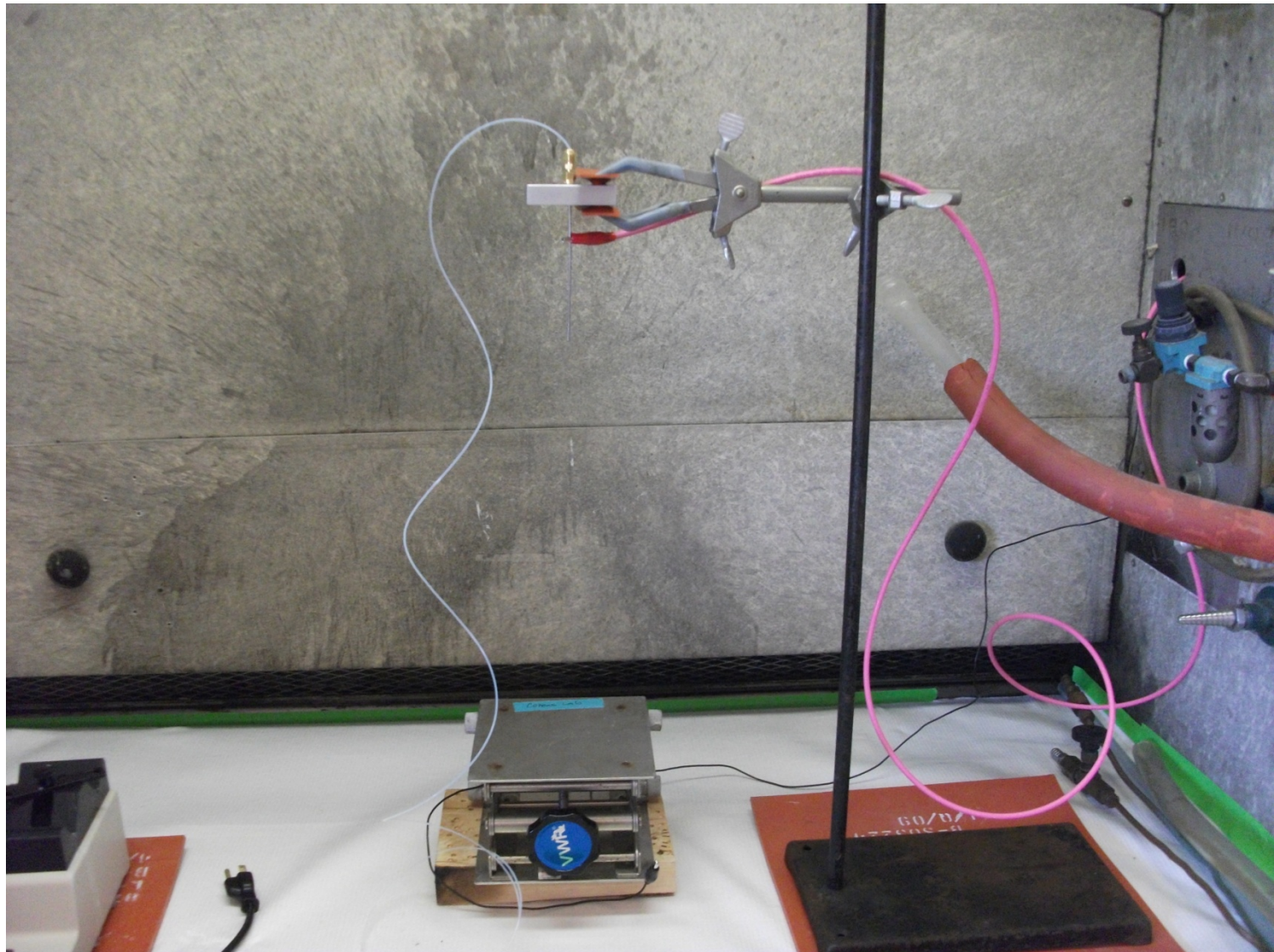


Electrospraying/Electrospinning equipment in 66-353

# **SAFETY SLIDES**

# Overview of electrospinning apparatus



# Safety Slides – High voltage electrical equipment



Maximum  
voltage ~  
40,000 V

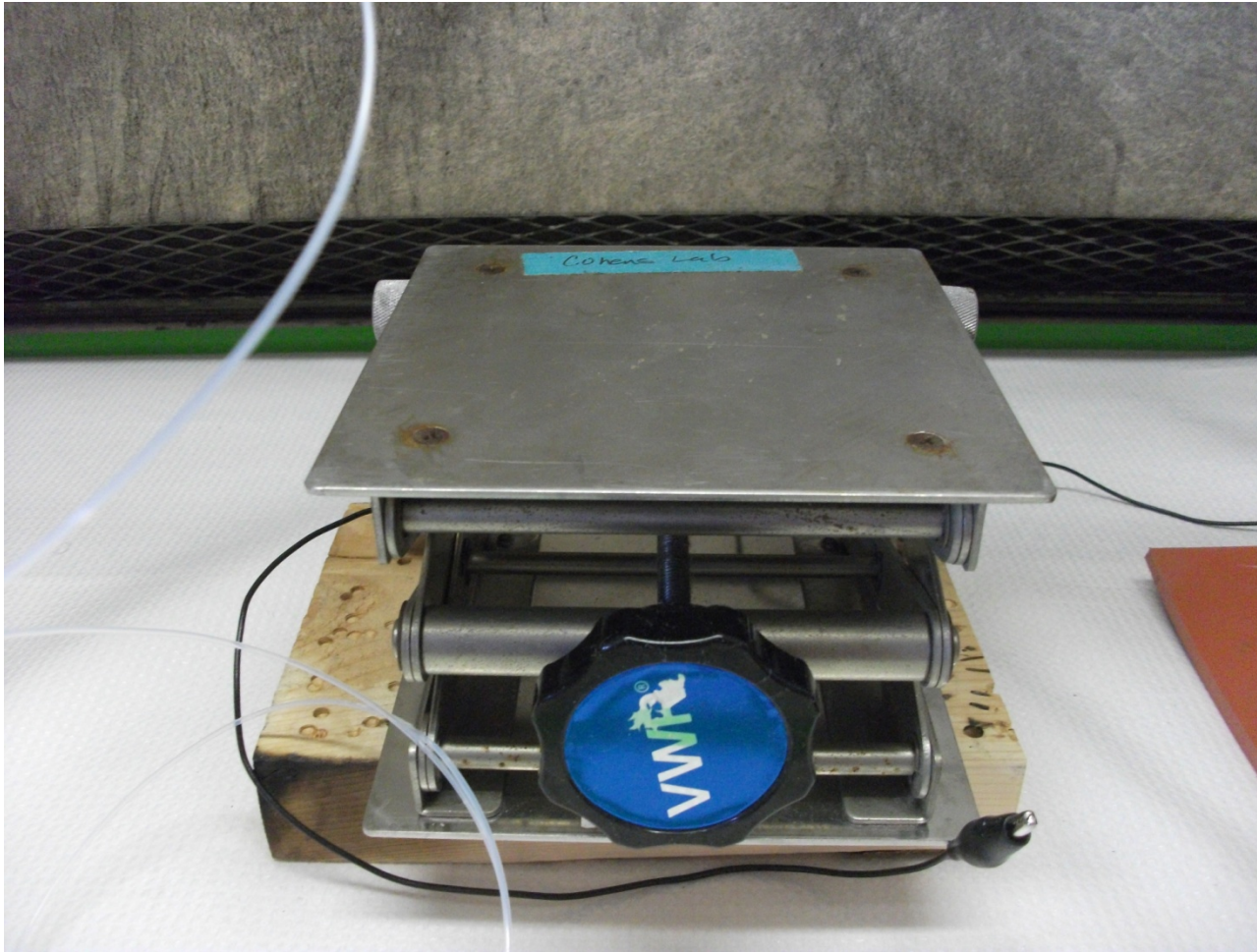
Low  
current  
discharge

Rubber Mat  
prevents  
any  
accidental  
shorting

Do not open case while plugged!  
Unplug in case of power loss



# Collecting plate

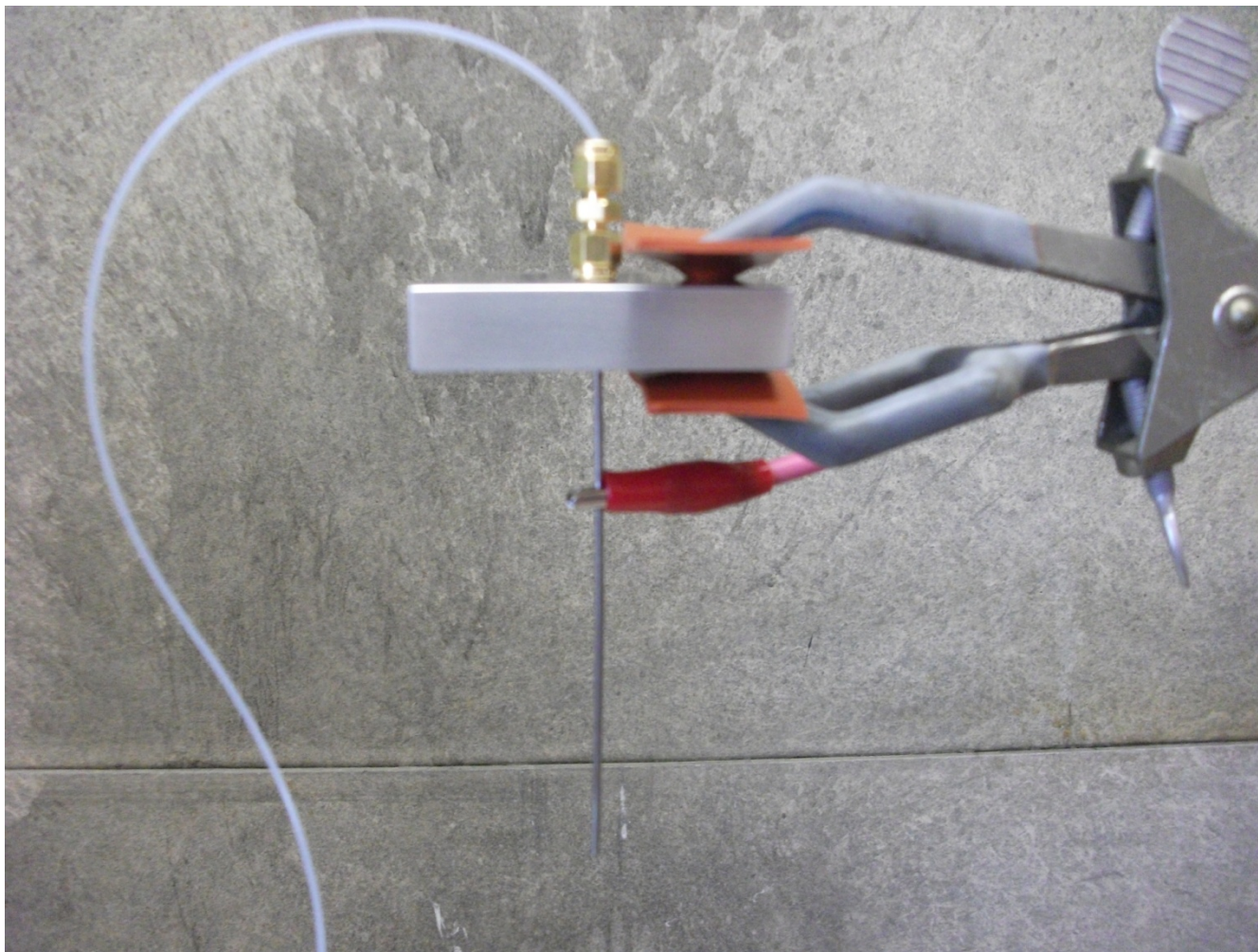


- Grounded conducting plate- Insulated from fume hood

- Asahiklin AK-225 is non-flammable

- Electrospinning/spraying of other hazardous solvents in fume hood

## Nozzle, high voltage clip



- Alligator clip connected to high voltage output
- The plate is isolated from lab stand and fume hood
- Care when using flammable solvents
- Wear long-sleeved labcoat/safety goggles while operating

# Risks from exposure to electrical current



- major hazards associated with electricity are electrical shock and fire
- Wet skin is has significantly less resistance (wear gloves!)
- The effect of the shock may range from a slight tingle to severe burns to cardiac arrest.

Current	Reaction	Current drawn
1 Milliampere	Perception level	~ 10-20 microamperes
5 Milliamperes	Slight shock felt; not painful but disturbing	
6-30 Milliamperes	Painful shock; "let-go" range	
50-150 Milliamperes	Extreme pain, respiratory arrest, severe muscular contraction	
1000-4,300 Milliamperes	Ventricular fibrillation	
10,000+ Milliamperes	Cardiac arrest, severe burns and probable death	Source: EHS