

From bio(mimetic) systems to opto-electronic devices

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Biomimicry is a strategy of innovation based on emulating the function of biological systems, to develop practical and sustainable solutions to human challenges. To emulate such complex biological systems, which Nature has optimized over the course of evolution, it is essential to use all the tools at our disposal, drawing on knowledge and expertise spanning the breadth of the Natural Sciences.

In this talk, I will discuss my research in the various fields that have helped to shape my current topic of “biomimetic opto-electronics”. Based on these studies into i) the (non)equilibrium phase behavior of surfactant systems, ii) the structure and structural changes in photoactive membrane-bound retinal proteins and iii) the development of a differential photodetector architecture for organic chromophores, I will show how these seemingly distinct studies have led to encouraging preliminary results for protein-based photodetection, and promising future strategies for their optimization.

Towards Protein Photodetection

