

CVD System: LEAK TEST

Dates: July 15 & July 16 2018

(20180715_184822.csv & 20180716_114209.csv)

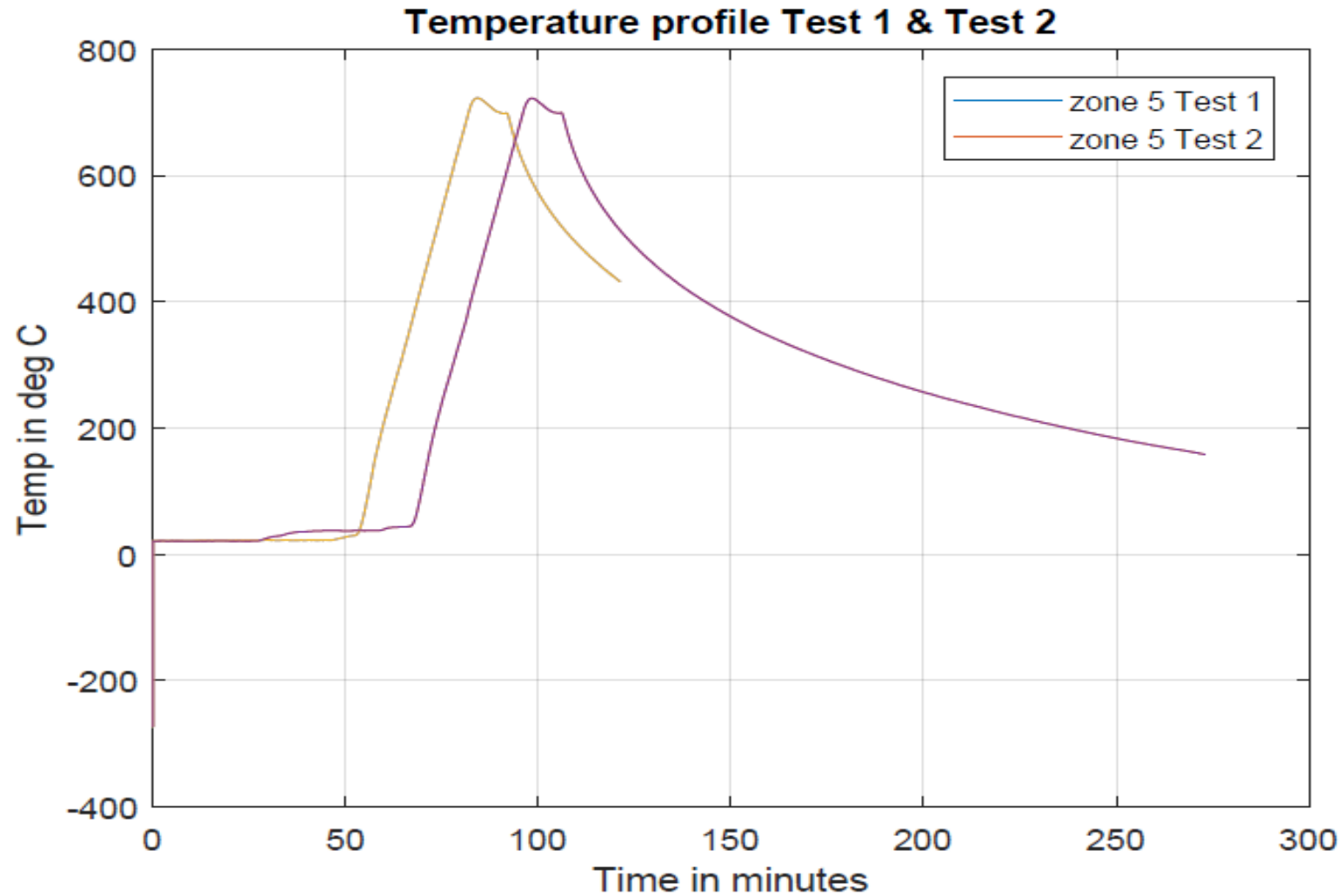
Test 1

1. Evacuation & flush for 1 min each-- Twice
2. Pump down for 5 min (0.2 mbar) and then the butterfly valve was closed (basically a vacuum sealed chamber).
3. All zones were heated to 700 C for 30 minutes.
4. Hold at 700 C for 10 minutes.
5. End of Recipe & system was left for natural cooling.

