

**Potential Energy Landscape of CO Adsorbates on NaCl(100) and Implications in  
Isomerization of Vibrationally Excited CO**

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SUPPORTING INFORMATION

Figure S1. Convergence test of DFT parameters. (a) Adsorption potential energies of CO in the  $p(2 \times 2)$  unit cell calculated with several functionals and different numbers of NaCl(100) slab layers, using a  $k$ -point mesh of  $3 \times 3 \times 1$ ; (b) Adsorption potential energies of CO in the  $p(1 \times 1)$  unit cell calculated with the PBE-D3(BJ) functional with different values of  $k$ -point mesh.

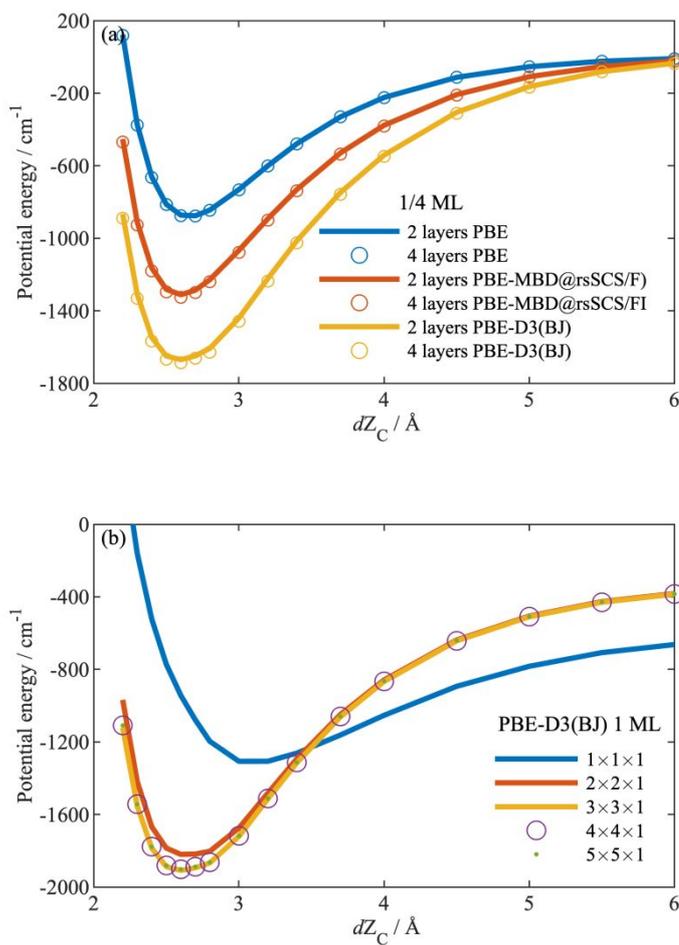


Figure S2. Fitting error distributions of the  $2\times 2$ -MBD,  $2\times 2$ -D3,  $1\times 1$ -MBD and  $1\times 1$ -D3 PESs.

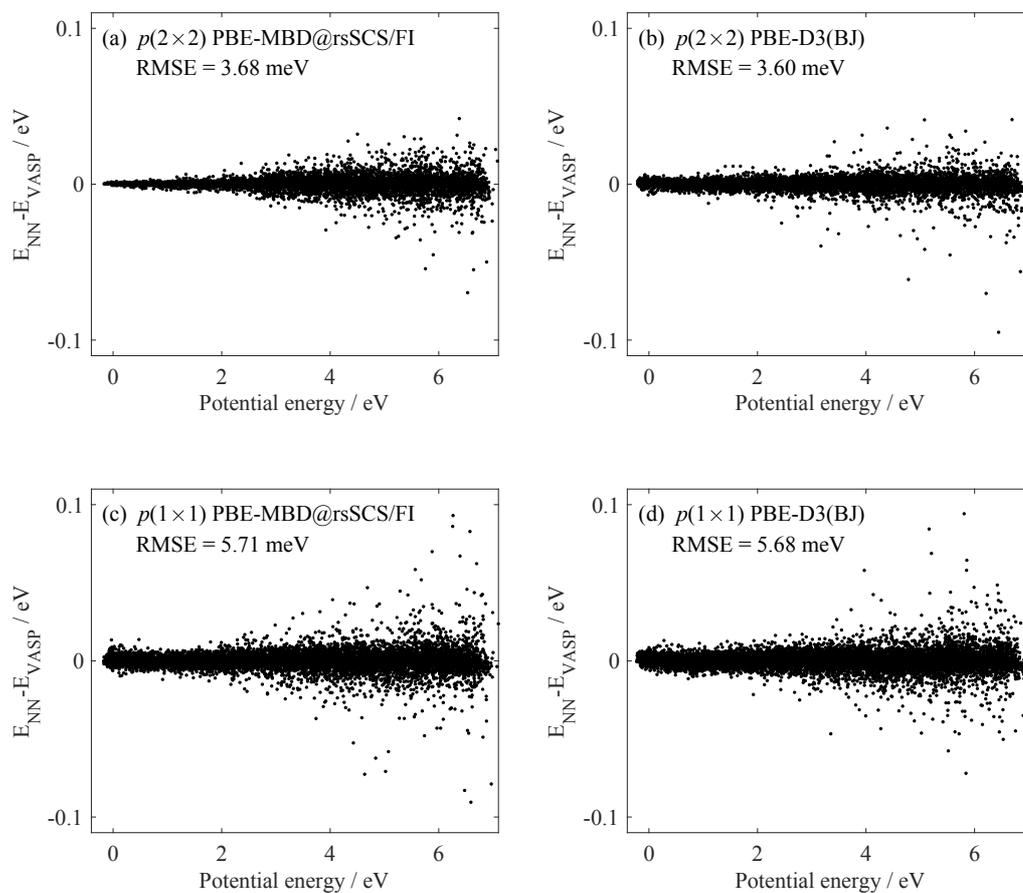


Figure S3. Illustration of configurations “A” to “H” marked in Figures 5 and 7. The  $\text{Na}^+$ ,  $\text{Cl}^-$ , O and C are represented by blue, yellow, red and gray circles, respectively.

