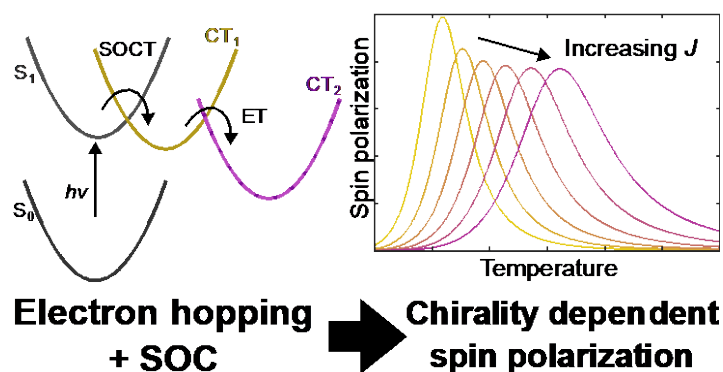


## Chirality induced spin effects in molecular electron transport

Thomas P. Fay

Department of Chemistry, University of California, Berkeley, California 94720, United States  
tom.patrick.fay@gmail.com

In this talk I will describe how chirality affects spin transport in molecular systems. In particular I will outline a mechanism by which electron spin coherence[1] and spin polarization[2] can be generated in chiral molecular systems. These effects emerge in systems where charge transport is dominated by incoherent hopping, mediated by spin-orbit and electronic exchange couplings. In this talk I will present the theory of these effects, and the general principles we can use to understand chirality induced spin effects in molecular systems. Furthermore, I will outline how chirality induced spin effects could be probed experimentally, and also demonstrate how this theory can explain the observed temperature dependent spin polarization in Photosystem I [3]. Chirality induced spin coherence and polarization effects should manifest in many chiral systems, and the ideas I will present have implications for the study of spin transport in systems relevant to chemistry, biology, and quantum technologies.



### References

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