

Triplet state of bacteriochlorophyll in reaction center of photosynthetic bacteria

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The technique of time-resolved flash EPR is applied to the study of photosynthetic bacteria reaction center (RC) triplet state. Such triplets demonstrates a unique spin-polarized pattern AEEAAE (A stands for enhanced absorption and E for emission of microwaves at canonical field position). The temperature dependence of zero field splitting (ZFS) parameter D interpreted as a manifestation of T-T energy exchange between the pigments of RC. The anomalous temperature dependence of the triplet spectrum polarization (AEEAAE to EA shift) studied also. Such behaviour may be related to anisotropic relaxation due to spin-spin interaction with the quinone-iron complex of the primary electron acceptor of RC.