Assignment 2: Plotting in Excel

Instructions:

1. Format chart area with border colour white colour.
2. Format plot area with border colour black and width size 1.5 pt. for all the graph.
3. Use Times New Roman font in 'Bold' format for Axis Titles and Legends with size 8 pt.
4. Maintain the line width in the graph at 1.5 pt. for the line graph.
5. Enable tick major tick mark inside, in all the graph and minor tick mark in only specified place.
6. Insert legends in all the graph.
7. Maintain marker size at 5pt. and marker should be filled with same colour as marker border.
8. Do not give title of the graph
9. Copy the image from excel and paste the graph in word.

Questions

1. Table 1 shows the estimation of the Nusselt number against inlet fluid velocity across the microchannel for an electronic chip heat sink with TiO_2/water nanofluid and distilled water. Plot the line graph with markers. ***Follow the instructions given above for the sizing. Use filled square marker for DI water (red color), circle for f =0.1% (dark blue color), empty triangle for f =0.2% (black boarder) and plus for f =0.3%. (black color). Use different dash type lines for each case. Axis Title: Inlet fluid velocity (m/s) in x axis and Nusselt Number (Nu) in y axis. Use the fraction "f" mentioned in table to represent the legends e.g. f = 0.1 %. Set the minimum bounds in axis options in x-axis to be 0 and maximum to 0.12; set the major units in axis options as 0.02 and minor units as 0.01. Set the minimum bounds in axis options in y-axis to be 0 and maximum to 45; set the major units in axis options as 10 and minor units as 5. Use major and minor tick marks inside.***

Table 1: Nusselt number variation against inlet fluid velocity for different concentration of TiO2

Inlet fluid velocity (m/s)	*DI Water [f=0%]*	*TiO_2 [f=0.1%]*	*TiO_2 [f=0.2%]*	*TiO_2 [f=0.3%]*
0.02	**12**	**15**	**16.5**	**19**
0.04	**18**	**20**	**21.8**	**24**
0.06	**22.5**	**24**	**25.7**	**30**
0.08	**25**	**27.5**	**30**	**35**
0.1	**27.5**	**29.5**	**31**	**40**

2. **Table 2** shows the different trails of particle velocity in microchannel for each minute in time interval. **Calculate the average velocity for each minute and plot the velocity with respect to time in scattered plot with error bar.** ***Use filled square marker with red color and black boarder. The error bar color should be in black color with 1.5pt. Axis Title: Time (min) in x axis and Average velocity (V_{avg}) in Y axis. Use V_{avg} to represent the data in legend. Set the minimum bounds in axis options in x-axis to be 0 and maximum to 11; set the major units in axis options as 1 and minor units as 0.5.***

Use major and minor tick marks inside. Keep the defaults value for bounds and units in y-axis.

Table 2: Velocity of droplet with respect to time

Time (min)	V1 (mm/s)	V2 (mm/s)	V3 (mm/s)
1	3.8	4.53	3.9
2	3.35	3.1	3.2
3	4.2	4.5	4.7
4	7.15	6.46	7.5
5	4.32	3.18	4.33
6	6.75	6.25	6.7
7	4.1	4	4
8	5.83	4.8	4.7
9	6.89	5.05	5.3
10	7.2	7.17	7.23

3. **Table 3** shows the interface displacement with respect to time for three trail runs of paper. **Find the average displacement (x) for each time interval and plot the scattered graph with error bar. Fit the resultant curve with power law and display the equation with R^2 value, using trendline option.** ***Use filled square marker with red color and black boarder. The error bar color should be in black color with 1.5pt. Axis Title: Time (min) in x axis and Average displacement (X_{avg}) in Y axis. Use X_{avg} to represent the data in legend. The trendline should have the dash type "square dot" with 1.5 pt line width and black color. Set the minimum bounds in axis options in x-axis to be 0 and maximum to 16; set the major units in axis options as 1 and minor units as 0.5. Use major and minor tick marks inside. Keep the defaults value for bounds and units in y-axis.***
4. **Table 4** shows, number of files got approval in every hour for three working days in week. **Plot the bar chart in stacked format with respect to working hours (x-axis). Represent the stacked data for three days in different color.** ***Axis Title: Working Hours (Hrs.) in x axis and No. of files approval in y-axis. Use the days mentioned in table to represent the legend. Use the major tick mark inside and axis position as on tick marks.***
5. **Refer Table 4:** and Calculate the average number of files got approval during each mentioned working hours and **plot the bar chart with error bar**. ***Axis Title: Working Hours (Hrs.) in x axis and Avg. number of approvals. The error bar color should be in black color with 1.5pt. Use the major tick mark inside and axis position as on tick marks.***

Table 3: Interface displacement for three different grade paper

t (min)	X1 (cm)	X2 (cm)	X3 (cm)
1	0.4	0.7	0.2
2	0.75	1.15	0.3
3	0.85	1.32	0.45
4	1.03	1.5	0.52
5	1.12	1.63	0.58
6	1.24	1.8	0.61
7	1.34	1.93	0.66
8	1.42	2.05	0.69
9	1.51	2.16	0.73
10	1.57	2.27	0.75
11	1.66	2.36	0.79
12	1.75	2.47	0.83
13	1.8	2.52	0.84
14	1.88	2.63	0.86
15	1.95	2.71	0.88

Table 4: Working hours versus efficient file approve for different working days.

Working Hours (Hrs.)	Monday	Wednesday	Friday
10	8.3	8	10
12	2	6.2	9
14	3.1	10	7
16	6	5	6
18	1	7	5