SCHOOL OF CHEMICAL, BIOLOGICAL & MATERIALS ENGINEERING

The University of Oklahoma
Norman, Oklahoma
2007 – 2008 Seminar Series

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DR. NITASH P. BALSARA

PROFESSOR
DEPARTMENT OF CHEMICAL ENGINEERING
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LAWRENCE BERKELEY NATIONAL LABORATORY
UNIVERSITY OF CALIFORNIA, BERKELEY
BERKELEY, CALIFORNIA

Will present a seminar on

"IONIC CONDUCTIVITY IN BLOCK COPOLYMER ELECTROLYTES FOR LITHIUM BATTERIES AND FUEL CELLS"

We describe the effect of morphology on ion transport in microphase separated block copolymers. Ion transport is restricted to one of the microphases. In polymers doped with lithium salts, we find that the overall ionic conductivity of the block copolymers increases with molecular weight. This unexpected effect may be related to the distribution of Li within the block copolymer microphases, which is studied by energy-loss electron microscopy. Our discovery enables the creation of dry electrolytes with high conductivity and shear modulus. The applicability of these materials in lithium ion batteries will be discussed. The talk will conclude with a brief discussion of the effect of morphology on proton conduction in hydrated block copolymers.

THURSDAY, SEPTEMBER 6, 2007
COOKIES AND COFFEE -- 2:30 P.M.
SEMINAR -- 2:45 P.M.
SARKEYS ENERGY CENTER, ROOM M-204

THIS IS A REQUIRED SEMINAR FOR CHE 5971