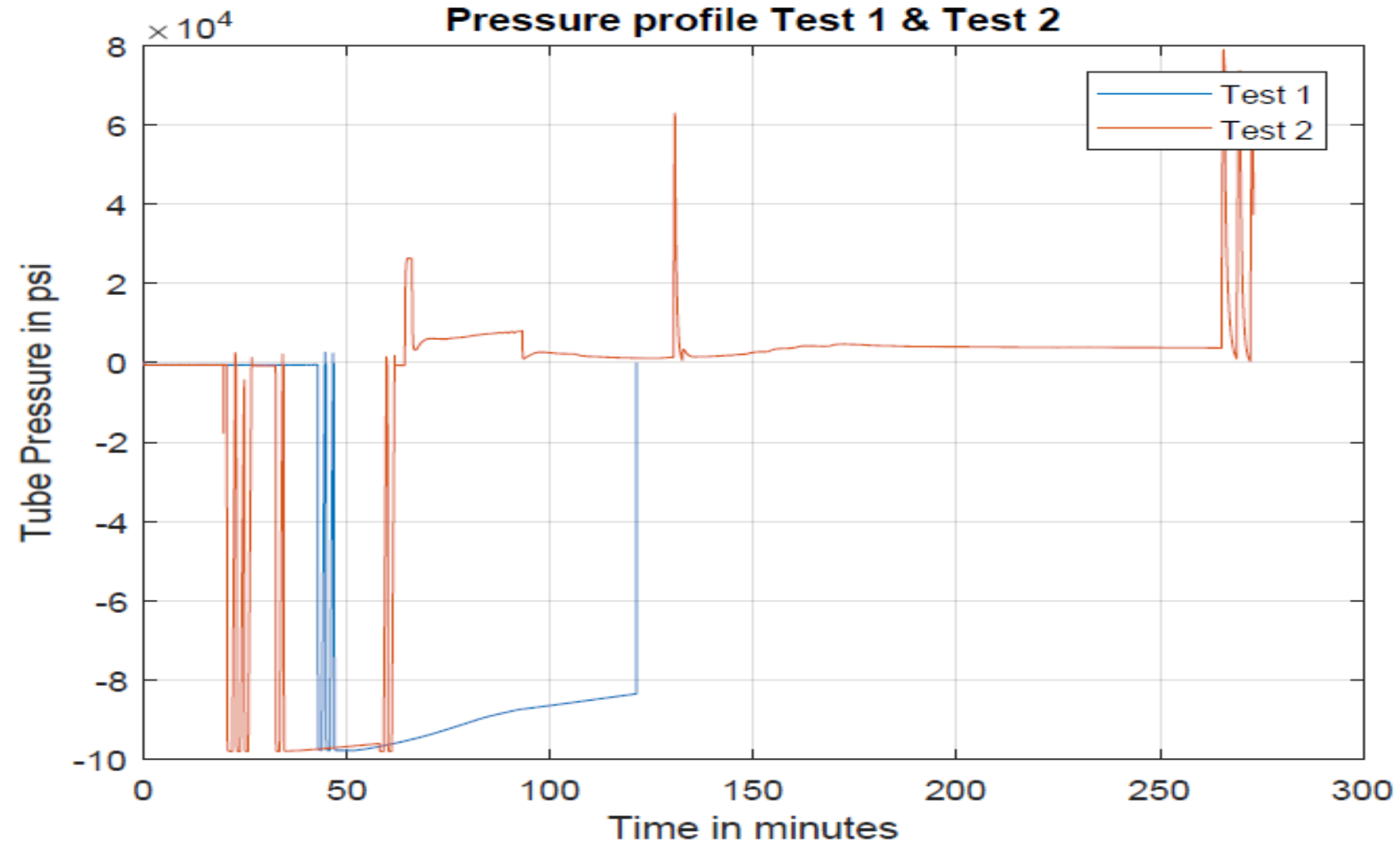
Test 2

1. Evacuation and flush
2. Evacuation for 1 minute
3. Flush for 5 minutes to make a pressure more than atm then gas flow was reduced to 25 sccm and purge valve was opened.
4. All zones were heated to 700 C for 30 minutes and held for 10 minutes with standard gas flow of 25 sccm.
5. System was left for cooling with a gas flow of 25 sccm.

