

Electronic Supplementary Material

The stabilization effect of Al₂O₃ on unconventional Pb/SiO₂ catalyst for propane dehydrogenation

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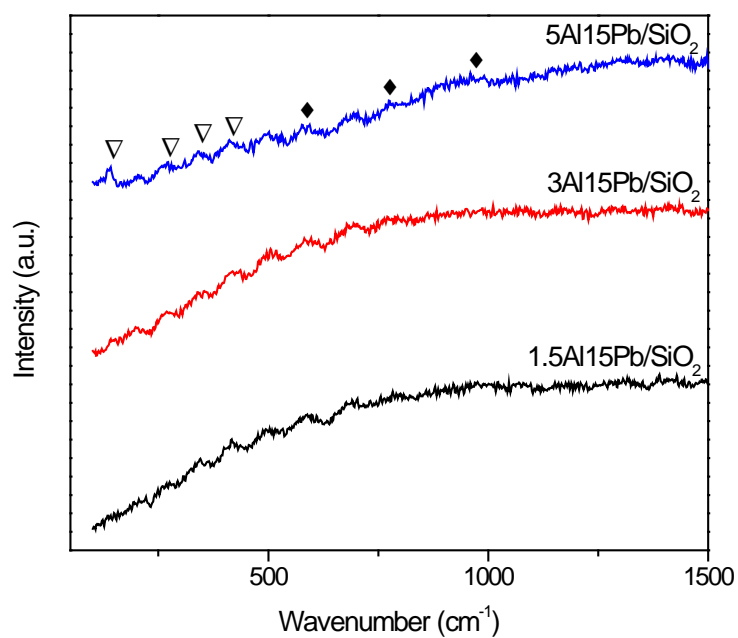


Fig. S1. Raman spectra of xAl15Pb/SiO₂ catalysts with different Al loadings.

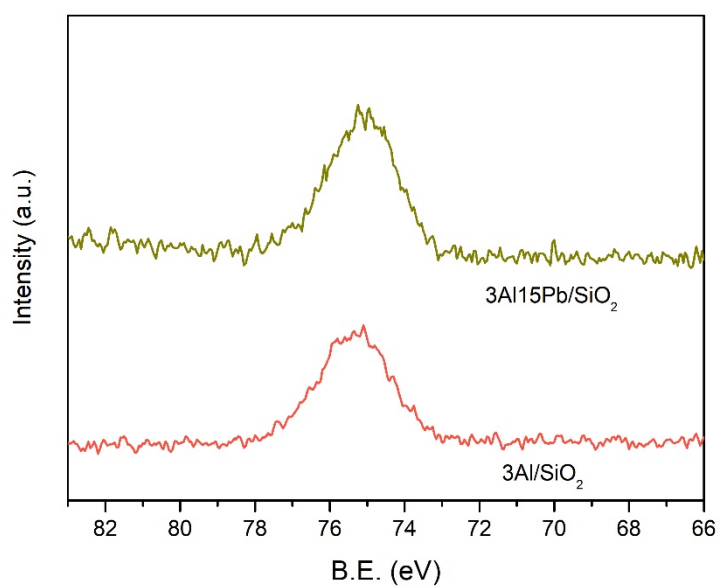


Fig. S2. Al 2p XPS spectra of 3Al/SiO₂ and 3Al15Pb/SiO₂ catalysts.

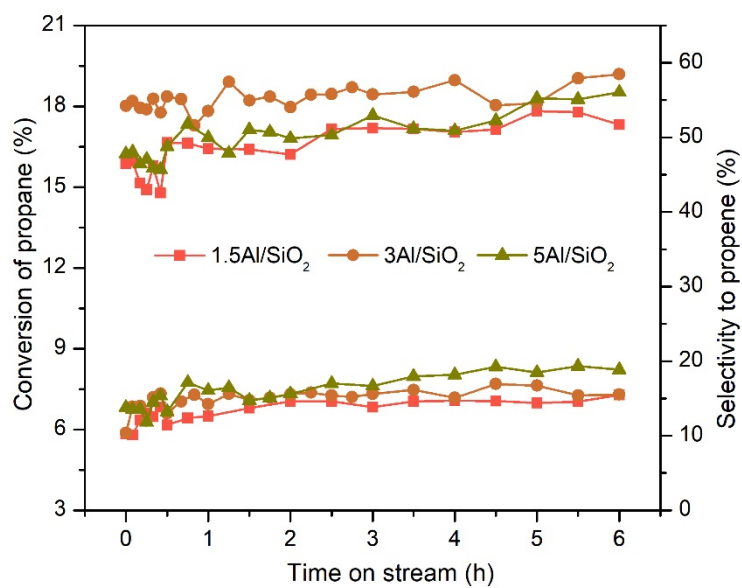


Fig. S3. Dehydrogenation performance of xAl/SiO₂ catalysts for propane dehydrogenation.

