Photosynthesis on an electrode

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Photosynthesis is the primary route from which solar energy is harnessed to fuel 99% of the life on Earth. Underlying this important process are impressive machineries that convert Earth-abundant resources (sunlight, water and carbon dioxide) into complex chemicals. We now have the capability to tap into the photosynthetic electron transport chain *in vivo* and harness its electrons for alternative energy conversion technologies.[1, 2] However, enormous hurdles remain when wiring photosynthetic components to electrodes compared to the wiring of molecular catalysts or enzymes.[3] Here, I will talk about how photosynthesis can be wired to electrodes – from purified proteins to living whole cells; what we can gain from doing this; and what are the future possibilities using this approach.

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