Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Microphase Separated Block Copolymers in Pervaporation Membranes for Biofuels Processing DOUGLAS GREER, CHAE-YOUNG SHIN, EVREN OZCAM, JEFFREY SKERKER, THALITA BASSO, DACIA LEON, STEFAN BAUER, NITASH BALSARA, Univ of California - Berkeley, ENERGY BIOSCIENCES INSTITUTE COLLABORATION — The production of transportation biofuels requires numerous continuous separation processes. We designed block copolymer membranes for pervaporation as a means to achieve these separations. These block copolymers contain a glassy structure block for support and a rubbery transport block for sorption and diffusion. We create membranes with nanoscale conducting channels using the unique trait of block copolymers to assemble into ordered morphologies. We have previously used nanostructured membranes to separate ethanol/water binary mixtures [J. Membr. Sci. 373, 112 (2011)], [J. Membr. Sci. 401, 125 (2012)]. We report this type of membranes is effective in other, more complex separations important to biofuel production. These separations increase yield and decrease process time.

Douglas Greer
Univ of California - Berkeley

Date submitted: 14 Nov 2013 Electronic form version 1.4