

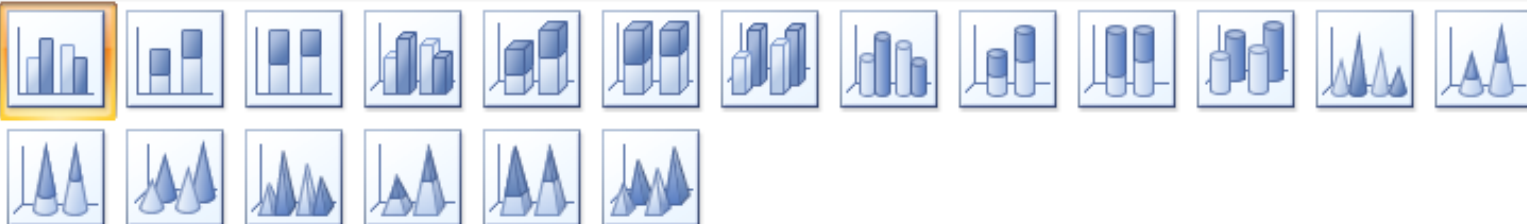
Plotting Data with Microsoft Excel

Description: We will focus on Excel features for graphs and charts. We will discuss multiple axes, formatting data, choosing chart type, adding notes and images, and customizing your charts. We will discuss how to export charts to other formats including Word, PowerPoint and PDF.

Charts allow you to present information contained in the worksheet in a graphic format. Excel offers many types of charts including : Column, Line, Pie, Bar, Area, Scatter and more. To view the charts available click the Insert Tab on the Ribbon.

- Templates
- Column
- Line
- Pie
- Bar
- Area
- XY (Scatter)
- Stock
- Surface
- Doughnut
- Bubble
- Radar

Column



Line



Pie



Bar



Area



XY (Scatter)



Stock



Manage Templates...

Set as Default Chart

OK

Cancel

n the
ng

What is an XY or Scatter Plot?

An XY or scatter plot either shows the relationships among the numeric values in several data series *or plots two groups of numbers as a single series of XY* coordinates. It can show uneven intervals or clusters of data and is commonly used for scientific data.

How to Create a Scatter Plot

In this example we plot two series values in a scatter plot as a single group of XY coordinates. To create this scatter plot first arrange the data to plot in rows or columns. In this example, the data is arranged in rows.

1- Insert the data in the workbook as shown below:

| Exp. | Press(bara) | Time ads (s). | Q purg (L/min) | Qprod(L/min) | O2% |
|------|-------------|---------------|----------------|--------------|------|
| 1 | 2 | 20 | 1 | 0.1 | 58.2 |
| 2 | 2 | 20 | 1 | 0.5 | 54.2 |
| 3 | 2 | 20 | 1 | 0.75 | 52.3 |
| 4 | 2 | 20 | 1 | 1 | 50.5 |
| 5 | 3 | 20 | 1 | 0.1 | 63.1 |
| 6 | 3 | 20 | 1 | 0.5 | 61.3 |
| 7 | 3 | 20 | 1 | 0.75 | 57.6 |
| 8 | 3 | 20 | 1 | 1 | 54.3 |
| 9 | 4 | 20 | 1 | 0.1 | 66.4 |
| 10 | 4 | 20 | 1 | 0.5 | 64.3 |

2- Click insert tab from ribbon charts:

