Insights: Publications

Amyloid Scaffolds as Alternative Chlorosomes

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Living systems contain remarkable functional capability built within sophisticated self-organizing frameworks. Defining the assembly codes that coordinate these systems could greatly extend nanobiotechnology. To that end, we have highlighted the self-assembling architecture of the chlorosome antenna arrays and report the emulation and extension of their features for the development of cell-compatible photoredox materials. We specifically review work on amyloid peptide scaffolds able to (1) organize light-harvesting chromophores, (2) break peptide bilayer symmetry for directional energy and electron transfer, and (3) incorporate redox active metal ions at high density for energy storage.