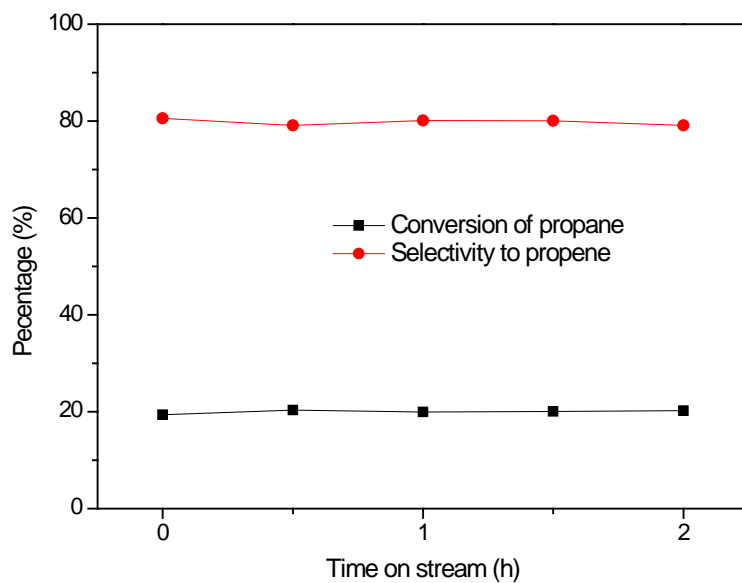


Fig. S4. Dehydrogenation performance of 3Al-15Pb/SiO₂ catalyst prepared by sequential impregnation method.

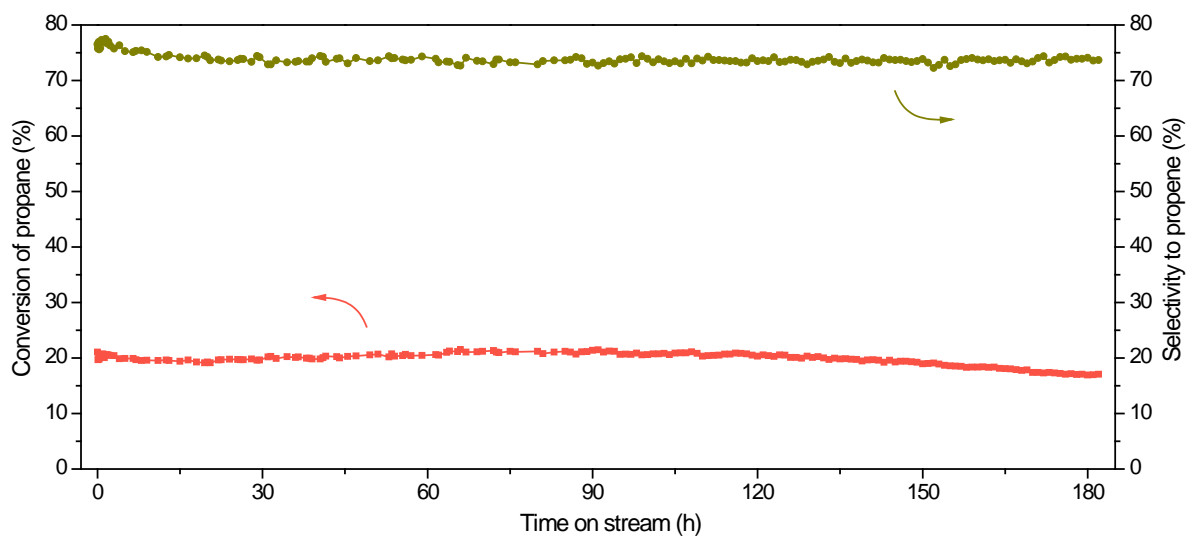


Fig. S5. The dehydrogenation performance of regenerated 3Al15Pb/SiO₂ catalyst.

