

Study of the mechanism of sensitization reactions using time-resolved spectroscopic methods

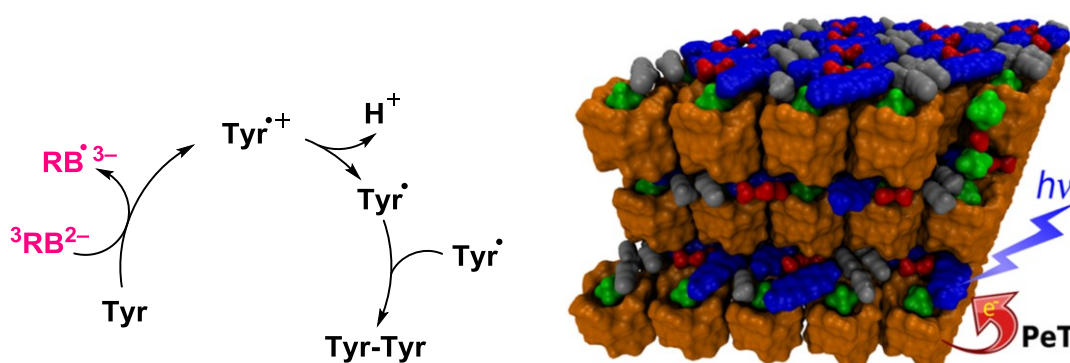
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Photosensitization is a photochemically activated reaction initiated via energy or electron transfer. These processes drew much attention of scientists over the few last decades and have found many applications in different fields, such as photocatalysis in organic synthesis, material/ surface science and medical treatments, such as photodynamic therapy and photochemical tissue bonding.

The first part of the talk is focused on a comprehensive investigation of the triplet state photochemistry of rose bengal dye (RB) and its kinetics using nanosecond transient absorption spectroscopy.¹ Subsequently, the study of the mechanism of amino acids crosslinking sensitized by rose bengal, will also be discussed.

In the second part, the mechanism of photoinduced electron transfer in co-crystals of methyl viologen hexafluorophosphate ($MV^{2+} \cdot 2PF_6^-$) and dodecamethylbambus[6]uril (BU6), and the origin of the long-lived charge-separated state studied by steady-state diffuse reflectance spectroscopy and femtosecond transient pump-probe spectroscopy, will be reviewed.²



[1] Ludvíková, L.; Friš, P.; Heger, D.; Šebej, P.; Wirz, J.; Klán, P. *PCCP* **2016**, *18*, 16266.

[2] Fiala, T.; Ludvíková, L.; Heger, D.; Švec, J.; Slanina, T.; Vetráková, L. u.; Babiak, M.; Nečas, M.; Kulhánek, P.; Klán, P.; Sindelar, V. *J. Am. Chem. Soc.* **2017**, *139*, 2597.