Stat 235

Lab 1

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Lab EL12

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1 Histograms

1.a Histograms of Thickness: 400°C, 600°C, and 800°C

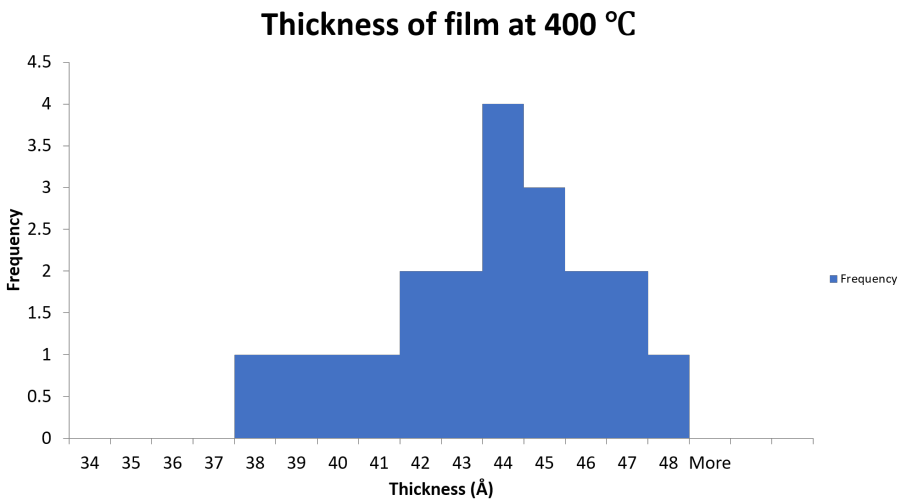

Figure 1: INSERT CAPTION HERE

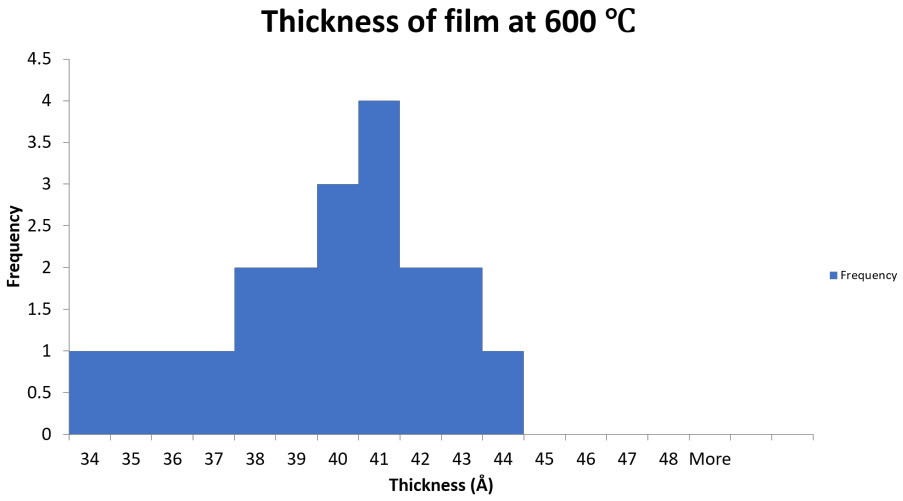

Figure 2: INSERT CAPTION HERE

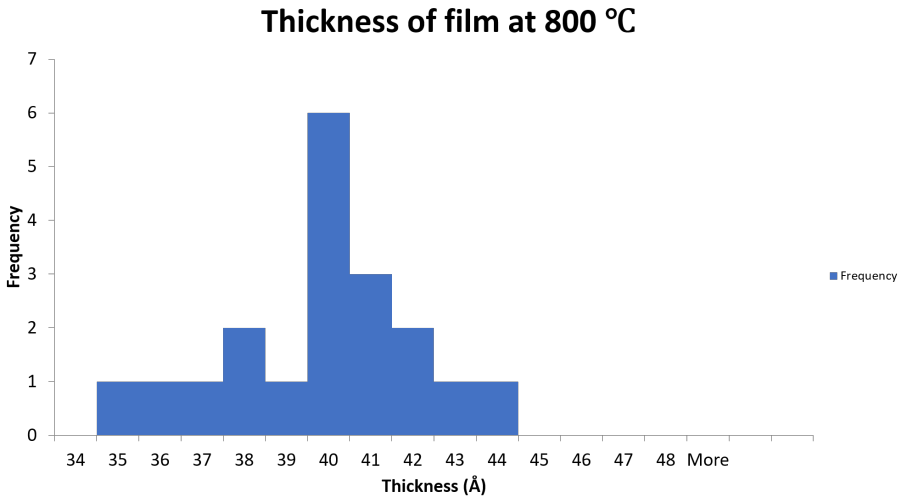

Figure 3: INSERT CAPTION HERE

1.b Shapes

All the histograms above appear to be slightly left-skewed. By simply looking at the histograms, only one peak is observable in each of them, therefore all the histograms above are single-peaked There don't seem to be any obvious outliers judging from the 3 histograms above. At first glance, the one data point that has a thickness of 33 at 800 may seem like a potential outlier, but when looking at the bigger picture in the histogram, we can see that it (in bin 34) is not visually far away from the bulk of the data

1.c Centers and Spreads

The first histogram has a center around 44, and a spread of 10. The second histogram has a center about 42 and a spread of 10 as well. The third histogram has a center around 40, and also has a spread of 10. For all 3 histograms, the means are slightly less than their respective medians.