Microsoft Excel - Book1

إدراج الصفحة الرئيسية

مخططات

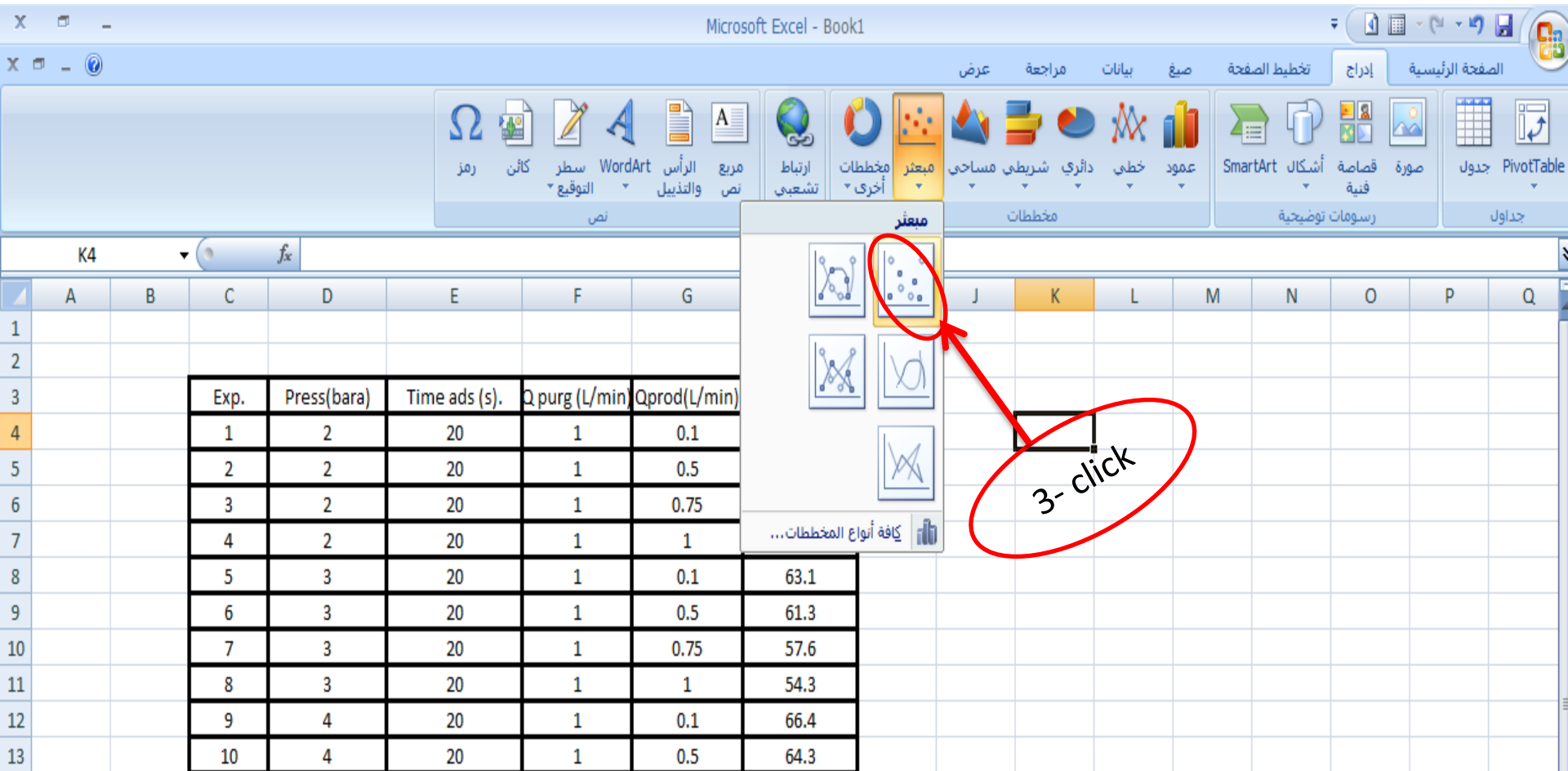
مخططات أخرى

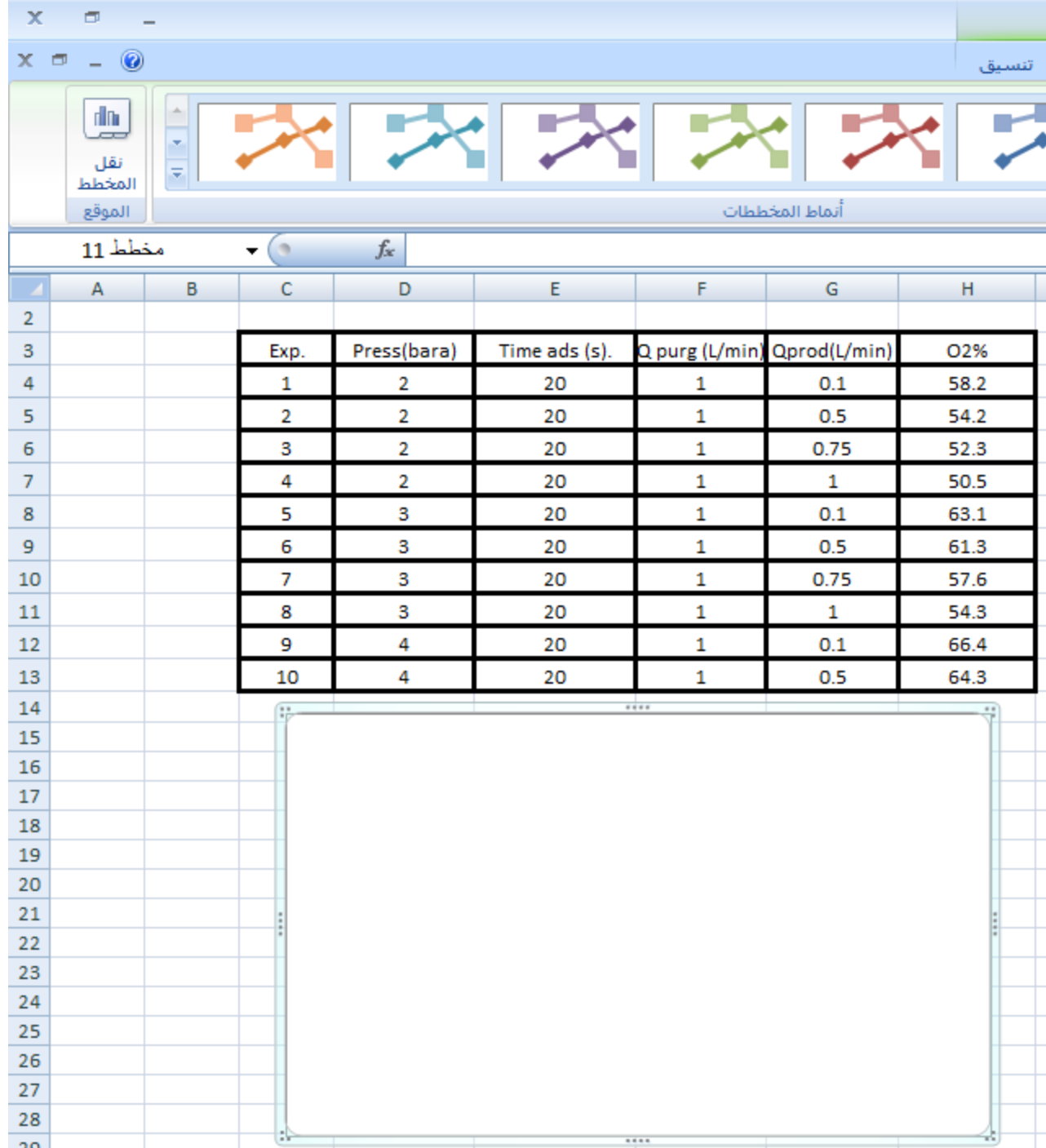
مخططات

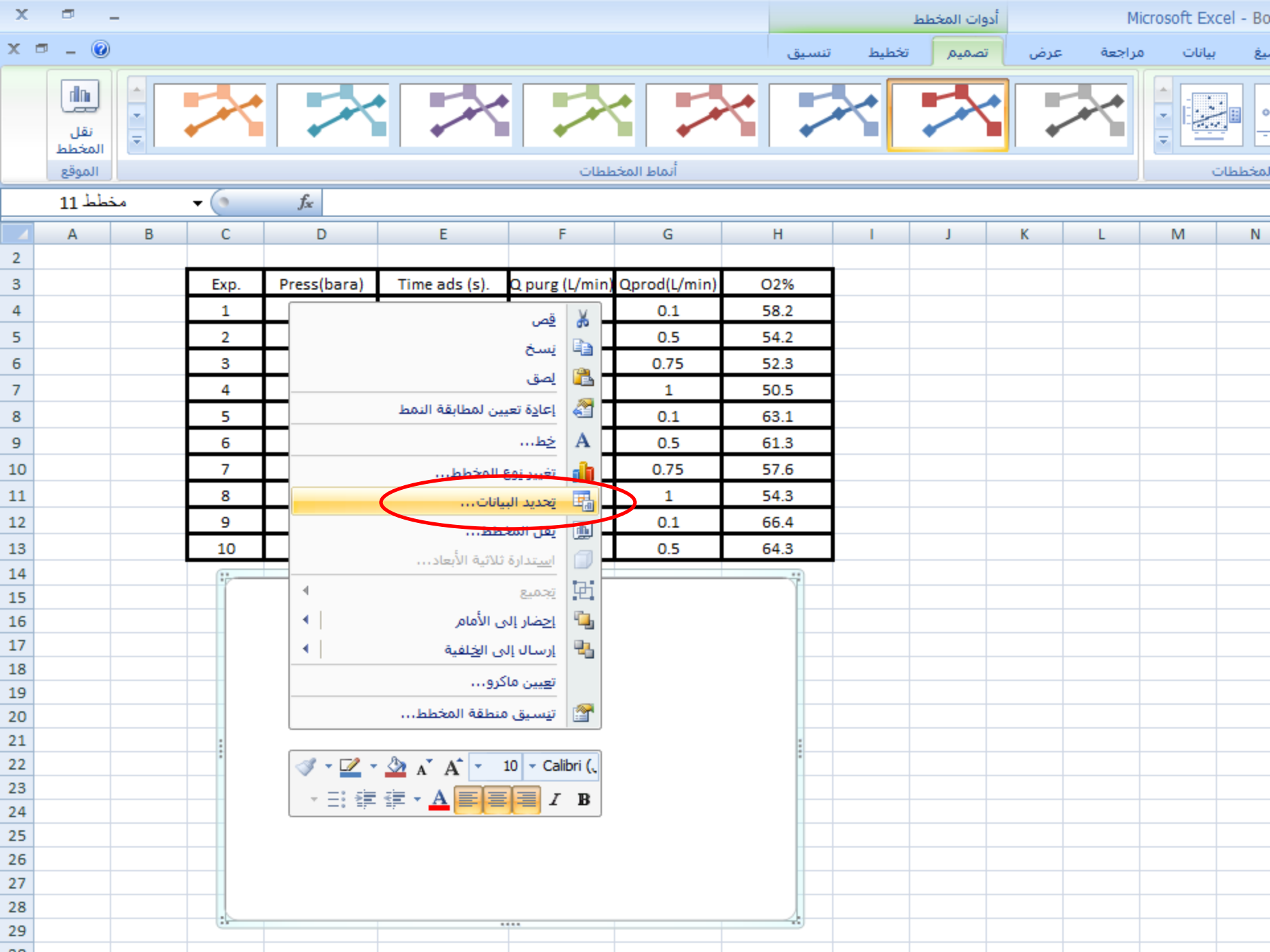
1- click

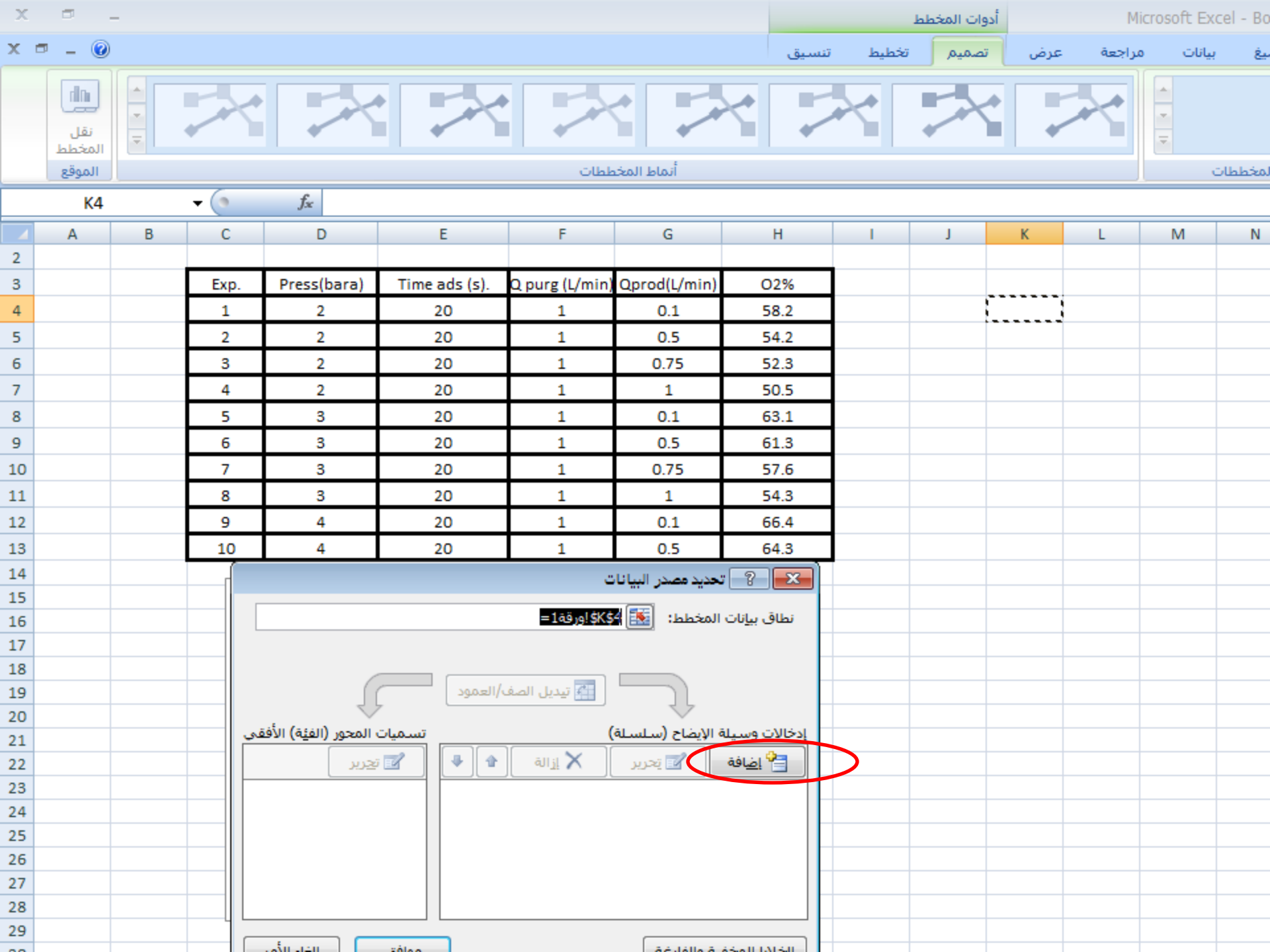
2- click

| Exp. | Press(bara) | Time ads (s). | Q purg (L/min) | Qprod(L/min) | O2% |
