

Supporting Information

Insight into Structure and Morphology of Ru_n Clusters on Co(111) and Co(311) Surfaces

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Content

Figure S1. Various structures and adsorption energies for Ru_n ($n = 1-2$) on the Co(111) surface (adsorption energy in eV).

Figure S2. Various structures and adsorption energies for Ru_3 on the Co(111) surface (adsorption energy in eV).

Figure S3. Various structures and adsorption energies for Ru_4 on the Co(111) surface (adsorption energy in eV).

Figure S4. Various structures and adsorption energies for Ru_5 on the Co(111) surface (adsorption energy in eV).

Figure S5. Various structures and adsorption energies for Ru_6 on the Co(111) surface (adsorption energy in eV).

Figure S6. Various structures and adsorption energies for Ru_7 on the Co(111) surface (adsorption energy in eV).

Figure S7. Various structures and adsorption energies for Ru_8 on the Co(111) surface (adsorption energy in eV).

Figure S8. Various structures and adsorption energies for Ru_9 on the Co(111) surface (adsorption energy in eV).

Figure S9. Various structures and adsorption energies for Ru_{10} on the Co(111) surface (adsorption energy in eV).

Figure S10. Various structures and adsorption energies for Ru_{11} on the Co(111) surface (adsorption energy in eV).

Figure S11. Various structures and adsorption energies for Ru_n ($n = 1-3$) on the Co(311) surface (adsorption energy in eV).

Figure S12. Various structures and adsorption energies for Ru_n ($n = 4-5$) on the Co(311) surface (adsorption energy in eV).

Figure S13. Various structures and adsorption energies for Ru_n ($n = 6-8$) on the Co(311) surface (adsorption energy in eV).

Figure S14. Various structures and adsorption energies for Ru_n ($n = 11$) on the Co(311) surface (adsorption energy in eV).

Figure S15. The average adsorption energy and growth energy variation with respect to the Ru cluster size on Co(111) and Co(311) surfaces.

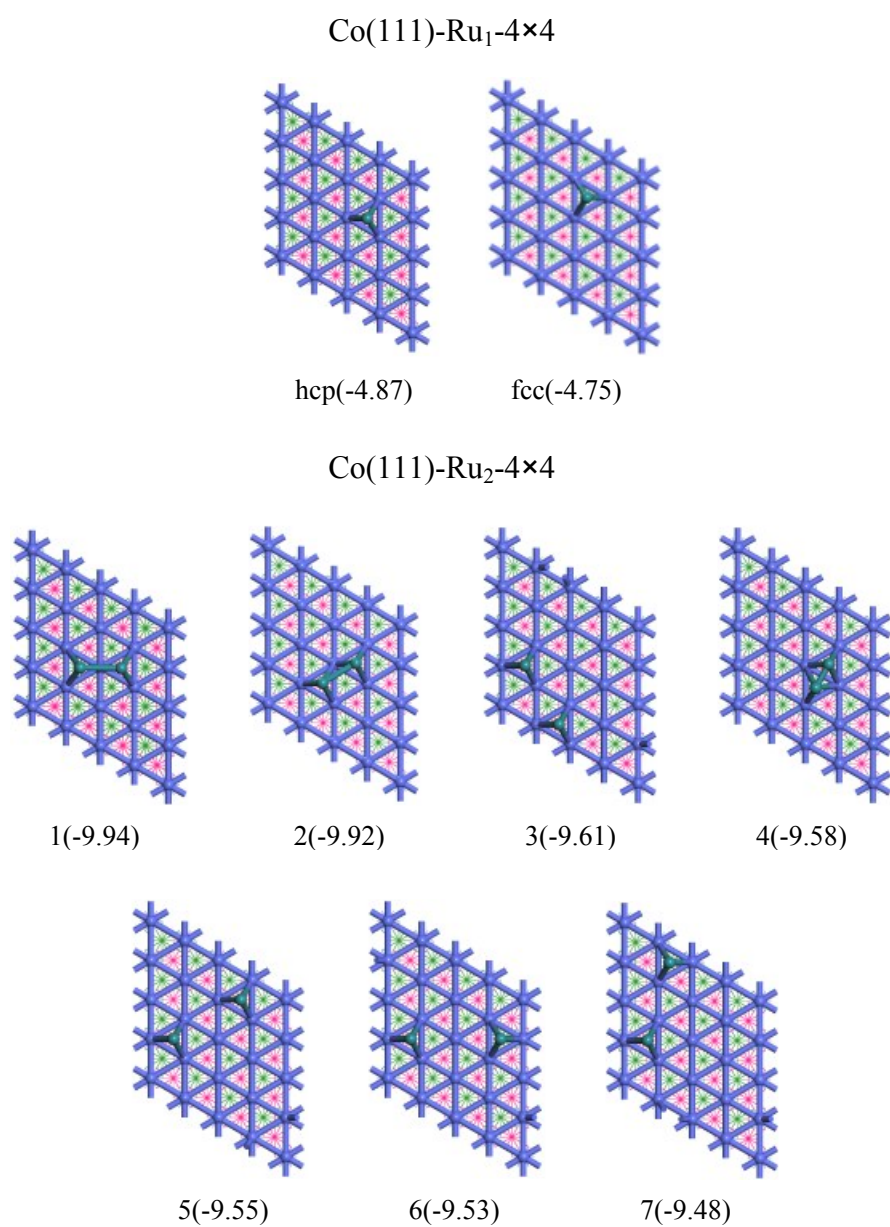


Figure S1. Various structures and adsorption energies for Ru_n (n = 1–2) on the Co(111) surface (adsorption energy in eV).

