Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supplementary Material

Temperature-Programmed Desorption studies of NH_3 and H_2O on RuO_2(110) surface: Effects of Adsorbate Diffusion

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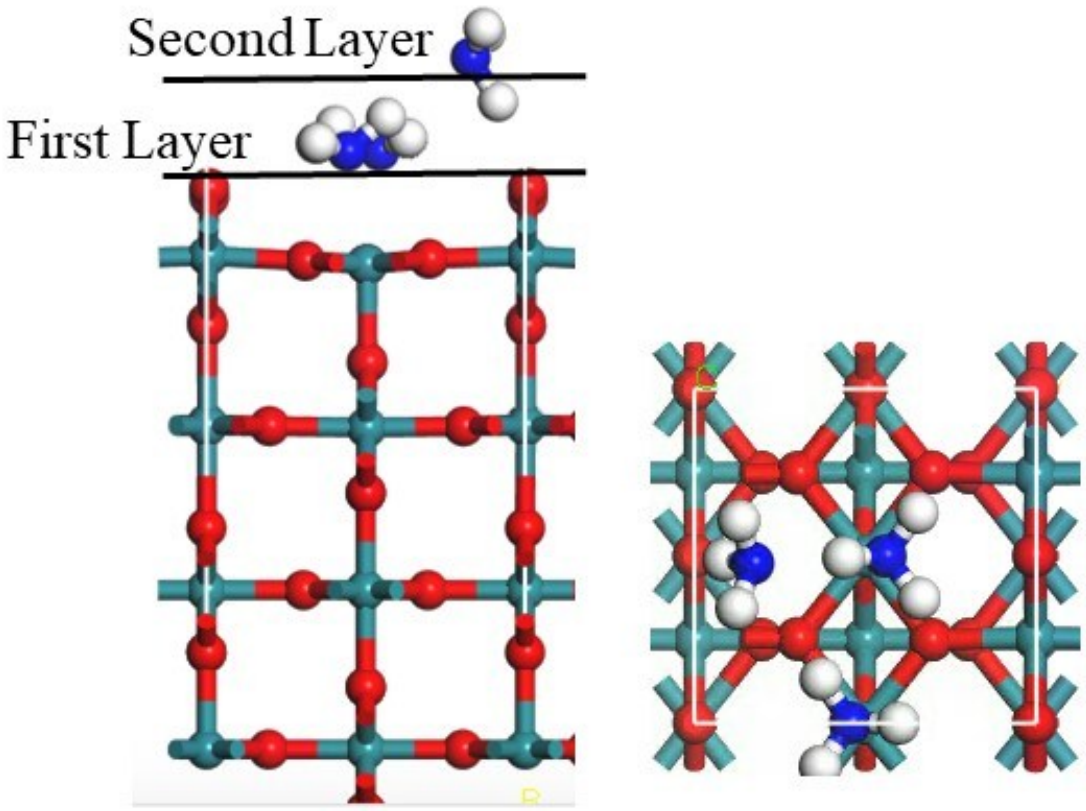

Figure S1. The illustration of side and top views of adsorption NH_3 on first and second layer of RuO_2(110) surface.