|------|-------------|---------------|----------------|--------------|------|
| 1 | 2 | 20 | 1 | 0.1 | 58.2 |
| 2 | 2 | 20 | 1 | 0.5 | 54.2 |
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| 5 | 3 | 20 | 1 | 0.1 | 63.1 |
| 6 | 3 | 20 | 1 | 0.5 | 61.3 |
| 7 | 3 | 20 | 1 | 0.75 | 57.6 |
| 8 | 3 | 20 | 1 | 1 | 54.3 |
| 9 | 4 | 20 | 1 | 0.1 | 66.4 |
| 10 | 4 | 20 | 1 | 0.5 | 64.3 |











نقل
المخطط
الموقع

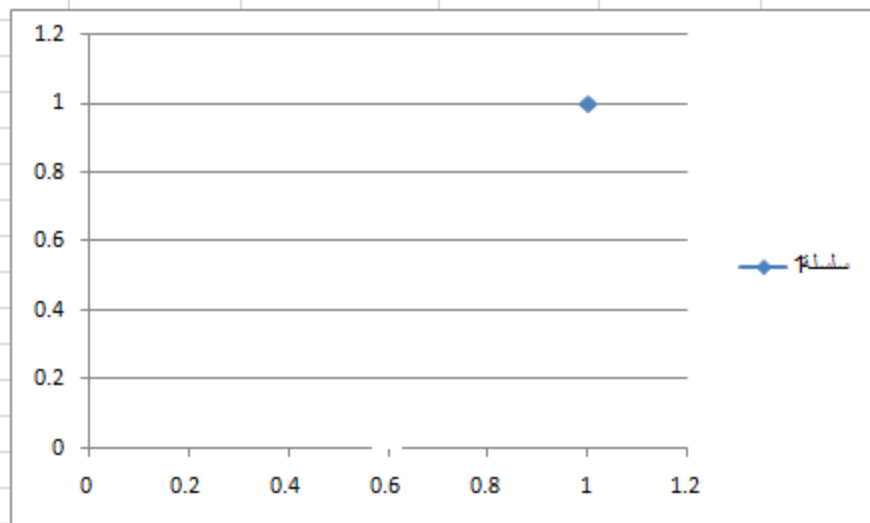
أنماط المخططات

أنماط المخططات

K4

fx

| Exp. | Press(bara) | Time ads (s). | Q purg (L/min) | Qprod(L/min) | O2% |
|------|-------------|---------------|----------------|--------------|------|
| 1 | 2 | 20 | 1 | 0.1 | 58.2 |
| 2 | 2 | 20 | 1 | 0.5 | 54.2 |
| 3 | 2 | 20 | 1 | 0.75 | 52.3 |
| 4 | 2 | 20 | 1 | 1 | 50.5 |
| 5 | 3 | 20 | 1 | 0.1 | 63.1 |
| 6 | 3 | 20 | 1 | 0.5 | 61.3 |
| 7 | 3 | 20 | 1 | 0.75 | 57.6 |
| 8 | 3 | 20 | 1 | 1 | 54.3 |
| 9 | 4 | 20 | 1 | 0.1 | 66.4 |
| 10 | 4 | 20 | 1 | 0.5 | 64.3 |



تحرير سلسلة

اسم السلسلة:

تحديد نطاق

قيم سلسلة س:

تحديد نطاق

قيم سلسلة ص:

1 =

إلغاء الأمر موافق

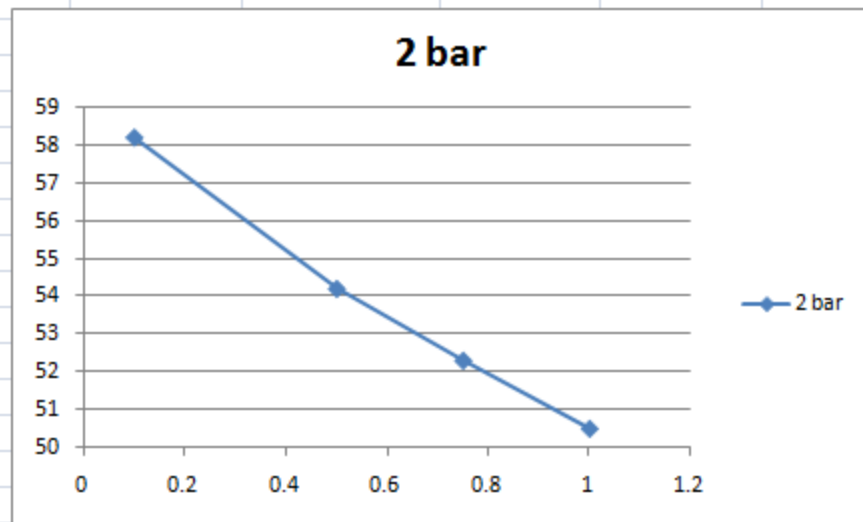
ورقة 1

ورقة 2

ورقة 3

90%

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|----|---|---|------|-------------|---------------|----------------|--------------|------|---|---|---|---|---|---|
| 2 | | | | | | | | | | | | | | |
| 3 | | | Exp. | Press(bara) | Time ads (s.) | Q purg (L/min) | Qprod(L/min) | Q2% | | | | | | |
| 4 | | | 1 | 2 | 20 | 1 | 0.1 | 58.2 | | | | | | |
| 5 | | | 2 | 2 | 20 | 1 | 0.5 | 54.2 | | | | | | |
| 6 | | | 3 | 2 | 20 | 1 | 0.75 | 52.3 | | | | | | |
| 7 | | | 4 | 2 | 20 | 1 | 1 | 50.5 | | | | | | |
| 8 | | | 5 | 3 | 20 | 1 | 0.1 | 63.1 | | | | | | |
| 9 | | | 6 | 3 | 20 | 1 | 0.5 | 61.3 | | | | | | |
| 10 | | | 7 | 3 | 20 | 1 | 0.75 | 57.6 | | | | | | |
| 11 | | | 8 | 3 | 20 | 1 | 1 | 54.3 | | | | | | |
| 12 | | | 9 | 4 | 20 | 1 | 0.1 | 66.4 | | | | | | |
| 13 | | | 10 | 4 | 20 | 1 | 0.5 | 64.3 | | | | | | |