Co(111)-Ru₃-4×4

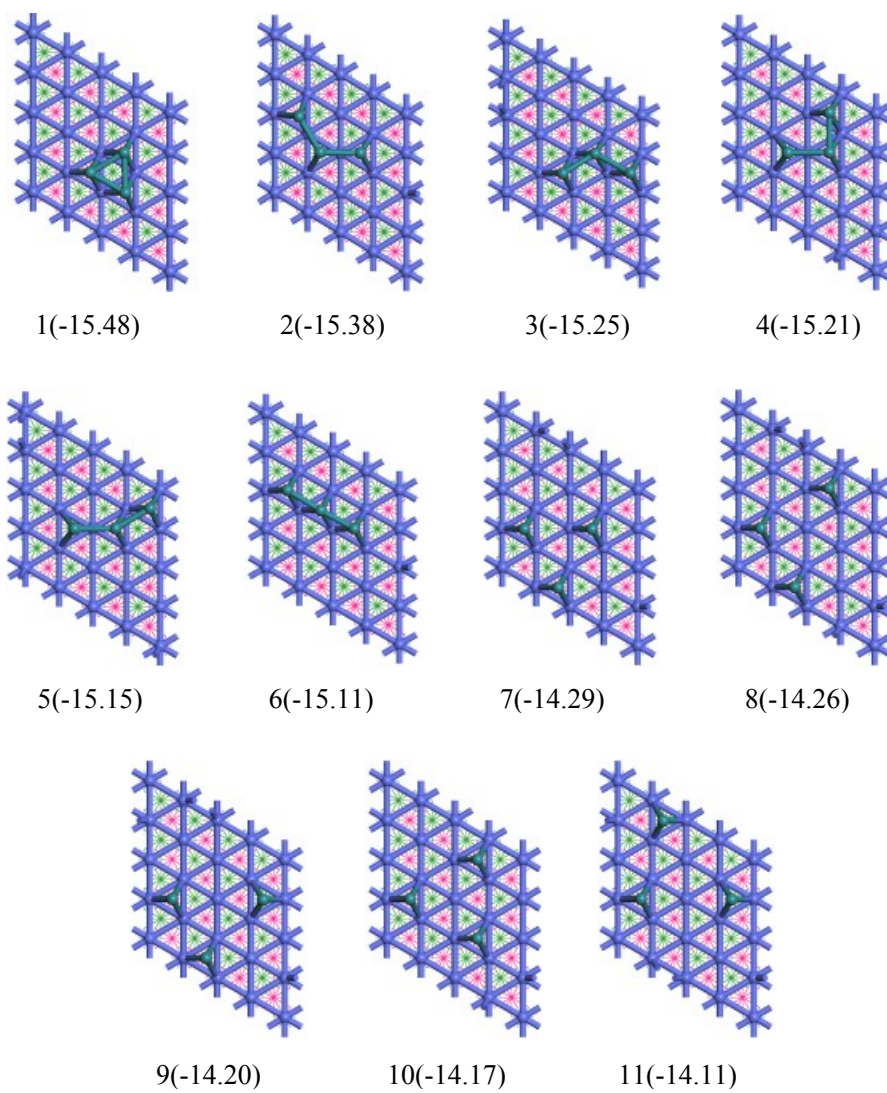


Figure S2. Various structures and adsorption energies for Ru₃ on the Co(111) surface (adsorption energy in eV).

Co(111)-Ru₄-4×4

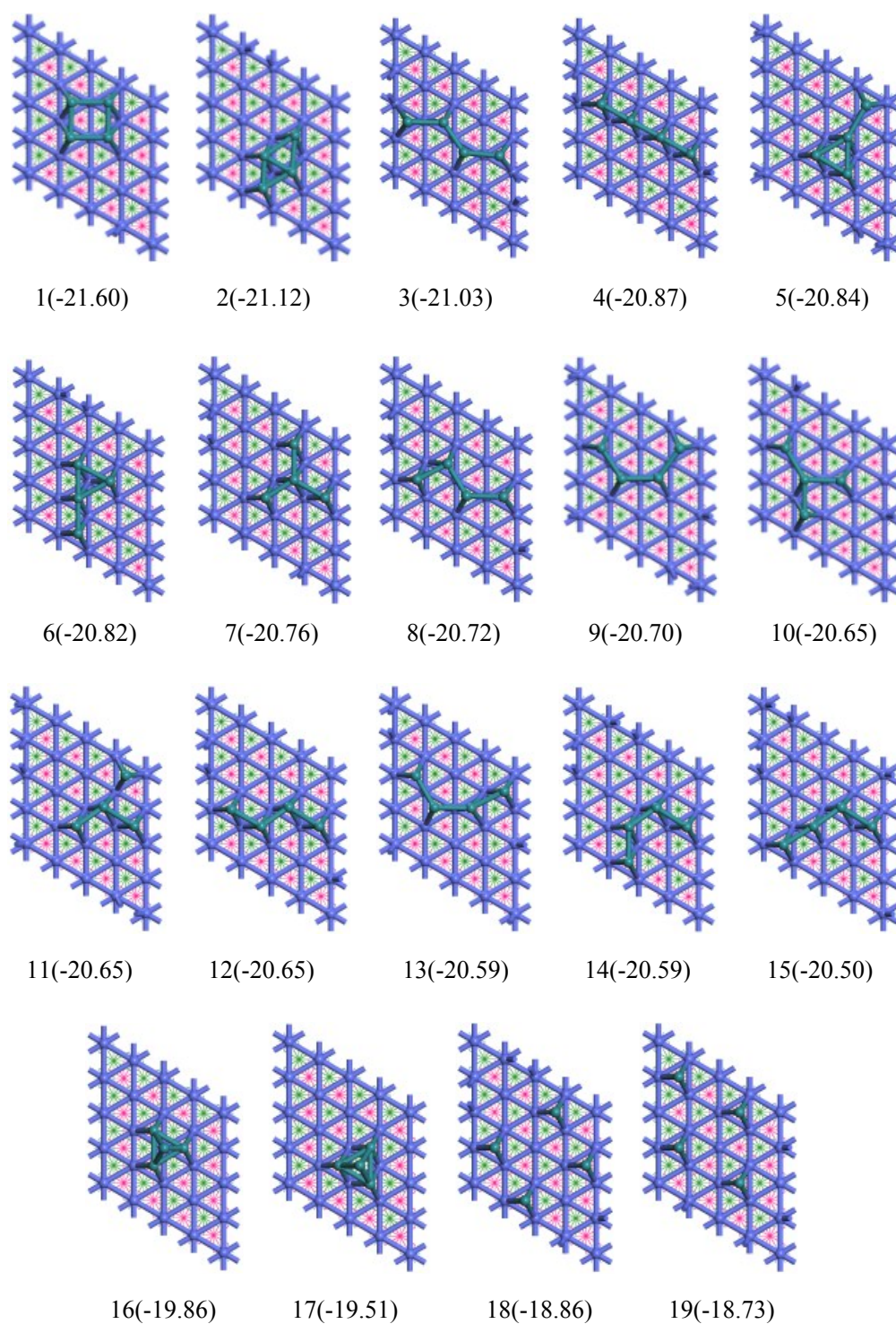


Figure S3. Various structures and adsorption energies for Ru₄ on the Co(111) surface (adsorption energy in eV).