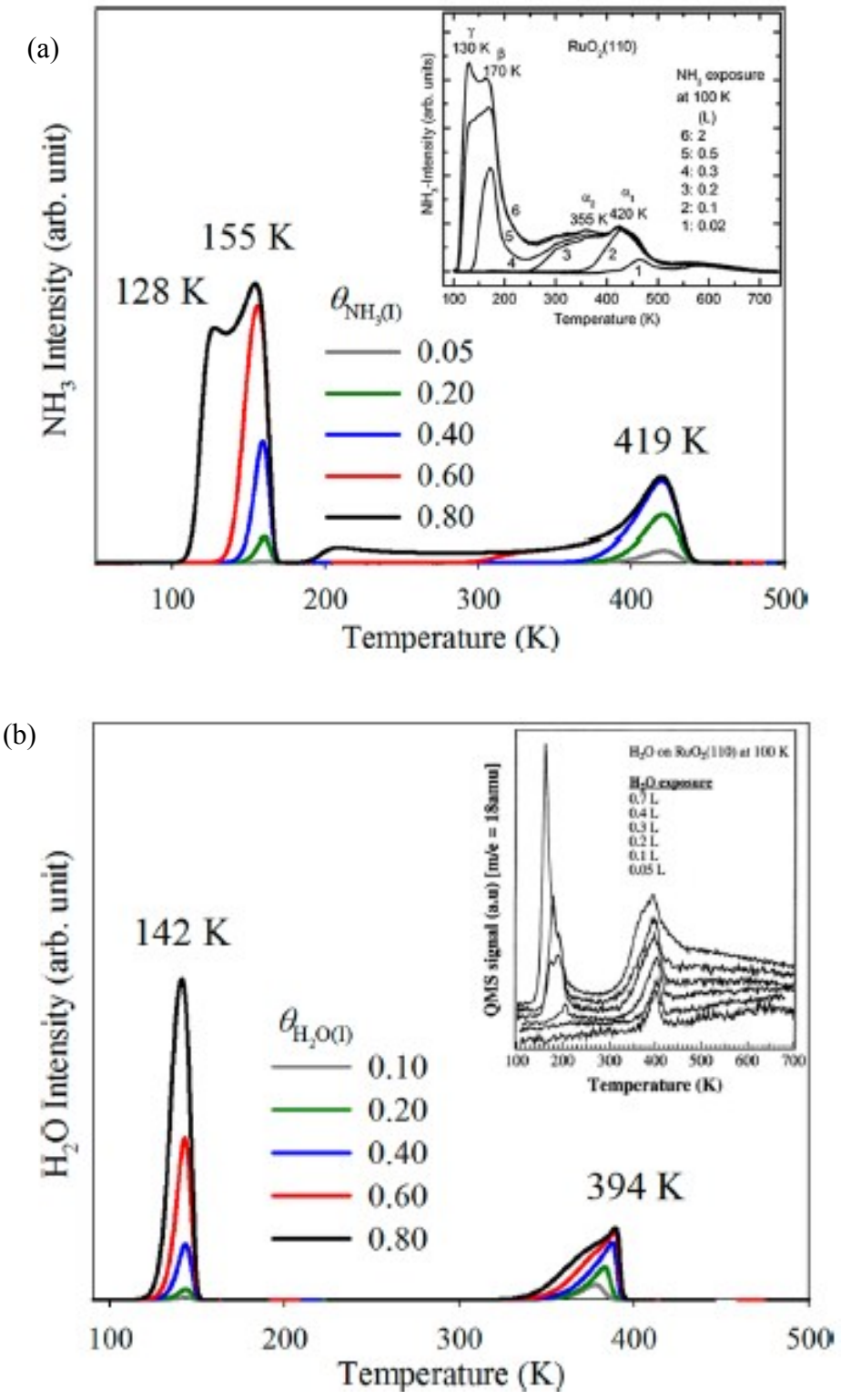

Figure S2. The simulated TPD spectra for (a) NH_3 and (b) H_2O on RuO_2 (110) surface by our previous study[1]. (Insets are the corresponding experimental TPD spectra taken from Refs.[2, 3])

