

Insights into the Reactivation Process of Thermal Aged Bimetallic Pt-Pd/CeO₂-ZrO₂-La₂O₃ Catalysts at Different Treating Temperatures and Their Structure–Activity Evolutions for Three-Way Catalytic Performance

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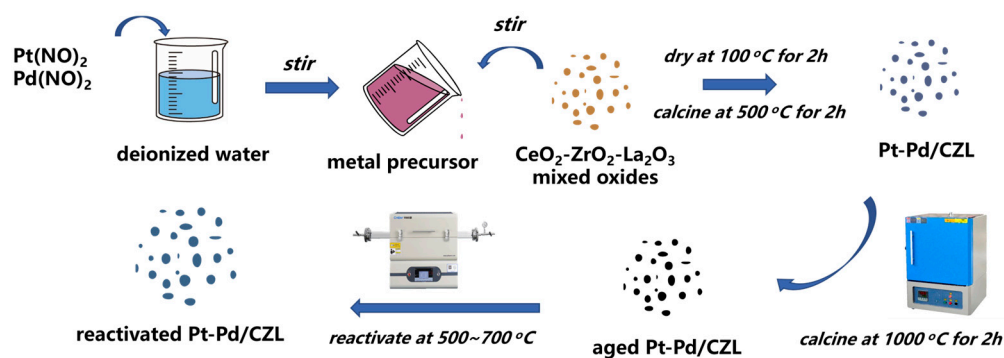


Figure S1. Synthesis scheme of the Pt-Pd/CZL catalysts.

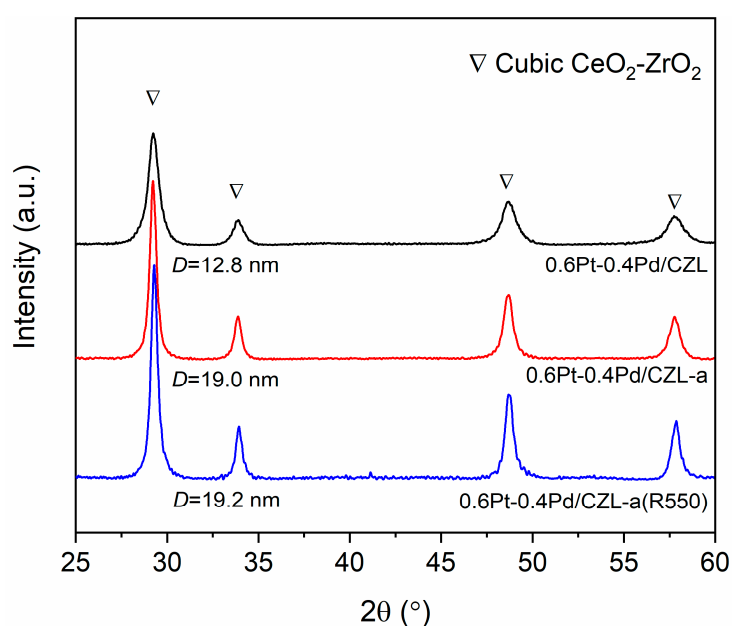


Figure S2. XRD patterns of the 0.6Pt-0.4Pd/CZL, 0.6Pt-0.4Pd/CZL-a, and 0.6Pt-0.4Pd/CZL-a(R550) catalysts.

Table S1. Comparison of the reactivation protocols and results in this work with other reports.

Catalysts	Ageing conditions	Reactivation process	Activity (Fresh/Aged/Reactivated)	Referenecs
Pd/Ce _{0.68} Zr _{0.32} O ₂	900 °C in exhaust 5h	Oxidize at 900 °C 15 min, cooled in O ₂ pulse to 200 °C	CO T _{50%} = 133/315/235 °C NO T _{50%} = 276/355/337 °C HC T _{50%} = 250/325/267 °C	[16]
PtRh-CeZrAl	700 °C in air 3h	Oxychlorination at 600 °C 2h	CO T _{50%} ≈ NA/310/247 °C	[31]
Pd/CeO ₂ -Al ₂ O ₃	850 °C in air	oxy-chlorine at 500 °C 1h, 0.8 vol% Cl ₂ /18 vol% O ₂ /	CO T _{50%} ≈ NA/220/185 °C	[32]
PdRh commercial TWCs	30000 km real-car driving	oxy-chlorine at 500 °C 1h, 0.8 vol% Cl ₂ /18 vol% O ₂ /	CO T _{50%} ≈ NA/330/290 °C NO T _{50%} ≈ NA/285/280 °C HC T _{50%} ≈ NA/350/300 °C CO T _{50%} ≈ 132/182/167 °C	[33]
Pt/CeZrLaPr	950 °C in exhaust 5h	Oxidize at 800 °C 1h,	NO T _{50%} ≈ 177/230/212 °C HC T _{50%} ≈ 182/237/215 °C	[34]
0.6Pt- 0.4Pd/CZL-a (R550)	1000 °C in air 2h	550°C 2h 16% O ₂ +10% H ₂ O+10% CO ₂	CO T _{50%} = 180/225/207 °C NO T _{50%} = 208/289/240 °C HC T _{50%} = 197/241/238 °C	this work