Co(111)-Ru₅-4×4

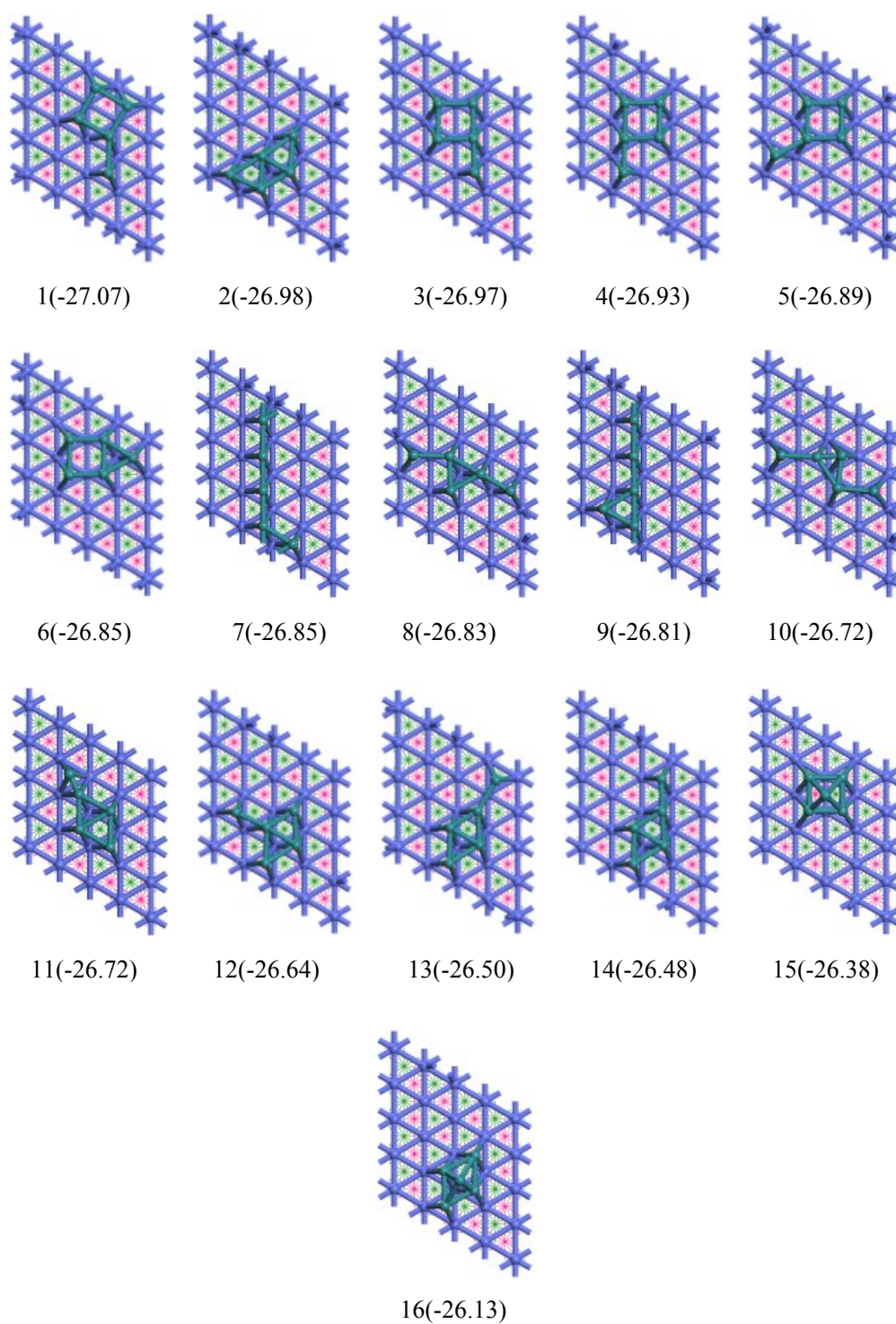


Figure S4. Various structures and adsorption energies for Ru₅ on the Co(111) surface (adsorption energy in eV).