Temperature Profile Test 1 & Test 2



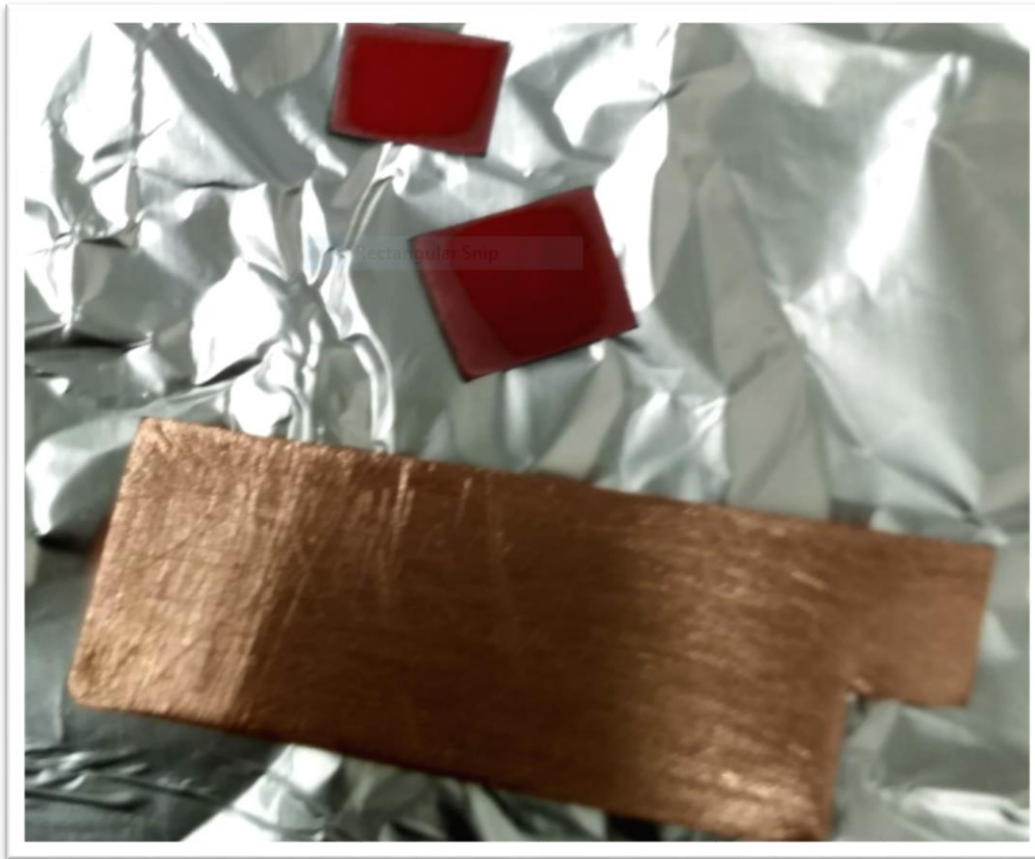
Pressure Profile Test 1 & Test 2



Observations

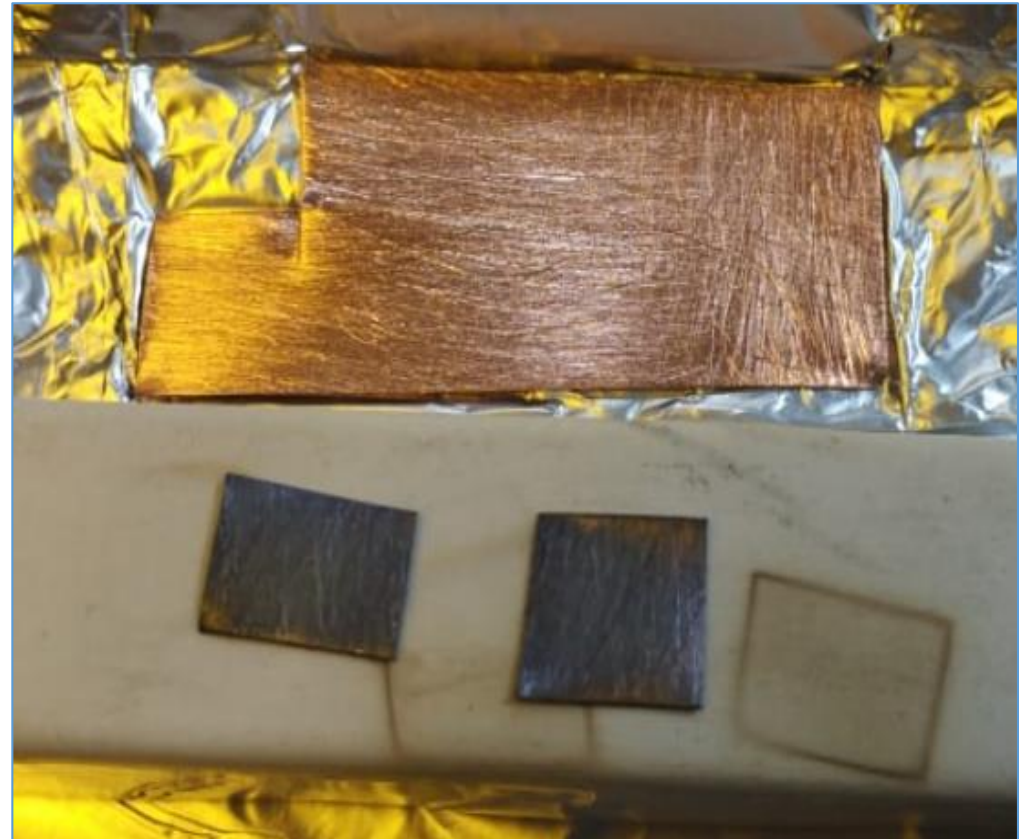
Test 1 (Under Vacuum)

Reddish Brown [Cu(I)O]

