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## ACCEPTED MANUSCRIPT

# Intrinsic Activity of Interfacial Sites for Pt-Fe and Pt-Mo Catalysts in the Hydrogenation of Carbonyl Groups

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### **Graphical Abstract (1.97 x 5.12 inch)**

$$H_{3C} = 0.9 \text{ min}^{-1}$$

$$CH_{3} = 0.9 \text{ min}^{-1}$$

$$TOF_{PtFe_{2},0_{7}} = 93 \text{ min}^{-1}$$

$$TOF_{PtMoO_{2}} = 76 \text{ min}^{-1}$$

$$OH$$

$$TOF_{PtFe_{2},0_{7}} = 480 \text{ min}^{-1}$$

$$TOF_{PtMoO_{2}} = 830 \text{ min}^{-1}$$

$$: Pt$$

$$: Fe \text{ or Mo}$$

#### Highlights (maximum 85 characters, including spaces, per bullet point)

- Selective deposition of Fe and Mo on Pt sites with negligible deposition on support.
- Formation of Pt-Fe<sub>x</sub>O<sub>y</sub> and Pt-MoO<sub>x</sub> sites promoted carbonyl groups hydrogenation.
- Concentration of Pt-Fe<sub>x</sub>O<sub>y</sub> and Pt-MoO<sub>x</sub> interfacial sites was controlled and quantified.
- Intrinsic activity of Pt and Pt-Fe<sub>x</sub>O<sub>y</sub> and Pt-MoO<sub>x</sub> interfacial sites was estimated.
- Interfacial sites stabilize adsorbed intermediates via interaction with C=O moities.

#### **Abstract**

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