

Accepted Manuscript

Title: The role of iron-oxide aerosols and sunlight in the atmospheric reduction of Hg(II) species: A DFT+*U* study

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PII: S0926-3373(18)30378-3
DOI: <https://doi.org/10.1016/j.apcatb.2018.04.049>
Reference: APCATB 16620

To appear in: *Applied Catalysis B: Environmental*

Received date: 2-3-2018
Revised date: 17-4-2018
Accepted date: 21-4-2018

Please cite this article as: Tacey SA, Szilvási T, Xu L, Schauer JJ, Mavrikakis M, The role of iron-oxide aerosols and sunlight in the atmospheric reduction of Hg(II) species: A DFT+*U* study, *Applied Catalysis B: Environmental* (2018), <https://doi.org/10.1016/j.apcatb.2018.04.049>

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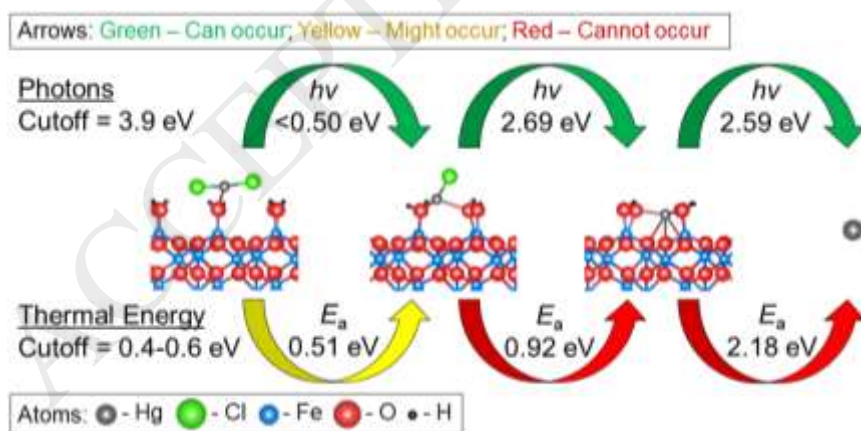
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Graphical Abstract



Highlights

- Gas-phase photochemical reduction of HgCl₂ and HgBr₂ is not possible in troposphere
- Phase diagrams determine stable iron-oxide surfaces under tropospheric conditions
- Thermal effects alone cannot promote mercury reduction on iron-oxide aerosols

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