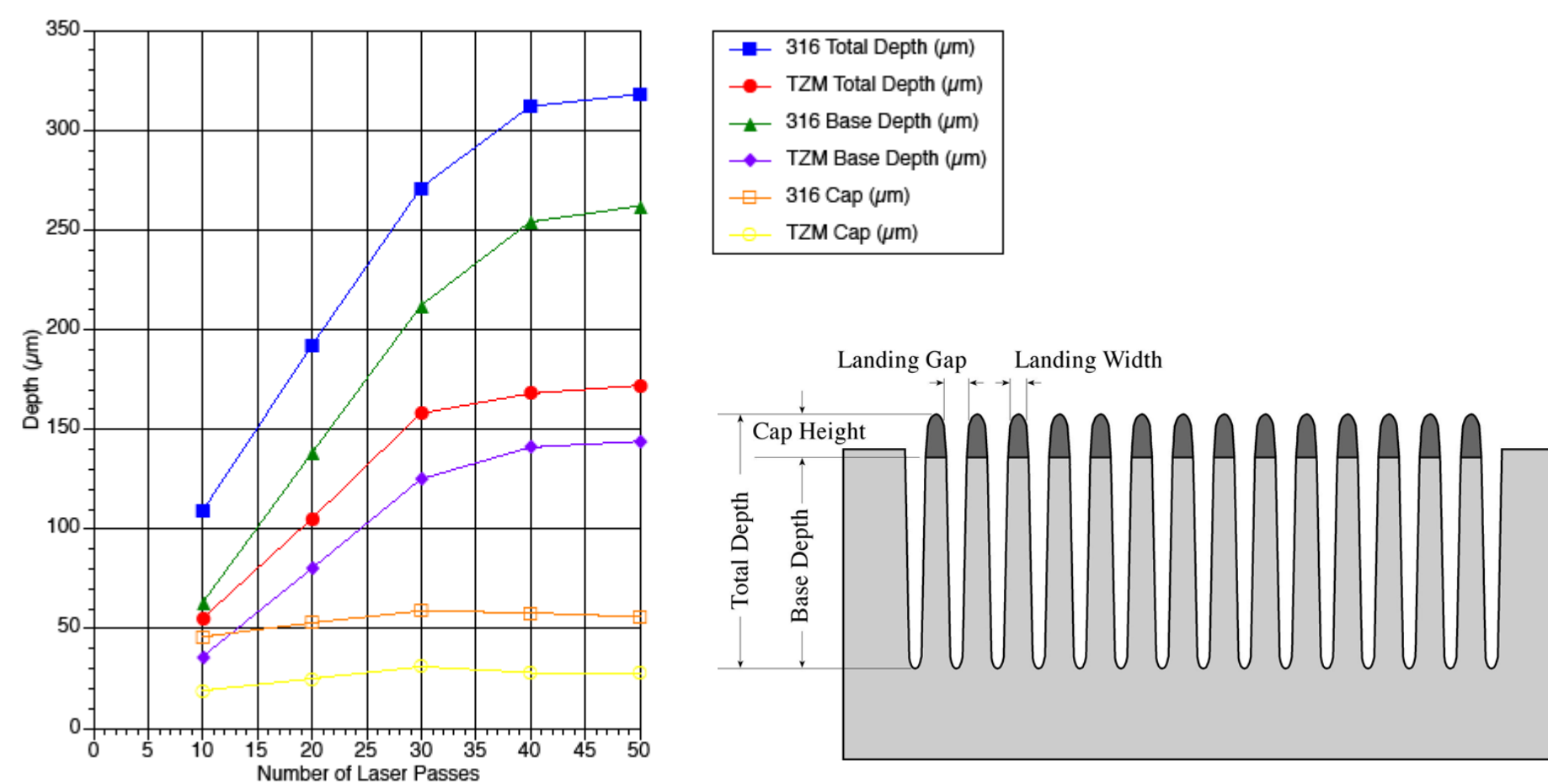


## Laser-etched Samples

- Channels etched in 90°(V) and 0°(H) direction 10,20, or 40 times by laser
- Channel depth dependent on material type