Co(111)-Ru₆-4×4

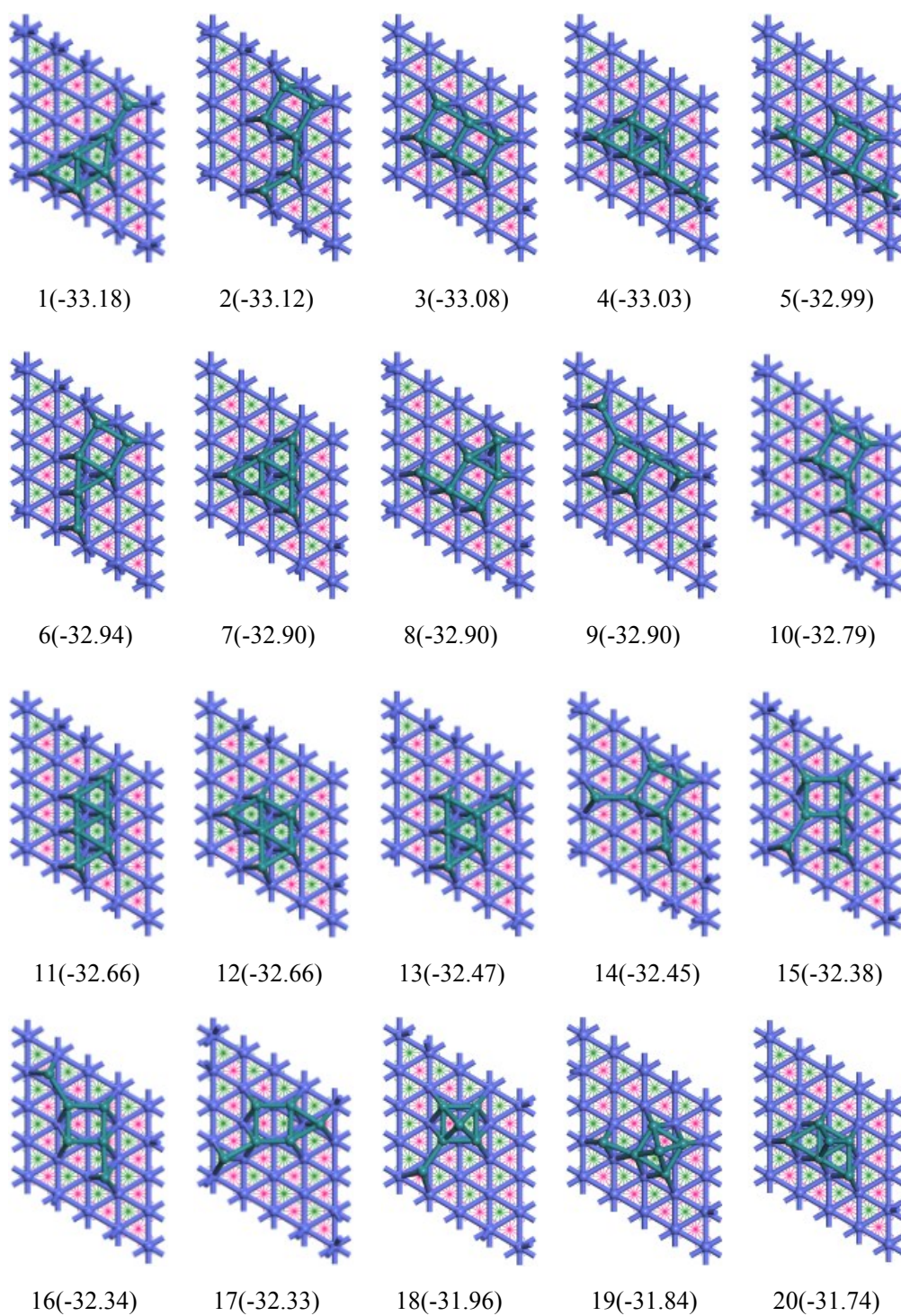


Figure S5. Various structures and adsorption energies for Ru₆ on the Co(111) surface (adsorption energy in eV).

Co(111)-Ru₇-4×4

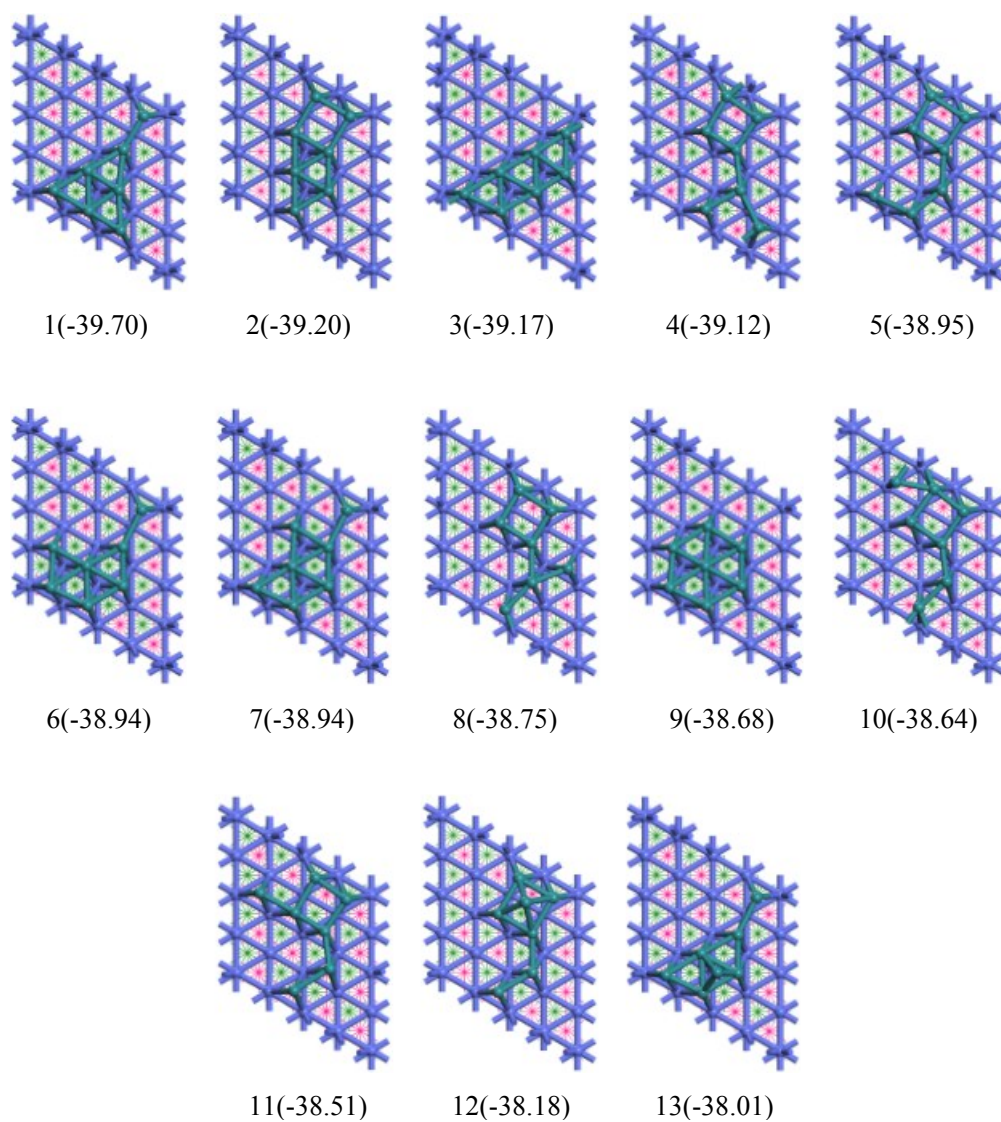


Figure S6. Various structures and adsorption energies for Ru₇ on the Co(111) surface (adsorption energy in eV).

