Materials for Energy
MSE 455/556

Project 03 Statement
Materials for Sustainability Plan

Objective:
The objective of this project is to investigate the material needs for advancing a particular technology relevant to renewable energy or sustainability in general. Examples include

- Materials for higher efficiency solar cells
- Materials, either functional or structural, for improved vehicle fuel efficiency
- Materials for widespread adoption of superconducting electricity transmission
- Materials for biodegradable plastics
- Materials for carbon capture leading to "clean coal"

Report:
The product of this project will take the form of a written report. The report must follow the template provided on the course website.

Four Elements:
This project is intended to focus on depth rather than breadth. In a multicomponent device, focus on one component that is a bottleneck in performance. The introduction should place the question in the broader context but the four elements, enumerated below, should be applied to a narrow materials issue.

The following elements must be answered in the report.

- Describe the state of the art, including materials used.
- Describe the limitations, technical, social, economic that require improvement.
- Review current research directions in providing an improved material, including the basis for these directions.
- Summarize the changes that would come about, if this new material is discovered and implemented.

References:
The report must include no fewer than five references, which are attributed to the original source. These references must be from the following sources

- archival, peer-reviewed journals
- government reports
- technical monographs

Additional references from newspapers and websites are acceptable, but do not count toward the five required references.