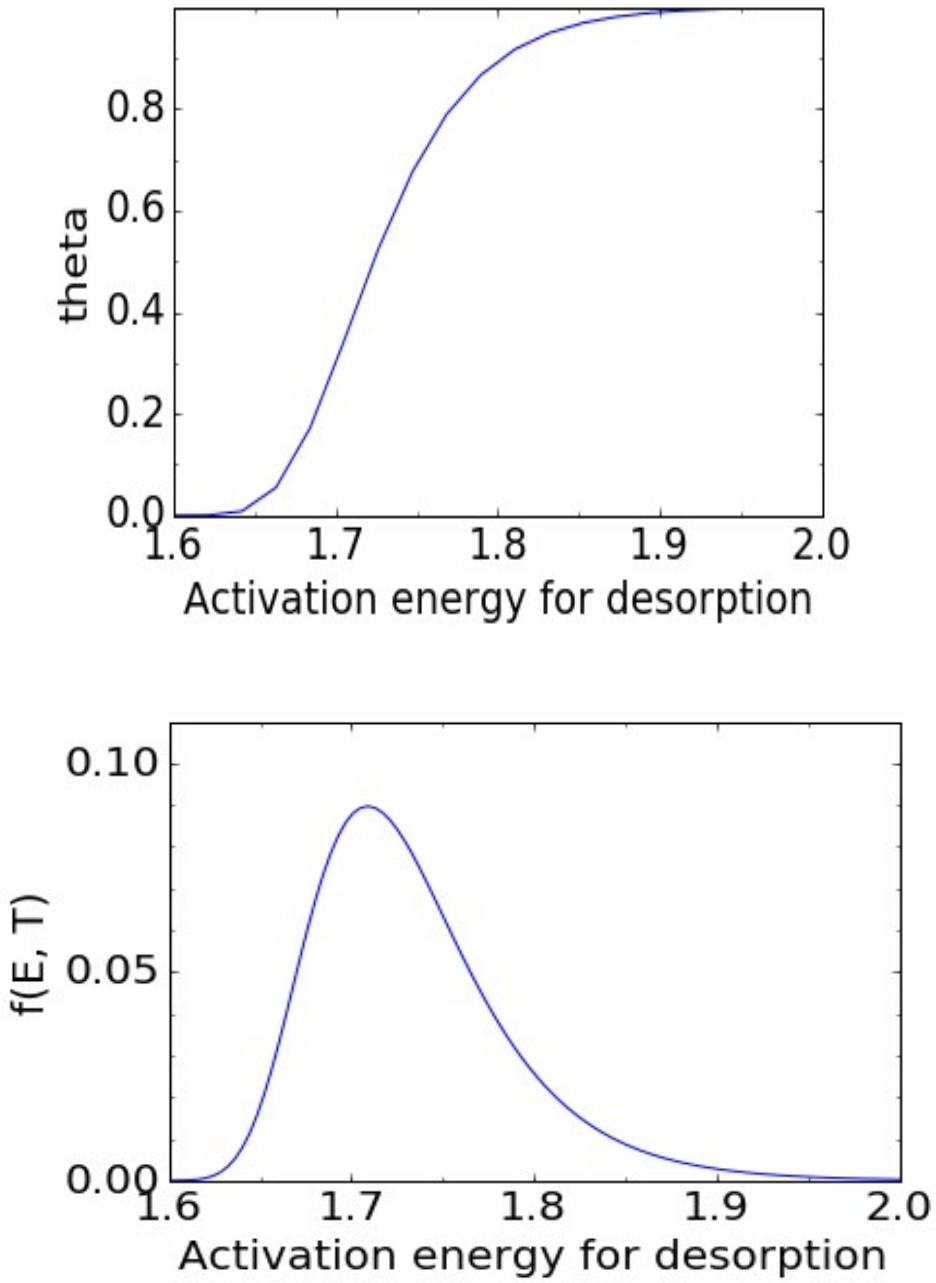

Figure S3. The obtained $\theta'(E,T)$ and $f(E,T)$versus activation energy of 50% ML ammonia on RuO_2(110) surface at temperature, 500K

