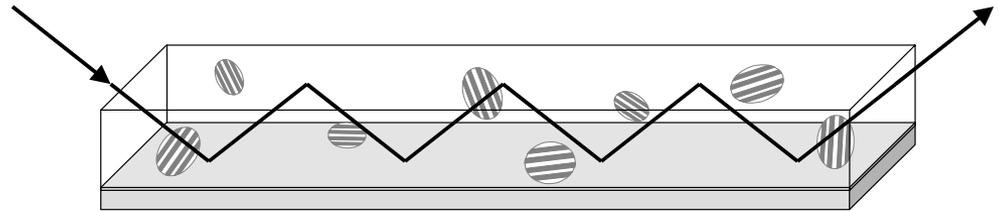


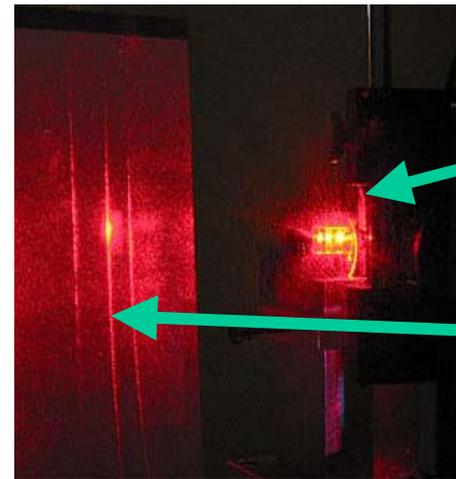
Guided Wave Depolarized Light Scattering

Bruce Garetz (Polytechnic University, Brooklyn) and Nitash Balsara (University of California, Berkeley), **DMR-213508**

Our objective is to develop a new probe for studying ordered thin films. A planar optical waveguide will be fabricated by depositing the polymer film on a low refractive index substrate (fused silica). The depolarized scattered beam will be guided through the film and detected using a photodetector. Preliminary results are encouraging; measurable depolarized light scattering signals from block copolymer films with a lamellar structure have been obtained.



Schematic of a guided-wave interacting with a block copolymer thin film containing ordered grains.



block
copolymer
sample

TM and TE
signal

Experimental realization of guided wave depolarized light scattering (GWDLS)

Guided Wave Depolarized Light Scattering

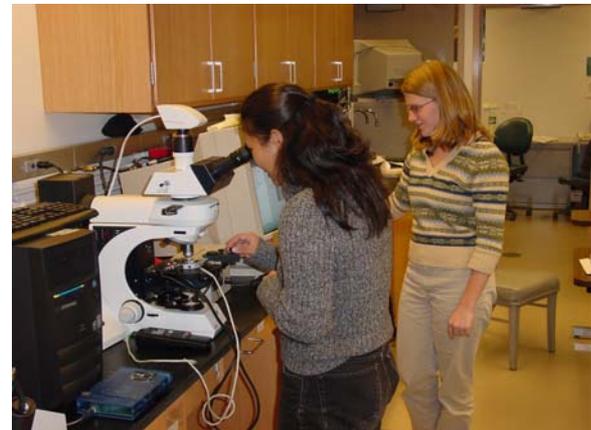
Bruce Garetz (Polytechnic University, Brooklyn) and Nitash Balsara (University of California, Berkeley), **DMR-0213508**

Outreach:

NPB is a member of the Special Scholarships Committee at Berkeley. Our mission is to help the professional development of minority and economically disadvantaged students gain in Berkeley. We work with the local high schools, organizing workshops for educating students and teachers. Special hands-on tutorial sessions are organized at the University for students in their freshman year to facilitate their transition from high school to university classes.

Education:

The research is being carried out by two PhD students, Ferass Abuzaina (Polytechnic University) and Jeffery Wilbur (Berkeley). Their efforts are augmented by 3 undergraduate students, Kamaldeep Gandhi and Thomas Redis at Polytechnic University and Julie Chan at Berkeley.



Julie Chan working with the optical microscope