تحرير سلسلة

bar 2 = 2 bar

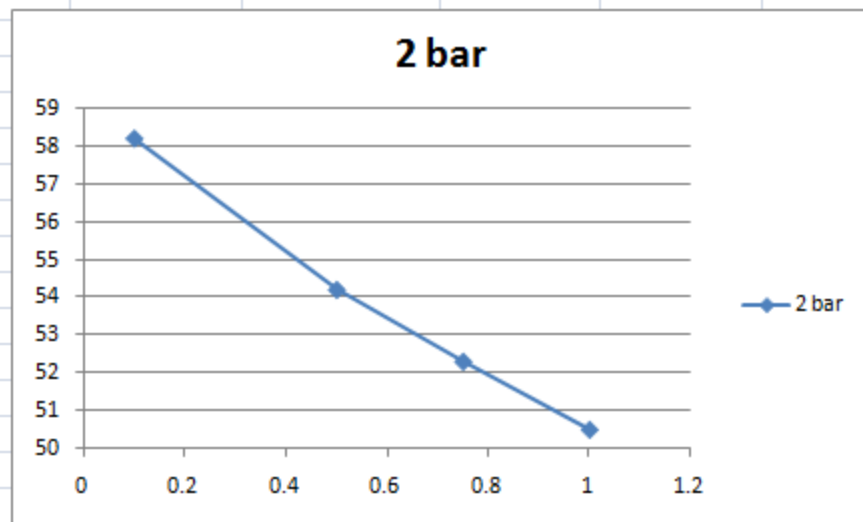
...0.75 ,0.5 ,0.1 = =1 ورقة!\$G

...52 ,54.2 ,58.2 = =1 ورقة!\$H

إلغاء الأمر موافق

Click

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|----|---|---|------|-------------|---------------|----------------|--------------|------|---|---|---|---|---|---|
| 2 | | | | | | | | | | | | | | |
| 3 | | | Exp. | Press(bara) | Time ads (s.) | Q purg (L/min) | Qprod(L/min) | O2% | | | | | | |
| 4 | | | 1 | 2 | 20 | 1 | 0.1 | 58.2 | | | | | | |
| 5 | | | 2 | 2 | 20 | 1 | 0.5 | 54.2 | | | | | | |
| 6 | | | 3 | 2 | 20 | 1 | 0.75 | 52.3 | | | | | | |
| 7 | | | 4 | 2 | 20 | 1 | 1 | 50.5 | | | | | | |
| 8 | | | 5 | 3 | 20 | 1 | 0.1 | 63.1 | | | | | | |
| 9 | | | 6 | 3 | 20 | 1 | 0.5 | 61.3 | | | | | | |
| 10 | | | 7 | 3 | 20 | 1 | 0.75 | 57.6 | | | | | | |
| 11 | | | 8 | 3 | 20 | 1 | 1 | 54.3 | | | | | | |
| 12 | | | 9 | 4 | 20 | 1 | 0.1 | 66.4 | | | | | | |
| 13 | | | 10 | 4 | 20 | 1 | 0.5 | 64.3 | | | | | | |



بيانات

=G\$4:H\$7 ورقة 1

تدوير الصف/العمود

تسميات المحاور (الغاية) الأفقي

تحرير

0.1

0.5

0.75

1

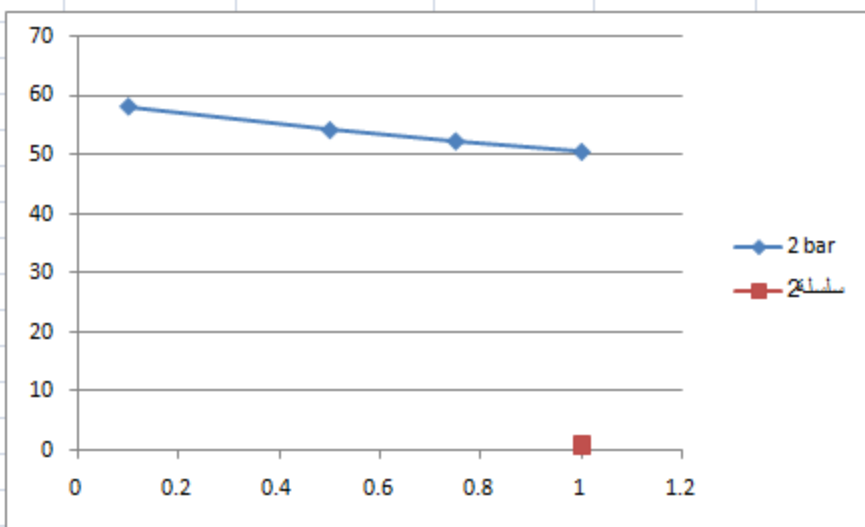
Click to add curve

إلغاء الأمر موافق

Click to close the

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|----|---|---|------|------------|--------------|----------------|--------------|------|---|---|---|---|---|---|
| 2 | | | | | | | | | | | | | | |
| 3 | | | Exp. | Press(bar) | Time ads (s) | Q purg (L/min) | Qprod(L/min) | Q2% | | | | | | |
| 4 | | | 1 | 2 | 20 | 1 | 0.1 | 58.2 | | | | | | |
| 5 | | | 2 | 2 | 20 | 1 | 0.5 | 54.2 | | | | | | |
| 6 | | | 3 | 2 | 20 | 1 | 0.75 | 52.3 | | | | | | |
| 7 | | | 4 | 2 | 20 | 1 | 1 | 50.5 | | | | | | |
| 8 | | | 5 | 3 | 20 | 1 | 0.1 | 63.1 | | | | | | |
| 9 | | | 6 | 3 | 20 | 1 | 0.5 | 61.3 | | | | | | |
| 10 | | | 7 | 3 | 20 | 1 | 0.75 | 57.6 | | | | | | |
| 11 | | | 8 | 3 | 20 | 1 | 1 | 54.3 | | | | | | |
| 12 | | | 9 | 4 | 20 | 1 | 0.1 | 66.4 | | | | | | |
| 13 | | | 10 | 4 | 20 | 1 | 0.5 | 64.3 | | | | | | |