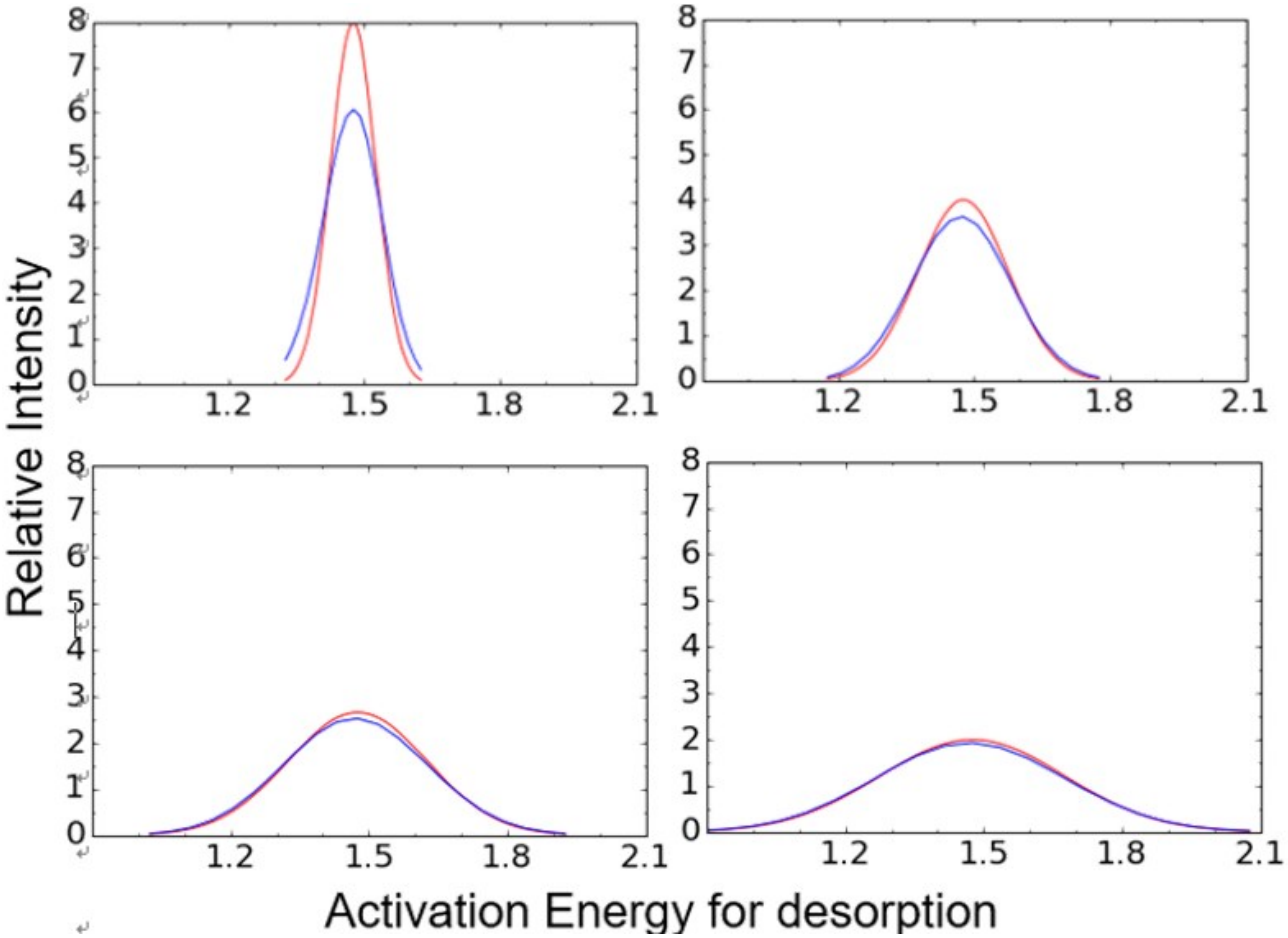

Figure S4. The guessed and calculated energy distribution with respect to different standard deviation values (σ = 0.05, 0.10, 0.15 and 0.20). Red line is the energy distribution we assumed and blue line is the calculated energy distribution from eqn. (9).

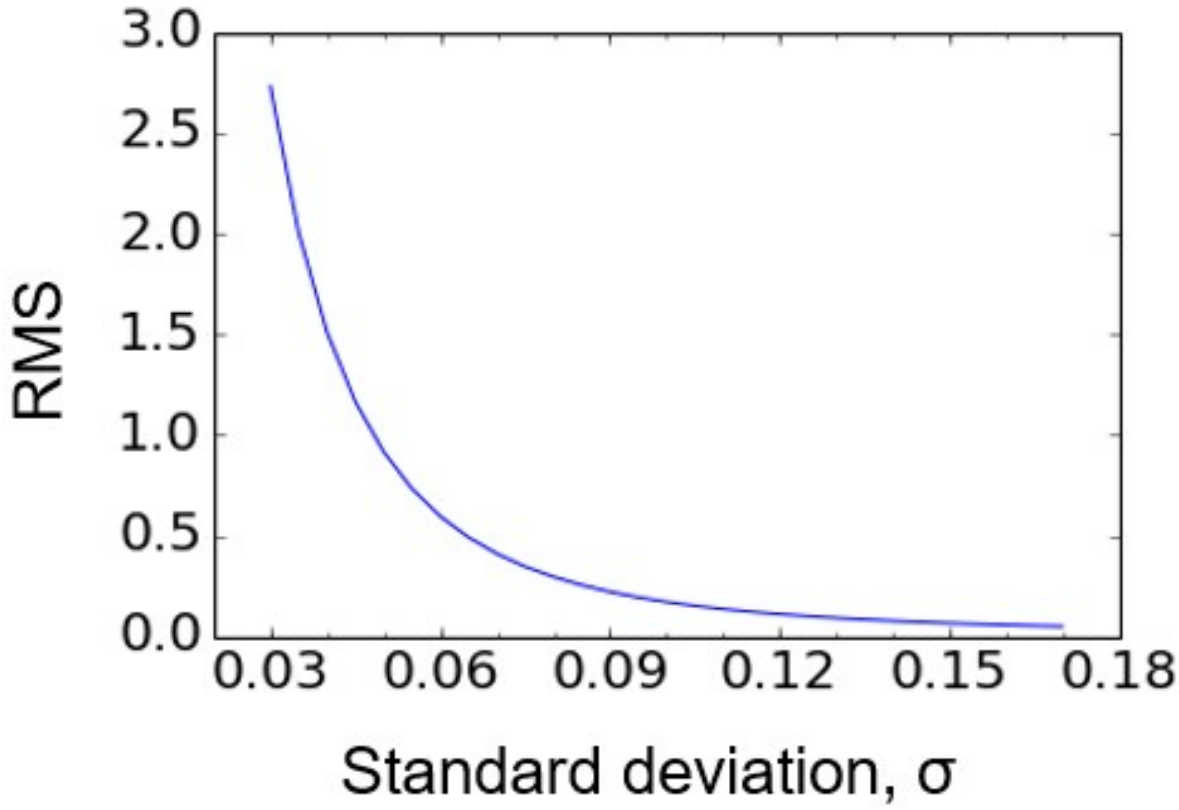

Figure S5. The standard deviation vs. RMS plot for determining the optimum energy distribution

References

1. C. C. Wang, J. Y. Wu and J. C. Jiang, *J. Phys. Chem. C*, 2013, 117, 6136-6142.
2. Y. Wang, K. Jacobi, W. D. Schone and G. Ertl, *J. Phys. Chem. B*, 2005, 109, 7883-7893.
3. A. Lobo and H. Conrad, *Surf. Sci.*, 2003, 523, 279-286.