1.d Effect of Temperature on Thickness

It would appear that increased temperature results in an overall lower average of thickness of the films.

2 Summary Statistics

2.a Mean, Std. Deviation, Variance for each Temperature Level

Statistics	Temperature Levels (°C)		
	400	600	800
Mean	0	0	0
Std. Deviation	0	0	0
Variance	0	0	0

Table 1: My caption

2.b Quartiles

Statistics	Temperature Levels (°C)		
	400	600	800
Lower Quartile	0	0	0
Median	0	0	0
Upper Quartile	0	0	0
IQR	0	0	0

Table 2: My caption

Wait check this The 400 one doesn't seem to match, but for 600 and 800 , the positions of the quartiles seem to support the conclusion that these histograms are left-skewed, since Q1 is further from the median than Q3 is.

2.c Mean & Std. Deviation at each pressure value

Pressure	Mean	Std. Deviation	Mean Change
0	0	0	0
Average			0

Table 3: My caption

3 Relationships

3.a Thickness vs. Temperature

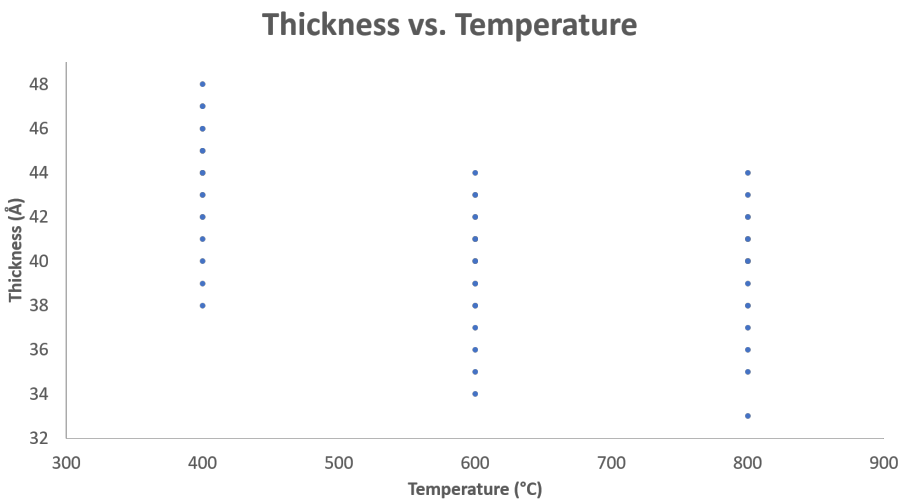

Figure 4: INSERT CAPTION HERE

3.b Thickness vs. Pressure by Temperature

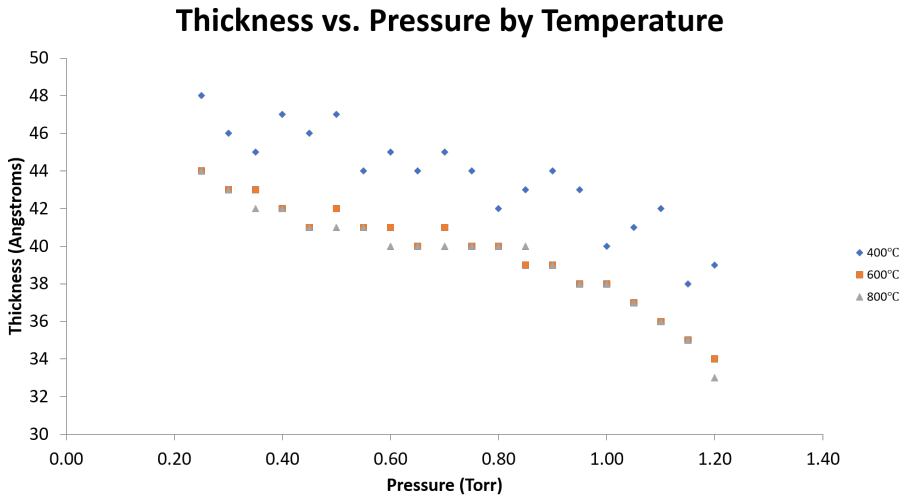

Figure 5: INSERT CAPTION HERE

3.c Relationship Between Thickness and Pressure for each Temperature Level

4 How should the temperature and pressure be selected to produce the thinnest possible film for the LPCVD process?