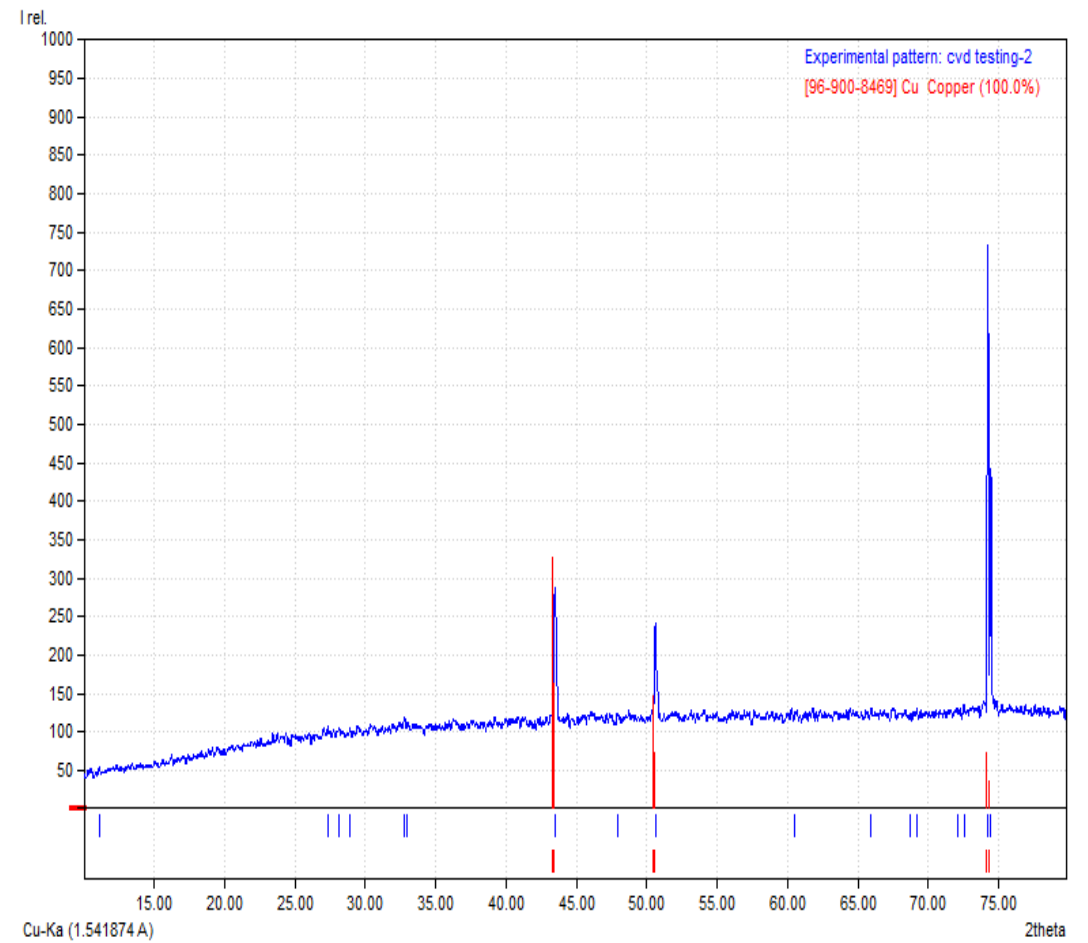
