Interested In Solving the World Energy Challenges?

In this case, we are looking for motivated students for a 30 or 60 credit Master's thesis project in our group, working with Molecular Solar Thermal Energy Storage (MOST).

Molecular solar thermal energy storage (MOST) systems are based on molecules that can absorb sunlight and convert to high energy photoisomers. The solar energy is stored in the photoisomer and the energy can be released on demand as heat using a catalyst (Figure 1).

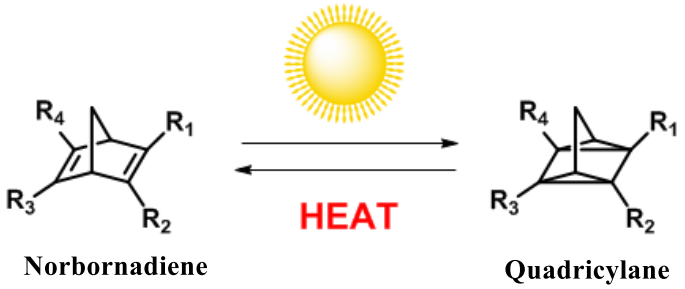

Figure 1. Photoinduced isomerization of norbornadiene to quadricyclane and the back conversion.

The idea is that the material is cyclized between the solar collector, storage reservoir, energy extraction and heat exchange. Consequently the material have to be liquid or in solution. Hence one of the challenges for this product is to transform the solid material to a liquid, or increace the solubility.

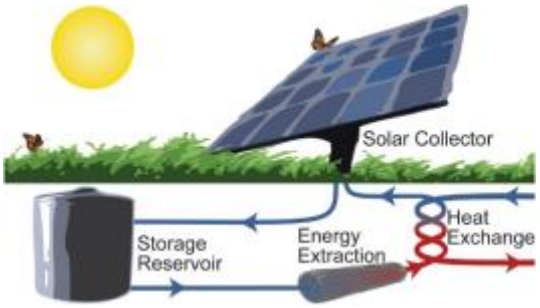

Figure 2. Ilustration of MOST system.

In this project you will be working in collaboration with menbers of the group:

- **Organic synthesis to develop new types of norbornadienes, which have lower melting point.**
- **Mesurement of the physical properties e.g. DSC and viscosity.**
- **Photochemical characterization, where you will learn a variety of spectroscopy techniques.**

If you are interested please visit our website and contact

Associate Professor Kasper Moth-Poulsen,
kasper.moth-poulsen@chalmers.se

Post Doc Anne Petersen,
annepet@chalmers.se

http://www.moth-poulsen.se/