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Biological diversity of photosynthetic reaction centers and the solid-state photo-CIDNP effect

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Propositions

belonging to the thesis

“Biological diversity of photosynthetic reaction centers and the solid-state photo-CIDNP effect”

1. Photo-CIDNP is an intrinsic property of photosynthetic reaction centers.
This Thesis, Chapter 6
2. The remarkable strength of the photo-CIDNP signals observed in photosystem I is attributed to strong exchange coupling between the donor and acceptor radicals.
This Thesis, Chapter 2 and Chapter 3
3. The anomalous magnetic field dependence of heliobacterial reaction centers can facilitate, in the future, a better understanding of the theory of photo-CIDNP in solid state.
This thesis, Chapter 5
4. Although the variation in the naming of the primary electron donor covers only a marginal range of 2 nm it is recommended to update the nomenclature to avoid possible confusion.
Oh-Oka, Photochem. Photobiol. (2007) 83, 177-186.
Heinnickel et al., Photosynth. Res. (2007) 92, 35-53
5. The variability of the electronic processes among different organisms suggests that the process of photosynthesis is remarkably robust against evolutionary diversity.
This Thesis, Chapter 6
6. The discovery of new photosynthetic organisms will be the only way to solve the longstanding puzzle of the evolution of the photosynthetic machinery.
Bryant et al., Photosynth. Res. (2007) 91, 269-270.
Allen et al., Nature (2007) 445, 610-612.
This Thesis, Chapter 6
7. Mental stability is a state of balance between short term happiness and long term melancholy that is more based on reason than on emotions.
8. It is recommended that PhD studies should be done abroad from the home country of the candidate.
9. Modern scientific practice lacks standardization.
10. A multicultural world will only exist when there is no prejudice in international laws.

Leiden, 11th October 2007

Esha Roy