

# Photophysics of skin pigment melanin

**Debashree Ghosh**

School of Chemical Sciences, Indian Association for the Cultivation of Science,  
Jadavpur, Kolkata 700032

The biological pigment melanin is the primary component in our skin that is responsible for photoprotection from sunlight. While this fact is well acknowledged, the exact molecular mechanism of the process is much more obscure. It is further complicated because of the lack of knowledge about the exact structure of melanin. We use computational tools to understand the mechanism of photoprotection in melanin [1-3] and find the crucial role of heterogeneity is central to efficient nonradiative decay without any structural damage.[4]

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2. Effect of microsolvation on the nonradiative decay of eumelanin monomer, P. Ghosh, D. Ghosh, *Phys. Chem. Chem. Phys.*, 21(47), 26123 (2019).
3. Charge transfer in DHICA eumelanin-like oligomers : role of hydrogen bonds, A. Choudhury, D. Ghosh, *Chem. Comm.*, 56(72), 10481 (2020).
4. Computational aspects towards understanding photoprocesses in eumelanin, D. Ghosh, *WIREs Comput. Mol. Science.*, 11(3), e1505 (2021).