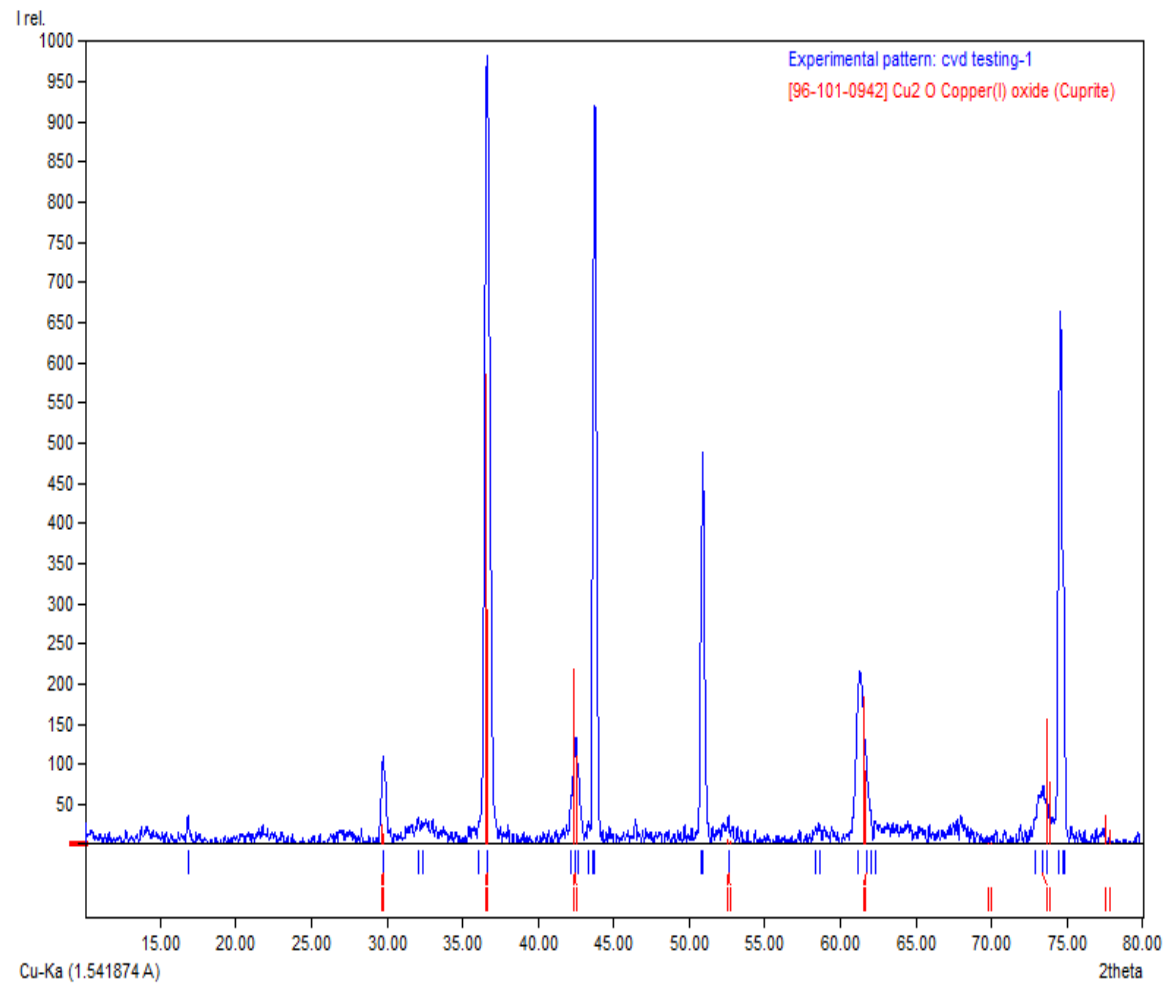