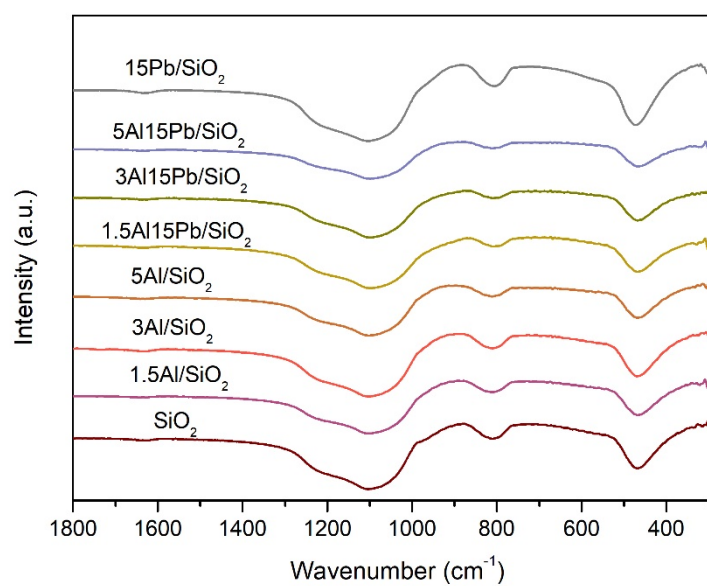


Fig. S6. FTIR spectra of SiO₂, xAl/SiO₂ and xAl15Pb/SiO₂ catalysts with different Al loadings.

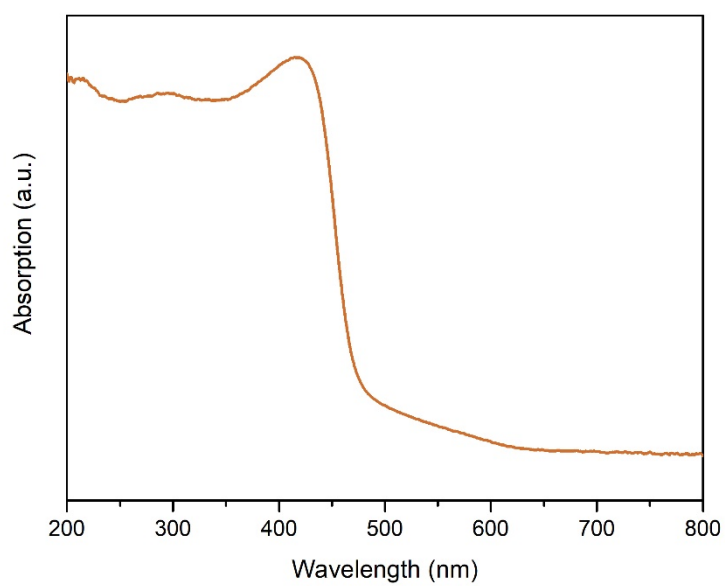


Fig. S7. UV-Vis spectrum of bare PbO.

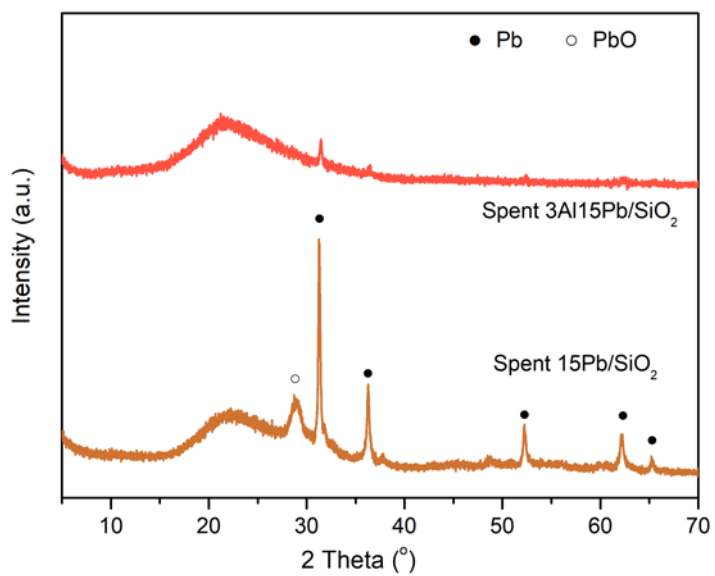


Fig. S8. XRD patterns of spent 15Pb/SiO₂ and 3Al15Pb/SiO₂ catalysts.

Tables:

Table S1. The relative content of the different coordination number of Al cations on 3Al/SiO₂ and

3Al15Pb/SiO₂ samples.

Pretreatment conditions	Relative content (%)		
	Al ^{VI}	Al ^V	Al ^{IV}
3Al/SiO ₂	36.24	20.13	43.62
3Al15Pb/SiO ₂	16.00	8.00	76.00