

## Solar Energy Storage and Release in Thin Film Media

Melody Kelley, Silas Blackstock

*MINT Center and Department of Chemistry, The University of Alabama*

The photochemical 2+2 cycloaddition of norbornadiene to the higher energy quadricyclane is a well studied system that has been useful to many areas. Its limitations include poor recyclability and inefficient catalytic conversions. In the film state, the system is even less developed. We are developing a class of norbornadienes with a triarylamine redox auxiliary as a built in switch for the release of energy. The system is expected to undergo electrochemical switching at the electrode with the actual redox chemistry not being done at the quadricyclane but at the redox auxiliary which forms a stable radical cation. **In thin film media, we aim to show that this novel class of norbornadiene can photoconvert to the corresponding quadricyclane (in ambient light) and back convert-releasing energy- upon electrochemical stimulation to the film.**

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