Test 2 (Nitrogenous Environment)

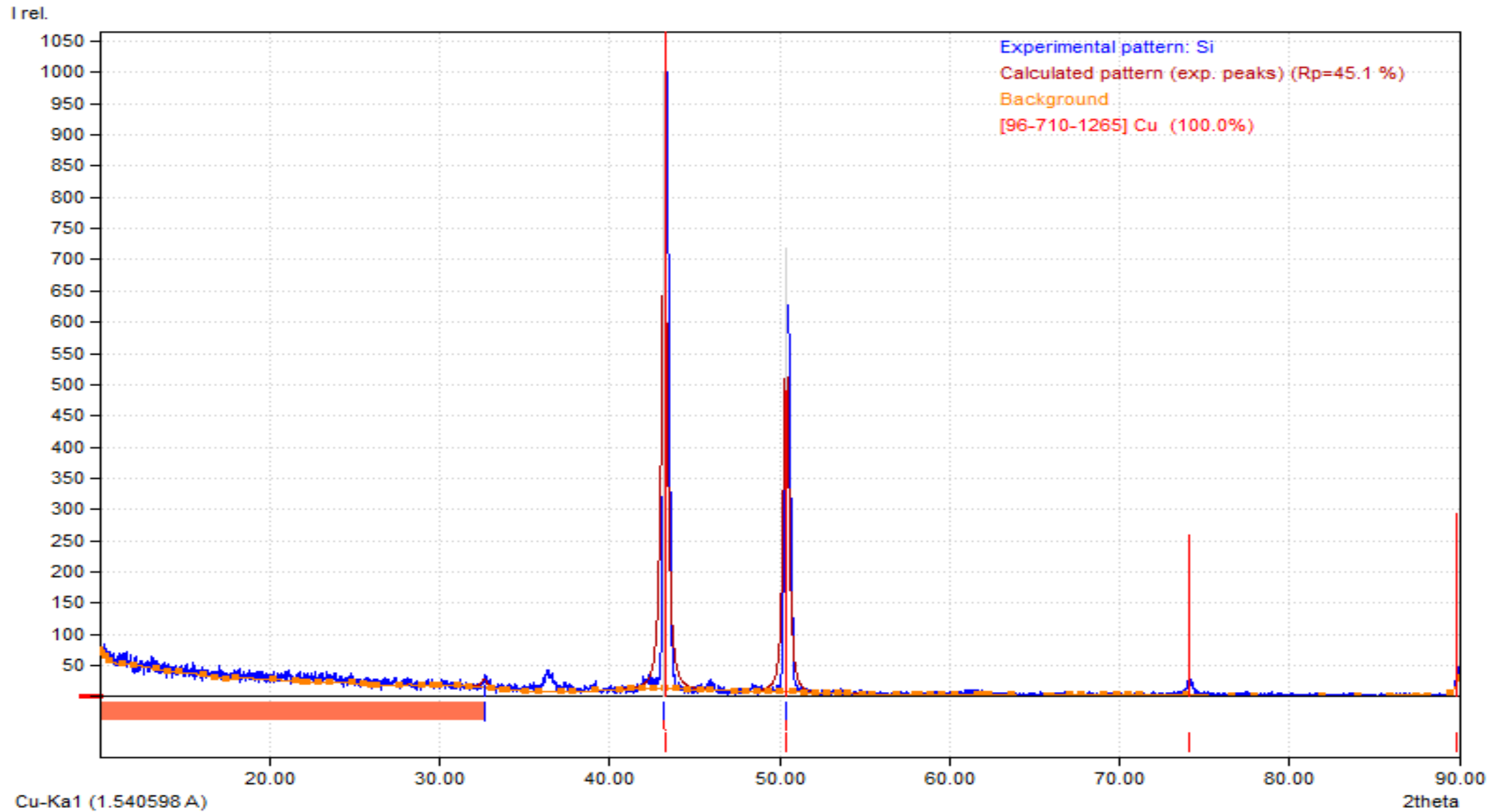
Grey [Cu]



