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Accelerating the photocatalytic water splitting in catalyst-dye complexes

Shao, Y.

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Propositions

Belonging to the thesis entitled
“Accelerating the Photocatalytic Water Splitting in
Catalyst–dye Complexes”

1. O–O bond formation in water oxidation critically depends on antiparallel spin alignment of unpaired electrons on the WOC and dye.
Chapter 2, this Thesis
2. Solvent rearrangement plays a significant role in facilitating the photocatalytic water oxidation reaction.
Chapter 2, this Thesis
3. Tuning the proton chemical potential near the catalytic active site is able to accelerate the rate-limiting O–O bond formation.
Chapter 3, this Thesis
4. Tunable resonant coupling between electronic and nuclear motions can enhance the rate of O–O bond formation.
Chapter 4, this Thesis
5. Probably spin conservation over the catalyst–dye motif and its oxygen product facilitates O–O bond formation.
Chapter 5, this Thesis
6. A complete story returned in a scientific article should be supported by sufficient macroscopic and microscopic evidences, and computational tools can make it happen.
7. It happens in scientific research that you start and continue with a faulty logic but end up with an exact answer to your initial question.
8. It is of practical importance for humankind to convert “funds” from the sun into chemically useful forms to support their daily lives rather than only high impact factor articles.
9. If you cannot focus on writing during the day, especially in the times of Corona, try it at night when the whole world falls asleep.
10. If it is not good then it is not the end.