Co(111)-Ru₈-4×4

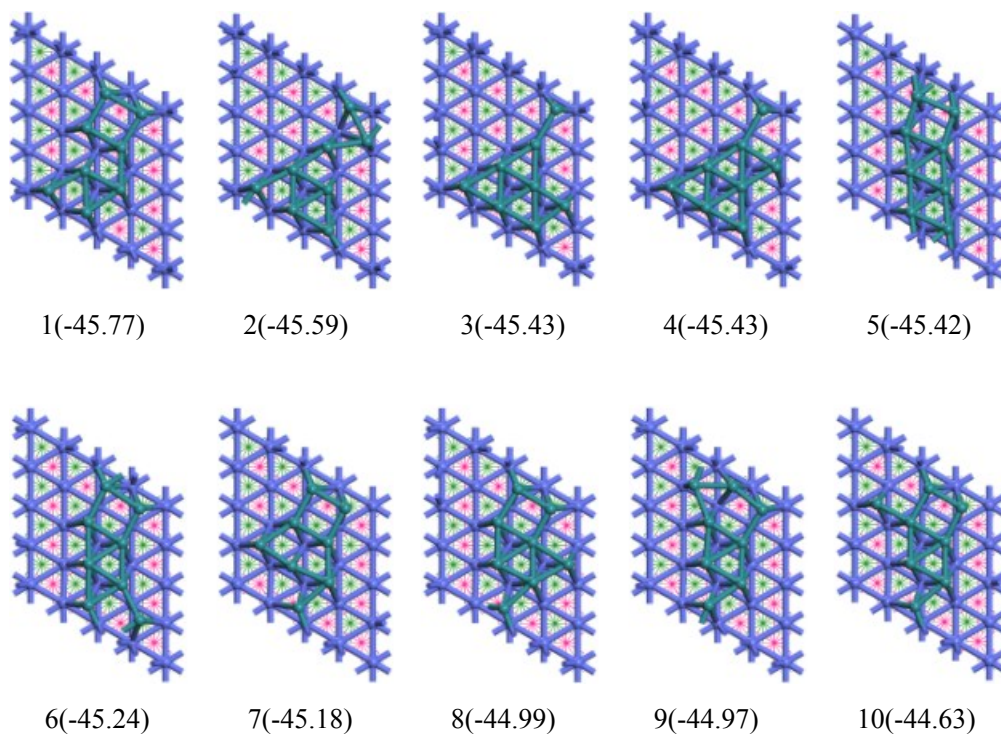
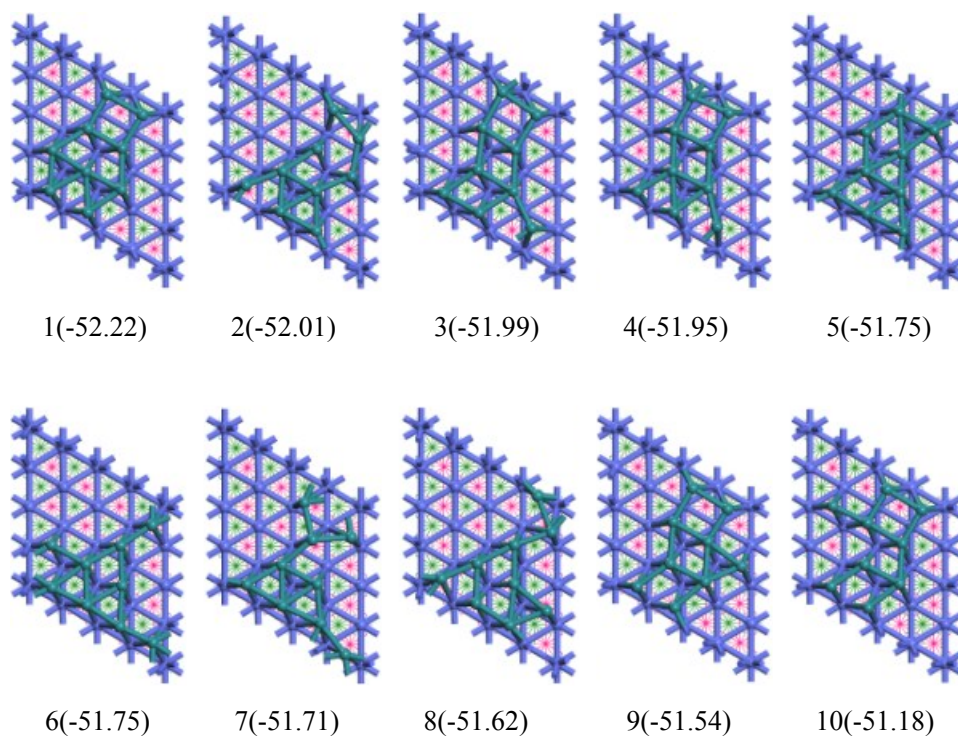


Figure S7. Various structures and adsorption energies for Ru₈ on the Co(111) surface (adsorption energy in eV).

Co(111)-Ru₉-4×4



Co(111)-Ru₉-5×5

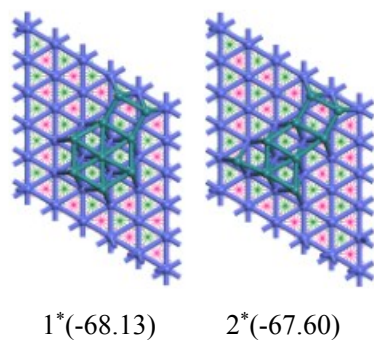


Figure S8. Various structures and adsorption energies for Ru₉ on the Co(111) surface (adsorption energy in eV).