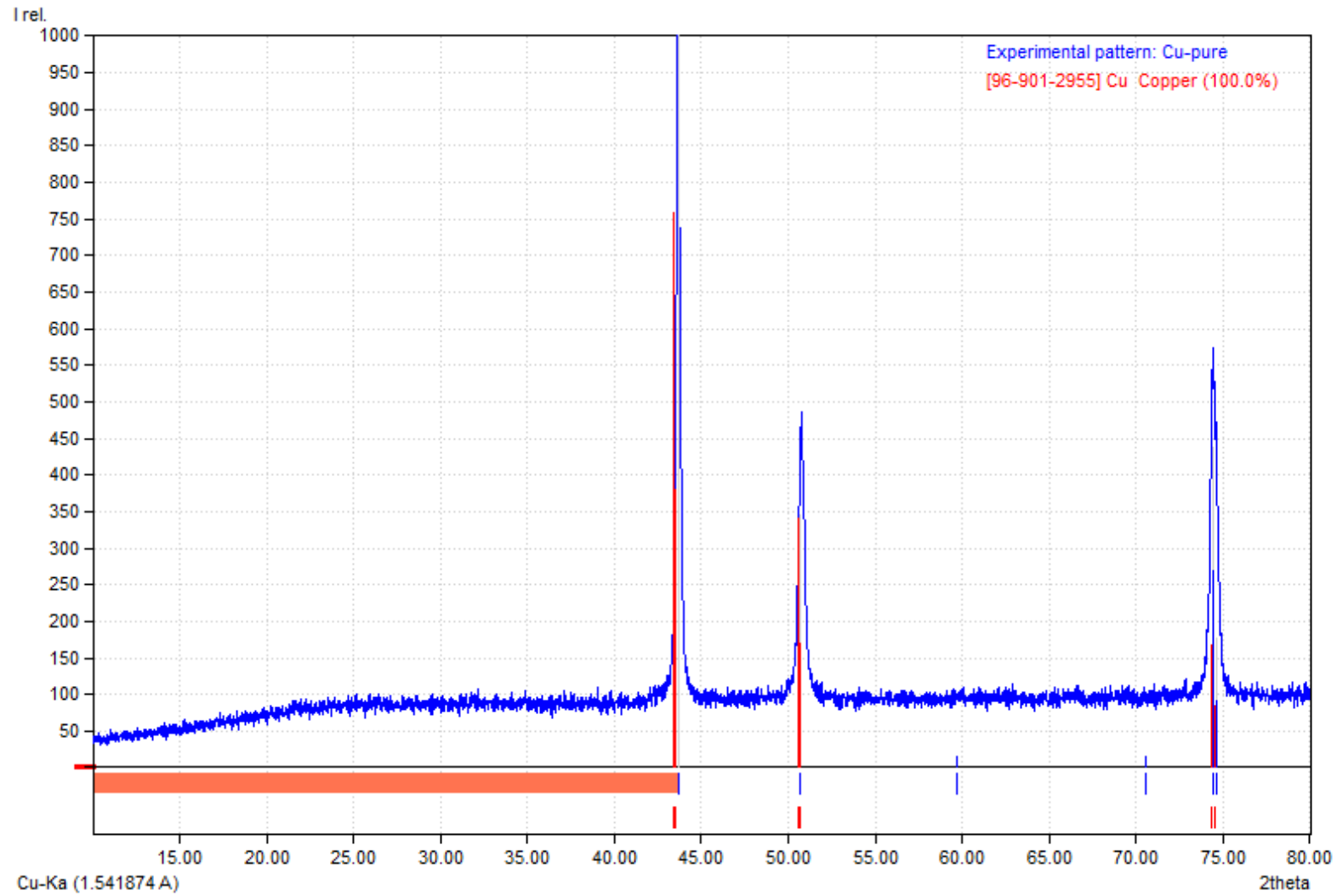
XRD



Sample 2: Thin film XRD



Pure Copper



XRD ALL

