

Art 455 Holography Laboratory Procedure

Diffraction Grating Hologram

1. Preparation

- (a) Get key out of locker.
- (b) Hang key inside door knob (or put back in locker).
- (c) Turn on safelight in lab and 2 safelights in darkroom.
- (d) Turn on laser and unlock your locker.
- (e) Prepare Wet Lab
 - Place marked trays in this order L to R: developer, stop bath, photoflo.
 - Get EDTA tray for bleach out of the sink and place it next to the sink.
 - Pour chemicals into marked trays.
- (f) Clean glass part of film holder in wet lab.

2. Creating Imagery

- (a) Create your set up. Put your objects in the object beam on the left.
- (b) Check that you have 2 beams.
- (c) Check that your objects do not block either beam.
 - Place a white card in the film holder.
 - Block the object beam and observe the reference beam on the card.
 - Block the reference beam and observe the patterns of your set-up on the card.
 - Adjust objects into a unique composition of light and shadow pattern.
 - Try to visualize your composition in the colors of diffraction grating light.

3. Exposing the Film

- (a) Shutter the laser.
- (b) Turn off all lights in wet lab, workbench, classroom. Lock door to lab (horizontal is locked position). Shut both wet lab doors.
- (c) Find emulsion (sticky) side of film. Emulsion faces laser light in film holder. Load film between the two 5 x 7 glass sheets and place into holder. Taped edge goes to your right and ground edge opening faces toward you as you load the film holder. Make sure clips are securing the right flap of the black holder and are not hanging in the film plane. They will print an image on your film!
- (d) Let film settle about 5 clock minutes.
- (e) Expose for __ seconds. (Determined in class.)

4. Developing the Film

- (a) Carefully remove glass from film holder **with fingers on both sides of glass**. Open glass and remove your film without touching the exposed area.
- (b) Place emulsion side down in developer tray. (Goggles, gloves and tongs are available for your use.) Develop for 3 minutes with continuous agitation turning film over once.
- (c) Move film into Stop Bath solution for 2 minutes.
- (d) Rinse in water for 1 minute (You can now turn on main lights.)
- (e) Move film into Bleach. Bleach until film is clear.
- (f) Rinse for 5 minutes.
- (g) Place film in Photo-Flo (to remove water spots) for 30 seconds if you want and hang film to dry.
- (h) Dry film. Air dry is best, but for time purposes you may use a hair dryer on lowest setting held about 1 foot away from the film.
- (i) Clean workbench putting away anything you used.

5. Cleanup and Leaving

- (a) Carefully pour chemicals back in their labeled bottles.
- (b) Rinse trays and wipe up spills.
- (c) Turn off LASER and **unplug hot glue gun**
- (d) Turn off 2 safe lights in wet lab, overhead lights in **Laser Lab**, and **classroom** lights.
- (e) Lock-up laser lab door and classroom door. Test outside lock on 136 HASKETT from hallway side.
PUT KEY BACK IN LOCKER.