

# Fabrication and Characterization Support for CCMR

**CNF Project Number: 2974-21**

**Principal Investigator(s): Jonathan Shu**

**User(s): Philip Carubia**

Affiliation(s): Cornell Center for Materials Research (CCMR), Cornell University

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Contact: jbs24@cornell.edu, pmc228@cornell.edu

Website: www.ccmr.cornell.edu

Primary CNF Tools Used: Universal Laser Systems VersaLaser VLS3.50

## Abstract:

The Cornell NanoScale Facility (CNF) is accessed for use of the Universal Laser Systems VersaLaser VLS3.50, and laser cutting 20 mm, 25 mm, and 40 mm discs from PSA backed grinding papers to be used with the DHR3 shear rheometer located in the Cornell Center for Materials Research (CCMR).

## Summary of Research:

Project 2974-21 was established for facilities staff from the Cornell Center for Materials Research (CCMR) to access basic instrumentation within the Cornell NanoScale Facility (CNF) for purposes of sample preparation and fabrication of accessories for CCMR instrumentation. The initial project proposal was started to gain access to the Universal Laser Systems VersaLaser VLS3.50 by the bard materials facility for cutting 20 mm, 25 mm, and 40 mm discs from PSA backed grinding papers to be used with our DHR3 shear Rheometer. These discs are used to increase the friction between stiffer samples and the instrument to reduce artifacts related to sample slippage.

## Conclusions and Future Steps:

Access to this laser cutter has allowed us to test tougher hydrogels and viscoelastic materials at higher strains than previously available. It is likely that we will be using the Universal Laser Systems VersaLaser VLS3.50 in the future as we use up our existing stock.

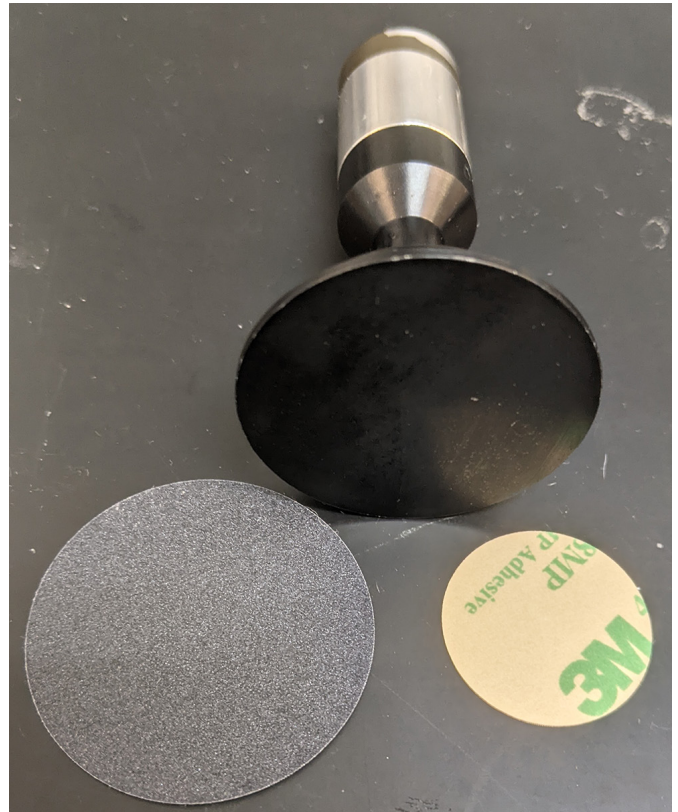


Figure 1: 40 mm upper parallel plate geometry with 40 mm disc front and 25 mm disc back.

