CO_2-TPD profiles.

Fig. S5 The photos of the used catalyst with different reaction temperatures.

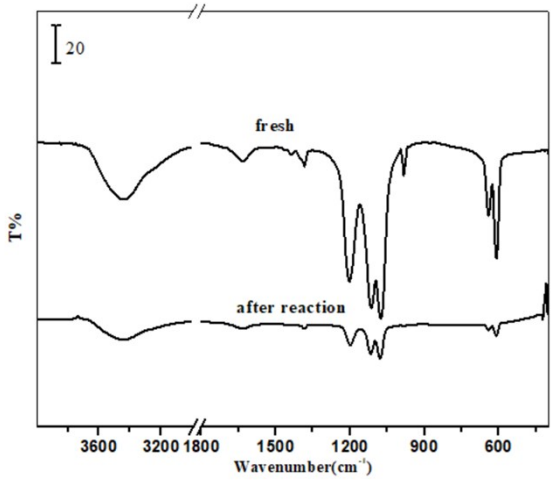


Fig. S6 Comparison of $BaSO_4$ catalyst FT-IR spectra before and after reaction

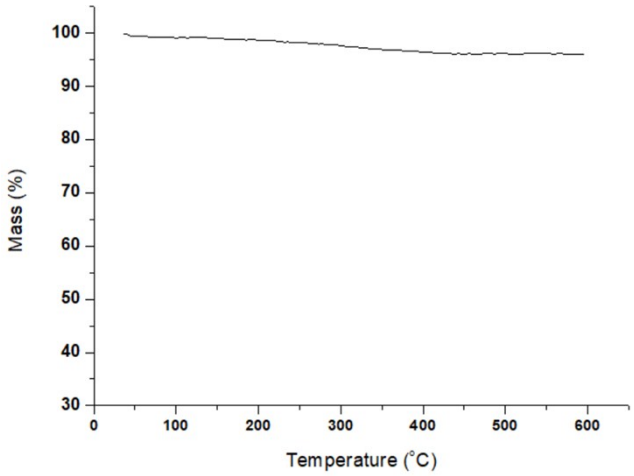


Fig. S7 TG profile of the spent catalyst

Table S1 EDS elemental analysis for the modified $BaSO_4$ with different alkaline reagents

Alkaline reagents	Elemental composition (atom%)		
	Ba	S	O
-	8.64	11.57	79.79
Aqueous ammonia	7.9	9.86	82.24
Ethylenediamine	6.07	10.19	83.73
n-Butylamine	7.02	11.3	81.69