

Figure S1. Model of optimized intermediates of carbon dioxide reduction to ethylene on Cd-Cu(100). Orange, yellow, gray, red and white balls represent Cu, Cd, C, O, H atoms, respectively.

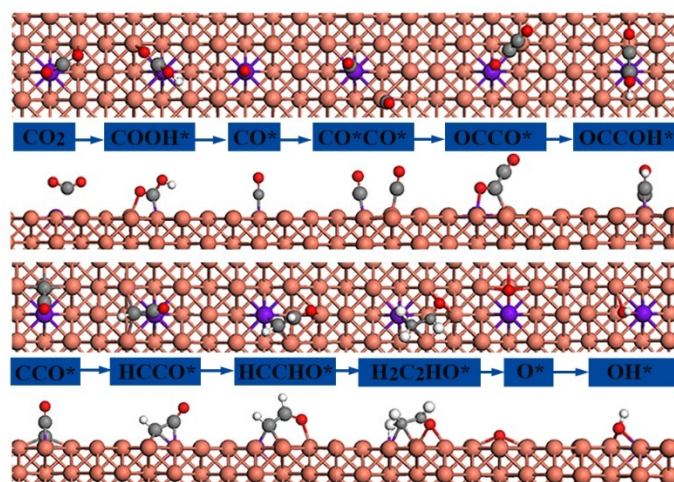


Figure S2. Model of optimized intermediates of carbon dioxide reduction to ethylene on Co-Cu(100). Orange, purple, gray, red and white balls represent Cu, Co, C, O, H atoms, respectively.

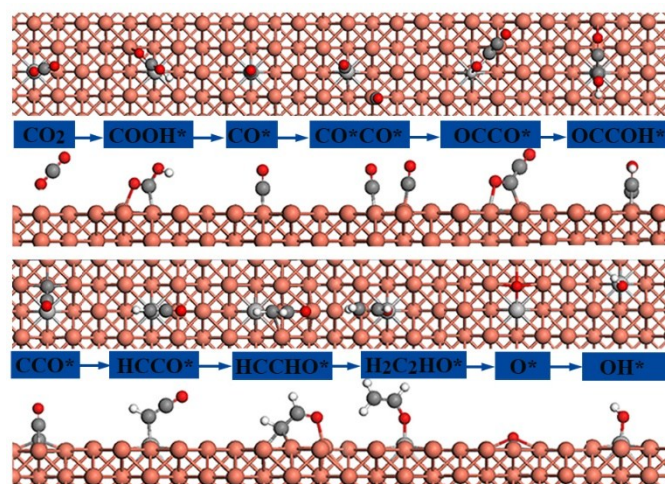


Figure S3. Model of optimized intermediates of carbon dioxide reduction to ethylene on Fe-Cu(100). Orange, silver, gray, red and white balls represent Cu, Fe, C, O, H atoms, respectively.

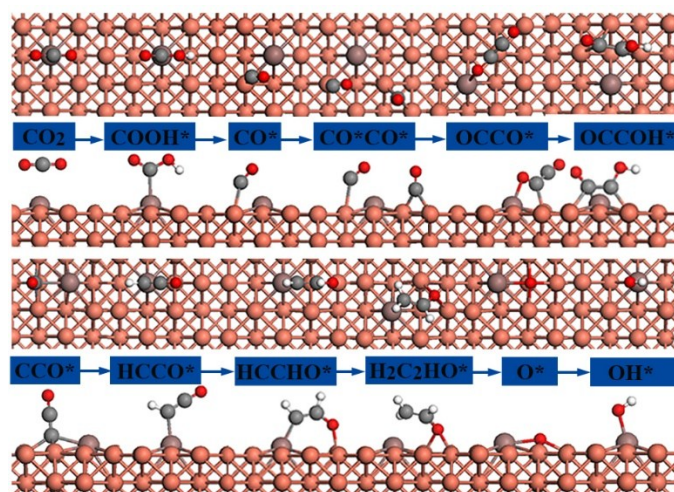


Figure S4. Model of optimized intermediates of carbon dioxide reduction to ethylene on In-Cu(100). Orange, brown, gray, red and white balls represent Cu, In, C, O, H atoms, respectively.

