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【213】 Thermal stability and CO-induced mobility of single Pt adatoms supported on the α -Fe₂O₃(11 $\bar{0}2$) surface

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Pt-based catalysts are among the most efficient catalysts for the hydrogen evolution, photocatalytic and CO-oxidation reactions. However, the high cost of Pt and its susceptibility to CO poisoning are major drawbacks. Downsizing catalyst to single atoms is an effective way to reach maximum efficiency. Nevertheless, stabilization of single atoms without compromising catalytic activity is a key challenge.

Here, we present a study of the thermal stability and CO-induced mobility of single Pt atoms at the α -Fe₂O₃(11 $\bar{0}2$) surface. Thermally induced and CO-induced sintering of the Pt single atoms are traced using STM and XPS. Also, mobility and rearrangement of adatoms have been determined with varying CO pressure in the background.

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