1046-35-1982 **Yang Li*** (yangli3@msu.edu), Dept. of Mathematics, 212A Wells Hall, Michigan State University, East Lansing, MI 48824, and **Keith S Promislow** (kpromisl@math.msu.edu), Department of Mathematics, 212A Wells Hall, East Lansing, MI 48864. *Gamma convergence for Functionalized Energies.* Preliminary report.

An essential element of energy conversion is the development of interconnecting networks of nanometer scale conductive materials. For these materials to be cost effective they must be self-assembling. One method to attain this is to functionalize hydrophobic polymers by the addition of pendant acid tipped side-chains. When mixed with solvent the materials phase-separate into pore structures. We model this with an energy which corresponds to square curvature of the interface *minus* surface area, which we call the functionalization of surface area. Minimizers of the energy seek to maximize surface area while minimizing curvatures. We extend the concept of functionalization to a broad class of convex energies and show that the resulting Gamma-convergence problems lead to a novel higher-order curvature driven flows. (Received September 16, 2008)