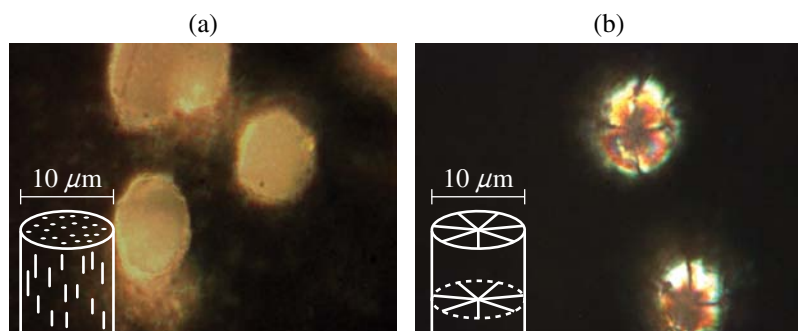


About the Cover:

The cover photo shows Department of Chemistry master's student Eric Glowacki inserting a photoswitchable gas permeation membrane into a permeation chamber for testing. Eric, along with LLE advisor Ken Marshall, undergraduate student Karen Horowitz, and Dept. of Chemical Engineering professor Ching Tang has for the first time devised and fabricated a unique type of membrane that changes its permeability to gas merely by shining light onto its surface. This "photoswitching" of the gas permeability is reversible through alternating illumination by ultraviolet and visible light. Photoswitching in these membranes is made possible by tiny micropores filled with light-sensitive liquid crystals, synthesized at LLE, which change their molecular arrangement under certain illumination conditions.



The photos at the left show polarized optical microscopy (POM) images of the liquid crystal filled pores in the photoswitchable membranes. The size of the pores is approximately 10 μm . Images (a) and (b) exhibit different orientations of the liquid crystal molecules.

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