

CEDT Equipment List: Organic Lab

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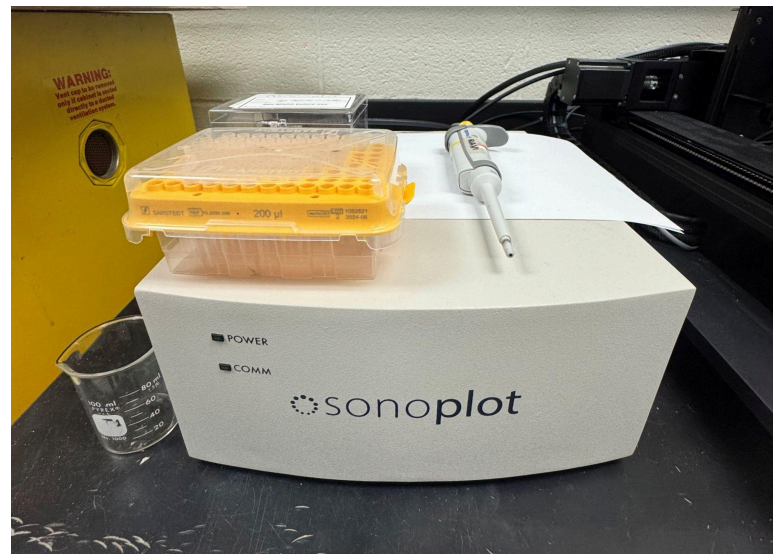
Fluid Dispensing System - Non-Contact (SonoPlot Microplotter II)

Description:

- Ultrasonic picoliter dispensing system for non-contact micro-patterning of functional inks and biological payloads. It automates surface tilt mapping to print custom patterns while tracking the process via an integrated CCD camera.
- Applications: graphene and carbon nanotube deposition, conductive polymer OLED printing, high-density protein microarrays, live-cell patterning

Details:

- Feature size: from 5 μm up to 200 μm diameter
- Minimum deposition volume: 0.6 pL
- Deposition volumetric variability: down to 10%
- Fluid viscosity threshold: up to 450 cP
- Stage travel range: 35 \times 30 \times 7 cm (X, Y, Z axes)
- Stage positioning resolution: 5 μm



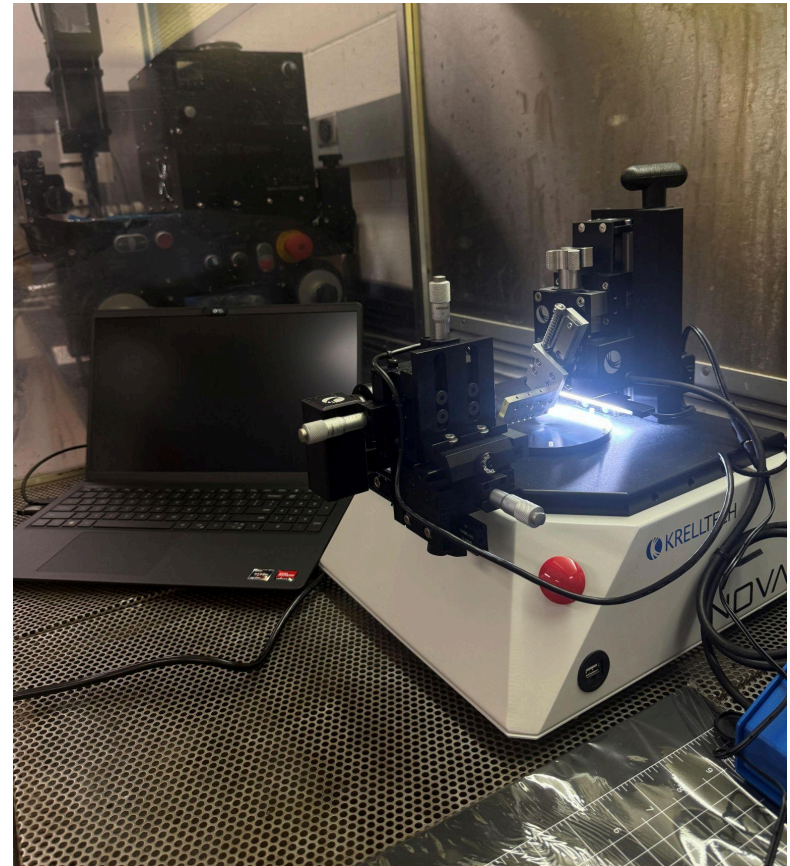
Optical Polishing System (KrellTech NOVA)

Description:

- Automated platform for precision optical surface polishing. Suitable for fiber optic connectors and bare fibers, photonic integrated circuits (PICs), waveguides, and custom optical components.

