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Preface

Photosystem II

This special issue of *BBA-Bioenergetics* highlights recent advances of our understanding on photosystem (PS) II. The newest available structure of PSII at 1.9 Å resolution [1], although not described here, has inspired the authors of this special issue to update and modify their earlier theories and models on the function of the water splitting PSII. Reviews cover detailed structure–function analyses and evolutionary considerations of the water oxidizing reactions, charge separation and acceptor side mechanisms of PSII, as well as the cyclic electron transfer within PSII. Likewise, the light-harvesting systems, the small PSII proteins and the oxygen evolving proteins are thoroughly discussed and the newest aspects on supramolecular organization of PSII are presented. The origin and consequences of oxidative stress and photodamage in PSII are addressed in several reviews and the various photoprotective mechanisms are highlighted. Finally the biogenesis and repair of PSII, the latter strongly regulated by reversible PSII core protein phosphorylation, are covered in this special issue of Photosystem II.

Reference

[1] Y. Umena, K. Kawakami, J.-R. Shen, N. Kamiya, Crystal structure of oxygen-evolving photosystem II at a resolution of 1.9 Å. Nature 473 (2011) 55–60.

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