Co(111)-Ru₁₀-5×5

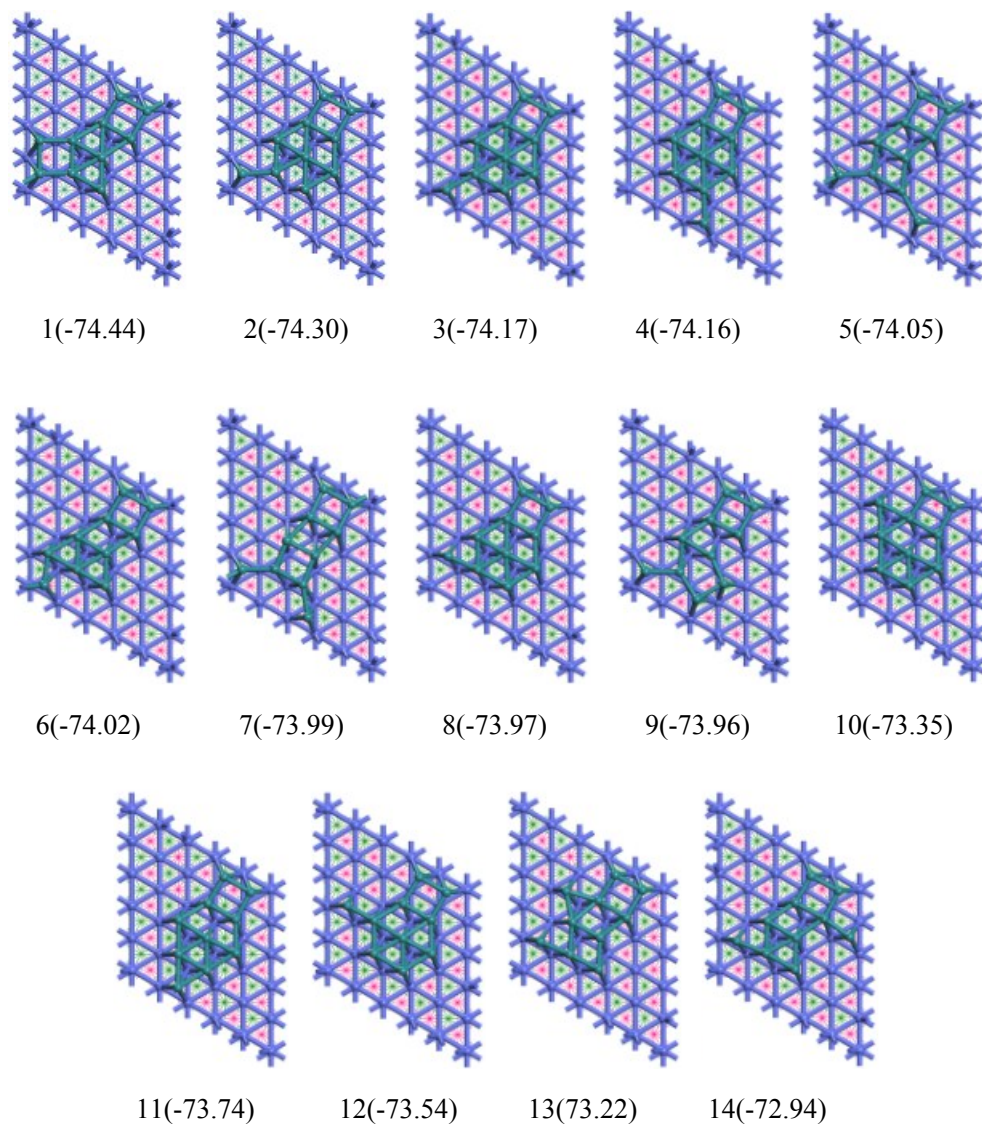


Figure S9. Various structures and adsorption energies for Ru₁₀ on the Co(111) surface (adsorption energy in eV).

Co(111)-Ru₁₁-5×5

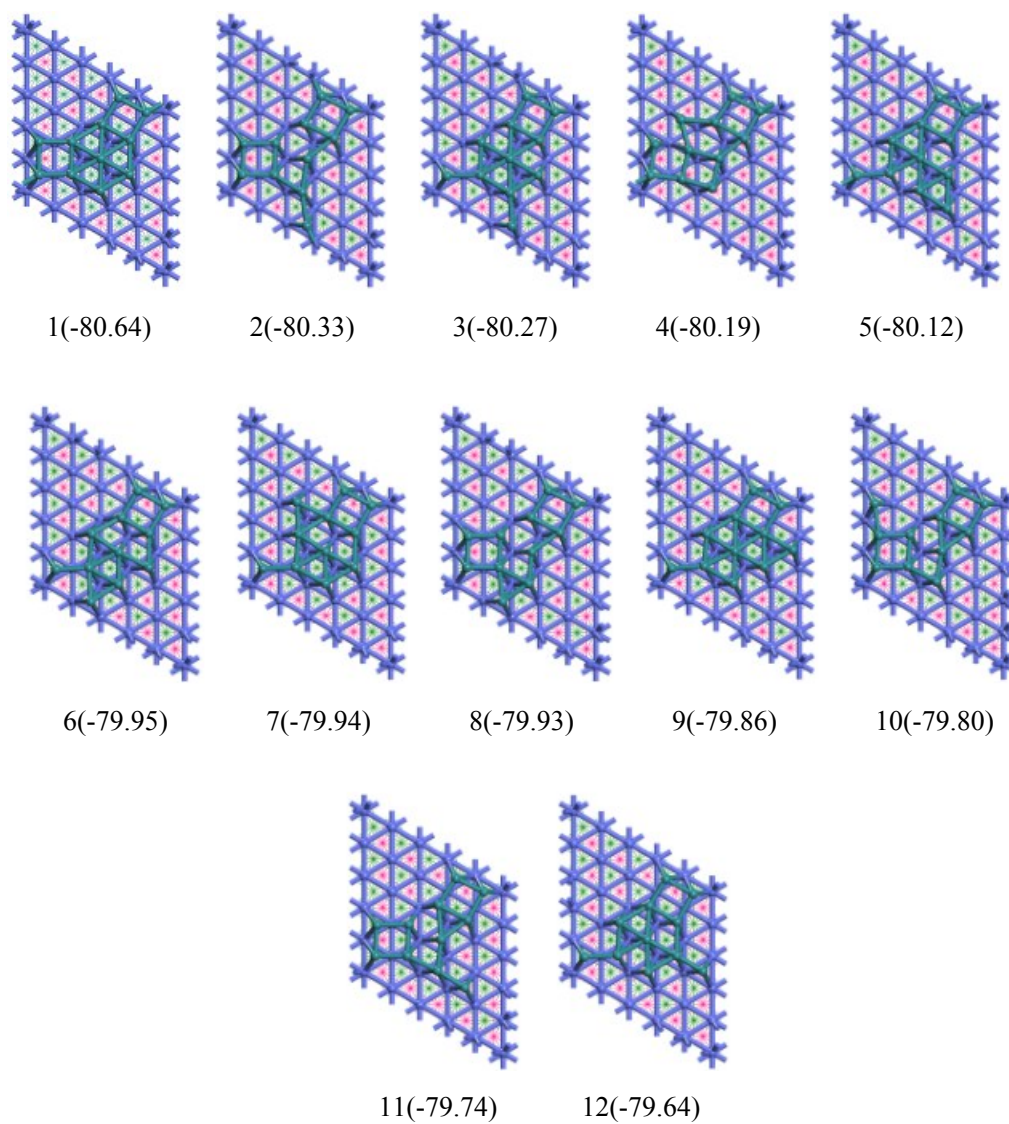


Figure S10. Various structures and adsorption energies for Ru₁₁ on the Co(111) surface (adsorption energy in eV).