Details:

- Wireless Android tablet control
- Film size: 4" diameter
- Fibre size: 80 μm to >3 mm diameter
- Component size: 5–30 mm width; 0.5–5 mm thickness
- Footprint: 12 × 12 in (305 × 305 mm)



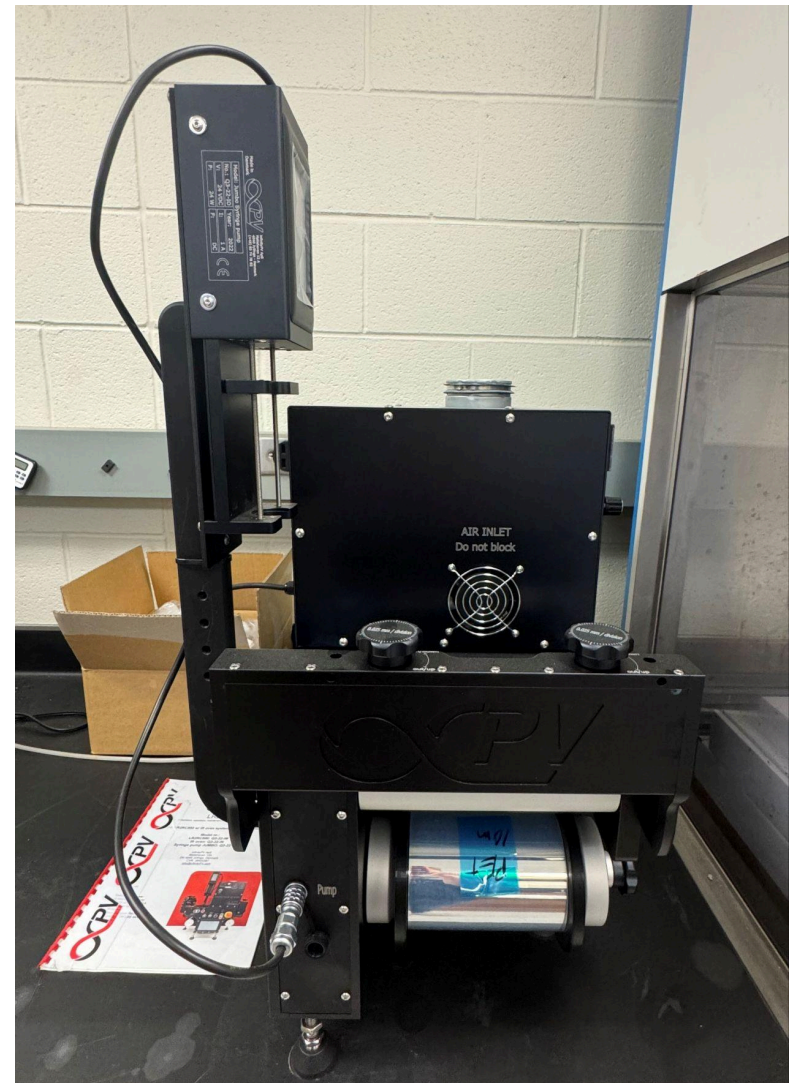
Roll-to-Roll Slot-Die Coater (infinityPV LR2RC500)

Description:

- Compact modular roll-to-roll slot-die coating platform designed for precision deposition and pilot-scale processing of functional thin films on flexible substrates. Supports continuous web handling, integrated drying/curing, and scalable process development for printed electronics and energy devices.
- Applications: perovskite solar cells, organic photovoltaics (OPV), printed batteries, Li-ion electrodes, thin-film transistors, LEDs, sensors

Details:

- Coating width: up to 180 mm
- Web width: up to 190 mm
- Web speed range: 0.05–2.8 m/min in forward and reverse directions
- Drying/curing section length: 250 mm
- Spindle configuration: automatic compressed-air spindles for 3" cores with adjustable cones for smaller diameters
- Power requirements: single-phase 240 VAC (smaller configurations) or three-phase 400 VAC (larger configurations)



Spray Coater - Ultrasonic (Sono-Tek Exacta-Coat)

Description:

- Automated, programmable benchtop coating system for thin-film substrate processing, material development, and low-volume production. It utilizes a non-clogging ultrasonic spray nozzle with precision three-axis servo control to deposit uniform layers without shear-induced material breakdown.
- Applications: hydrogen electrolyzers, fuel cells, solar cells, carbon nanotubes, nanowires, conductive inks, nanomaterials, sensors, electrochromic devices, MEMS, semiconductors, polyimides, and photoresists

Details:

- Work area dimensions: 400 × 400 × 100 mm (X, Y, Z axes)
- Nozzle spray diameter: 2–6 mm area
- Motion system: precision servo-driven 3-axis motion control