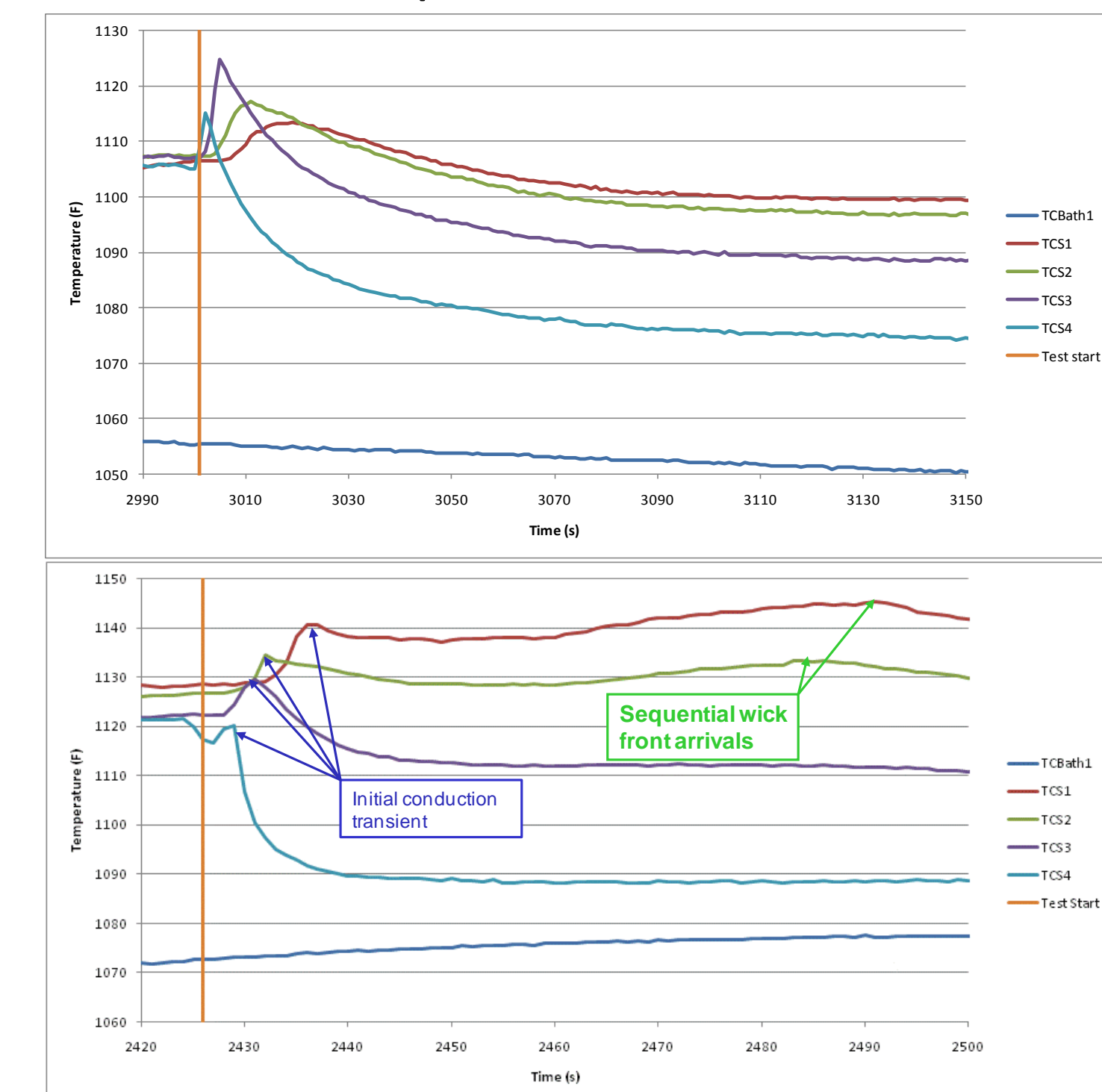


## Current Work

Laser-etched Samples SS-316 (3.5"x1"x1/8")	Laser-etched Samples TZM (3.5"x1"x1/8")
20V (tested)	40V (tested)
20V 10H (tested)	40V 20H (tested)
40V 10H	40V 30H
20V 20H	30V 20H
40V 20H	20V

## Results

### Temperature Traces for 40V Samples Orientation: Top, 90° Bottom, 45°



## SS-316 Samples



20V Samples  
 Orientation: Left, 90° Right, 45°



20V 10H Samples  
 Orientation: Left, 90° Right, 45°

## Experimental Procedure

- Samples dipped in lithium in 90° and 45° up and 45° down orientations
- Five radiant heaters (750 W each) heated the sample to T≈1100 F
- Band heater (650 W) assisted radiant heaters in heating the lithium to T≈1050 F

## TZM Samples



40V Samples  
 Orientation: Left, 90° Right, 45°



40V 20H Sample  
 Orientation: 45°

- Time of flight: 0.3 in/s for 90°, 0.1 in/s for 45°
- SS-316 20V 45 orientation, SS-316 20V 10H vertical orientation, TZM 40V 45 orientation all fully wetted-highly dependent on temperature

## Future Work

- 6" CVD-textured tungsten samples
- Expanded test matrix of temperature-gradient driven wicking
- Further deployment of thermocouples as sensors of wick front