

Table S1. The conditions of TOF measurement for Pd/TiO₂ and alkali doped Pd/TiO₂ catalysts.

Sample	Inlet HCHO Concentration /ppm	Catalyst weight /mg	GHSV /h ⁻¹	HCHO conversion /%
Pd/TiO ₂	320	60	98000	10.1
Li-Pd/TiO ₂	350	60	98000	13.0
Na-Pd/TiO ₂	350	9	650000	10.3
K-Pd/TiO ₂	890	9	650000	25.0
Cs-Pd/TiO ₂	780	9	650000	14.0

Figure S1. C 1s XPS of samples

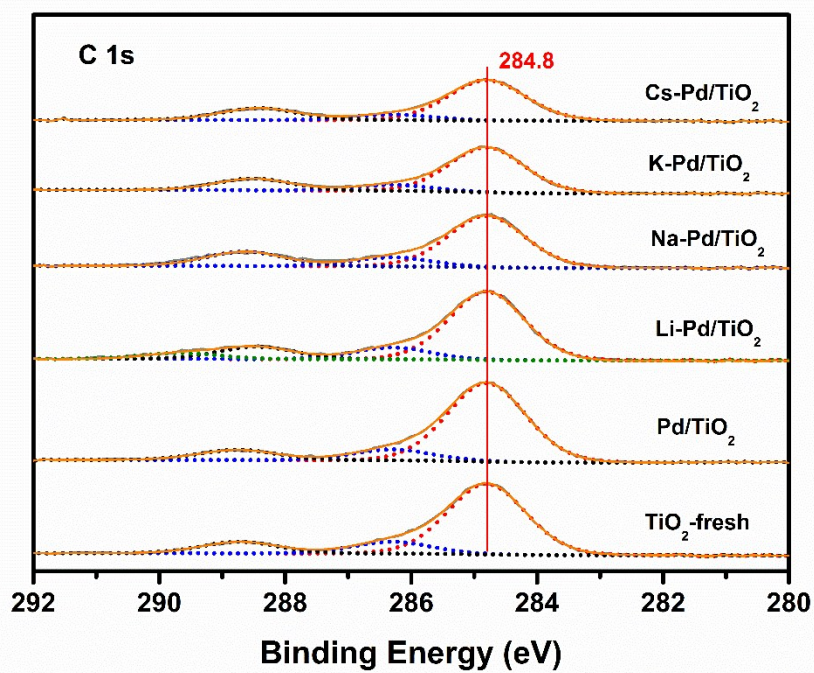


Figure S2. TEM images of a) Pd/TiO₂; b) Li-Pd/TiO₂; c) Na-Pd/TiO₂; d) K-Pd/TiO₂;

e) Cs-Pd/TiO₂ and HR-TEM image of f) Na-Pd/TiO₂