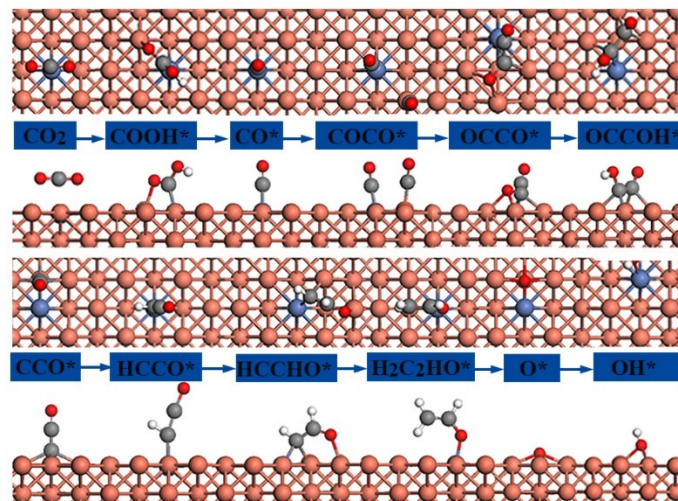


Figure S5. Model of optimized intermediates of carbon dioxide reduction to ethylene on Ni-Cu(100). Orange, blue, gray, red and white balls represent Cu, Ni, C, O, H atoms, respectively.

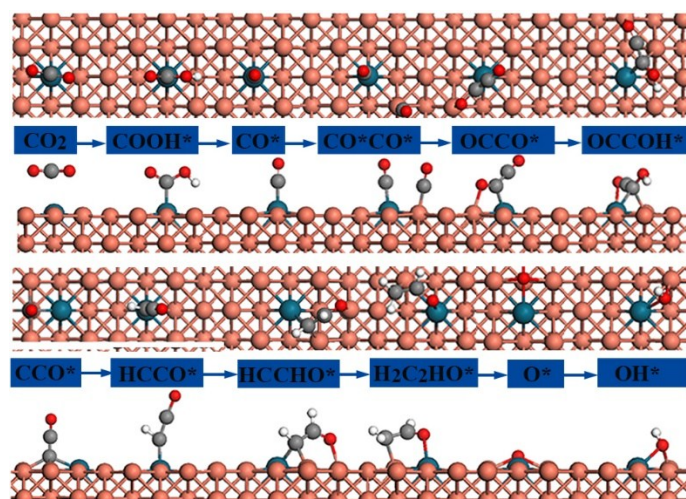


Figure S6. Model of optimized intermediates of carbon dioxide reduction to ethylene on Pd-Cu(100). Orange, blue-green, gray, red and white balls represent Cu, Pd, C, O, H atoms, respectively.

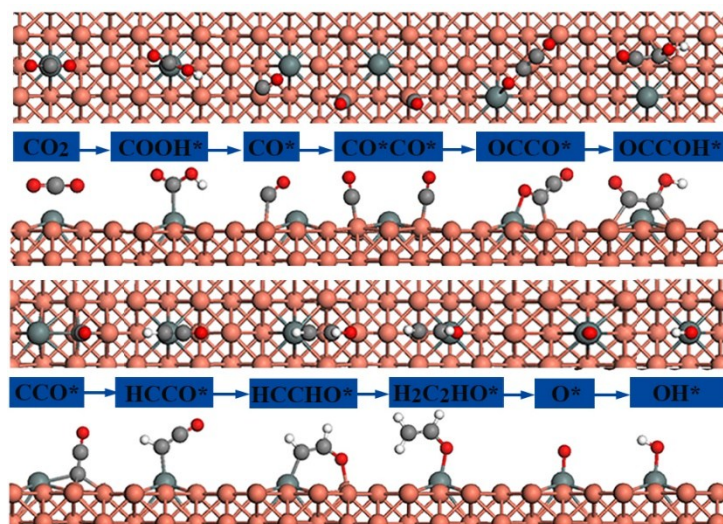


Figure S7. Model of optimized intermediates of carbon dioxide reduction to ethylene on Sn-Cu(100). Orange, cyan, gray, red and white balls represent Cu, Sn, C, O, H atoms, respectively.