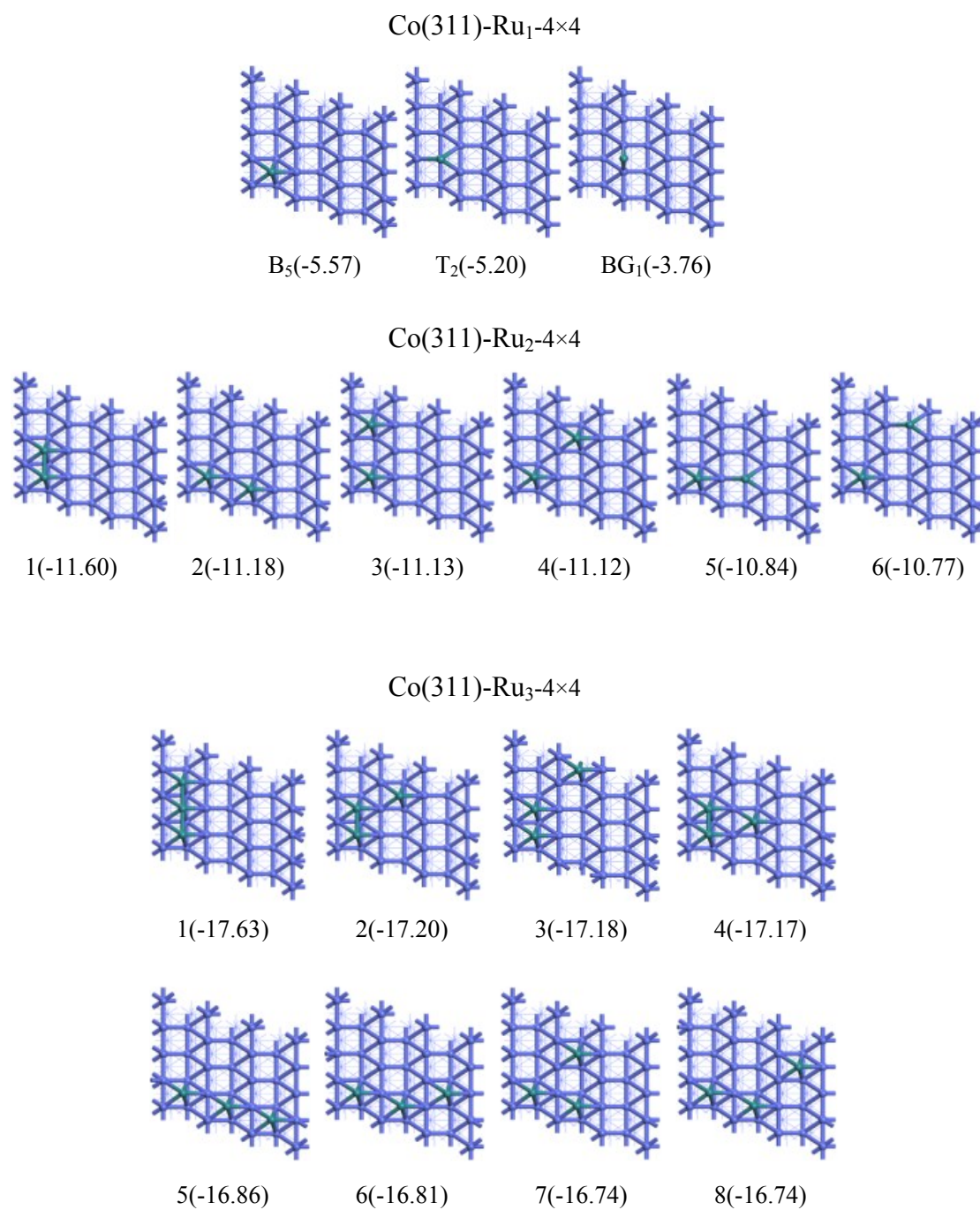
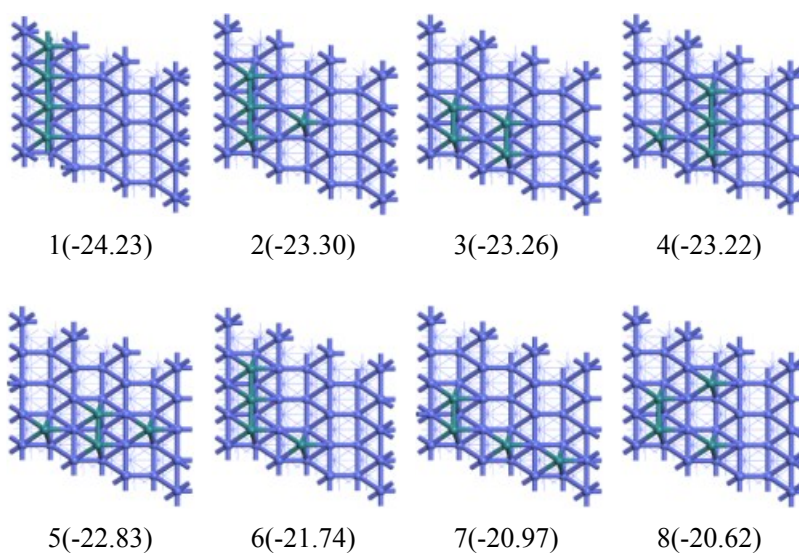


Figure S11. Various structures and adsorption energies for Ru_n (n = 1–3) on the Co(311) surface (adsorption energy in eV).

Co(311)-Ru₄-4×4



Co(311)-Ru₅-4×4

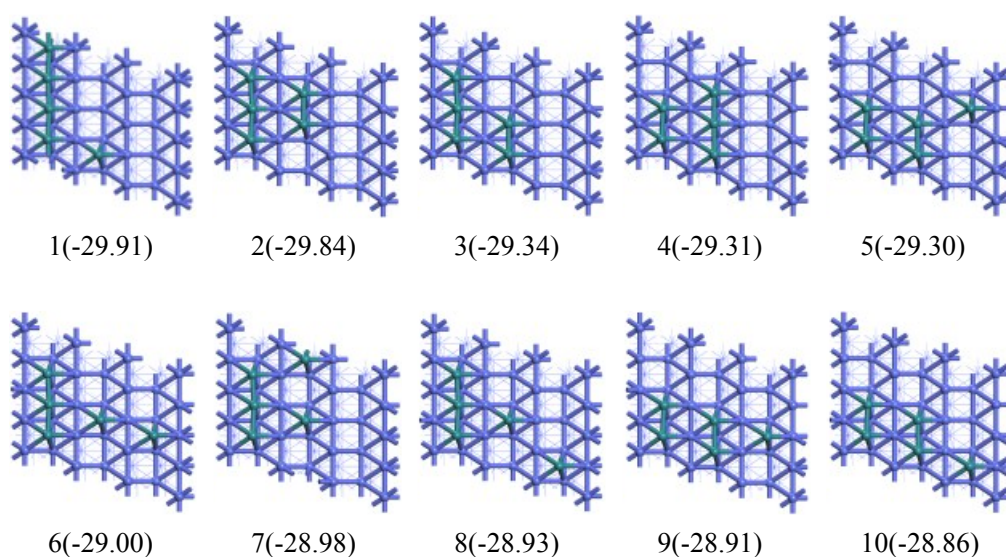
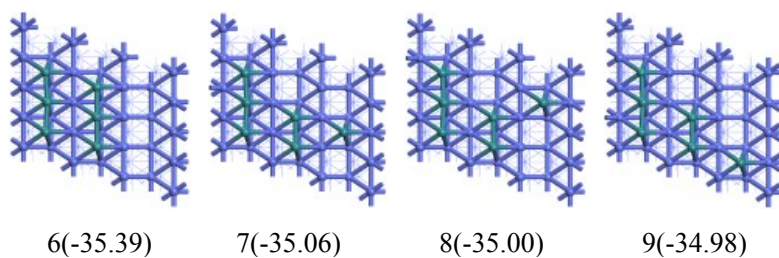
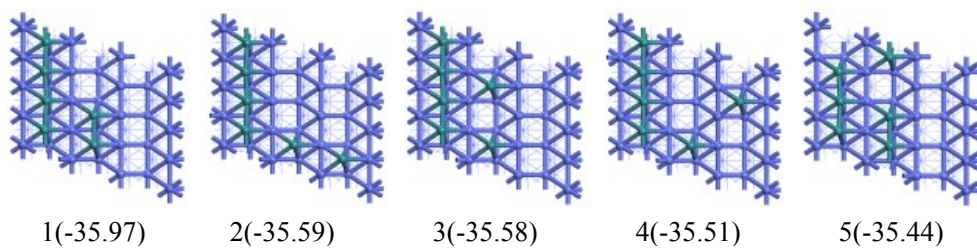
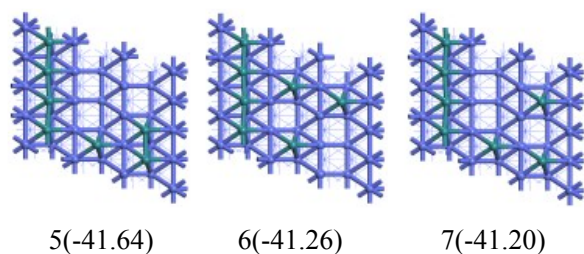
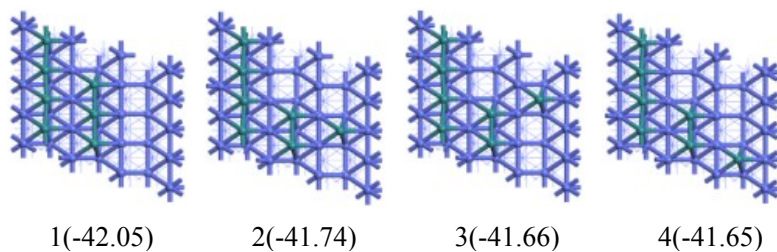


