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## Pigment complexes for the construction of photo-electrochemical devices

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One approach to construct photo-electrochemical devices is to assemble oriented layers of photoactive pigments on electrode surfaces. The proper orientation of pigments for creating the directional electron transfer and wiring them to the electrode surface requires a scaffold. As the starting point, a peptide scaffold was used to bind chlorin pigments. The photo-activity of the chlorin attached to the peptide was measured in the presence of several quinones as the external electron acceptors. The data showed that the photoactivity of complex was dependent on the type of quinone and modulated as the result of the net charge on the peptide surface. Fixing of peptide complexes on the electrode surface can be achieved by the introduction of thiol groups into the scaffold. The devices constructed from these photoactive complexes can function as solar energy converters and photo switches in electronic circuits.

### Biography

Reza Razeghfard received his PhD in 1997 from the Australian National University working on spectroscopic studies of light reactions of photosystem II protein leading to water oxidation. He continued his research interests in studying photosynthetic proteins in algae as a postdoctoral fellow at the university of Minnesota and research fellow at the Australian National University. He is currently Chemistry Major Chair and Associate Professor of Chemistry at Nova Southeastern University.

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