Figure S12. Various structures and adsorption energies for Ru_n (n = 4–5) on the Co(311) surface (adsorption energy in eV).

Co(311)-Ru₆-4×4



Co(311)-Ru₇-4×4



Co(311)-Ru₈-4×4

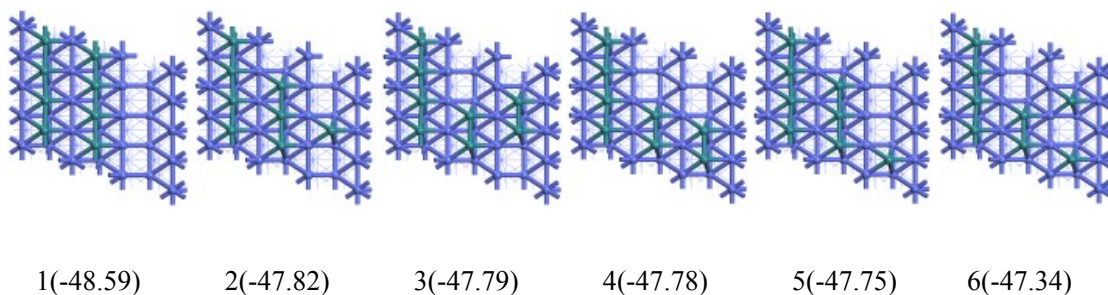


Figure S13. Various structures and adsorption energies for Ru_n (n = 6–8) on the Co(311) surface (adsorption energy in eV).

Co(311)-Ru₁₁-4×4

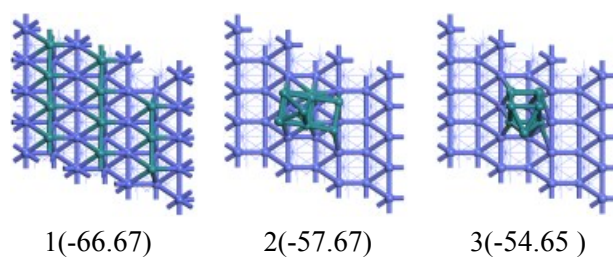


Figure S14. Various structures and adsorption energies for Ru₁₁ on the Co(311) surface (adsorption energy in eV).

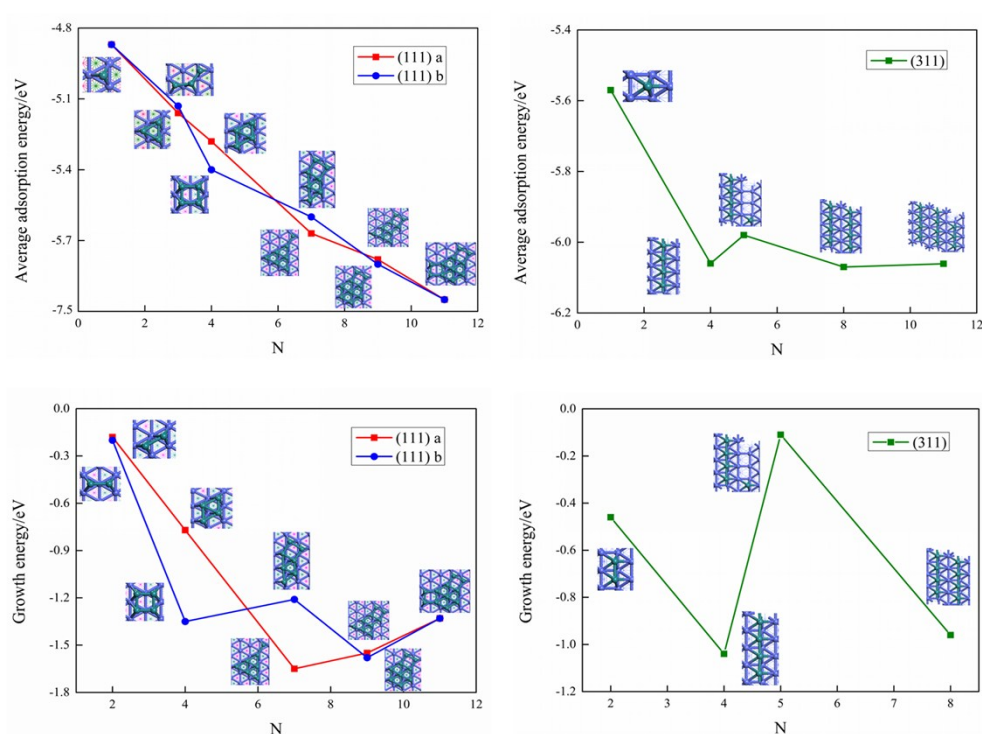


Figure S15. The average adsorption energy and growth energy variation with respect to the Ru cluster size on Co(111) and Co(311) surfaces.