To add new curve
the figure



تحرير سلسلة

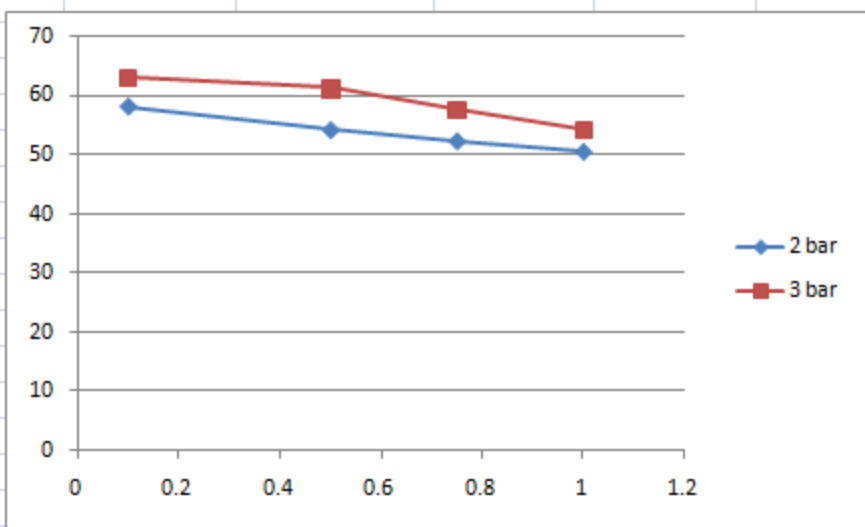
تحدد نطاق

تحدد نطاق

1 = {1}

إلغاء الأمر موافق

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|----|---|---|------|------------|---------------|----------------|--------------|------|---|---|---|---|---|---|
| 2 | | | | | | | | | | | | | | |
| 3 | | | Exp. | Press(bar) | Time ads (s.) | Q purg (L/min) | Qprod(L/min) | O2% | | | | | | |
| 4 | | | 1 | 2 | 20 | 1 | 0.1 | 58.2 | | | | | | |
| 5 | | | 2 | 2 | 20 | 1 | 0.5 | 54.2 | | | | | | |
| 6 | | | 3 | 2 | 20 | 1 | 0.75 | 52.3 | | | | | | |
| 7 | | | 4 | 2 | 20 | 1 | 1 | 50.5 | | | | | | |
| 8 | | | 5 | 3 | 20 | 1 | 0.1 | 63.1 | | | | | | |
| 9 | | | 6 | 3 | 20 | 1 | 0.5 | 61.3 | | | | | | |
| 10 | | | 7 | 3 | 20 | 1 | 0.75 | 57.6 | | | | | | |
| 11 | | | 8 | 3 | 20 | 1 | 1 | 54.3 | | | | | | |
| 12 | | | 9 | 4 | 20 | 1 | 0.1 | 66.4 | | | | | | |
| 13 | | | 10 | 4 | 20 | 1 | 0.5 | 64.3 | | | | | | |



تحرير سلسلة

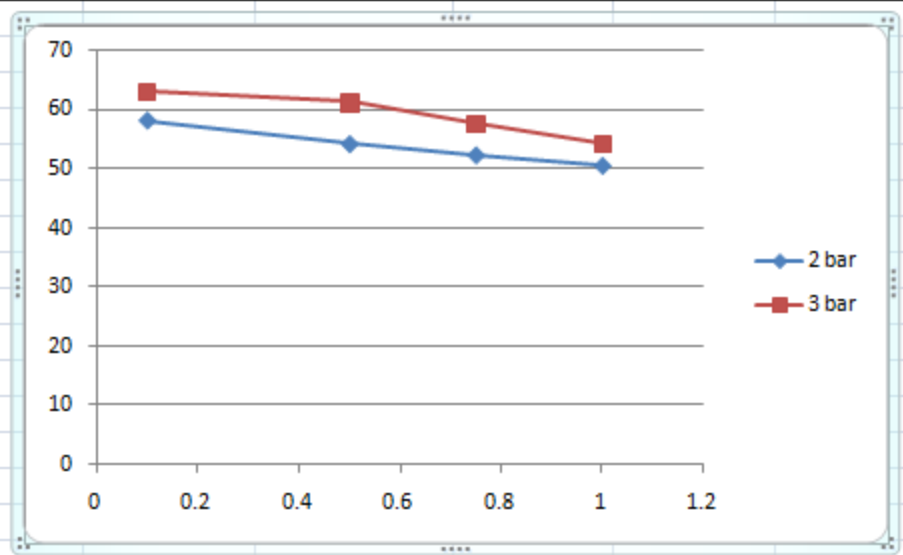
bar 3 = 3 bar

...0.75 ,0.5 ,0.1 = =1 ورقة!\$G\$

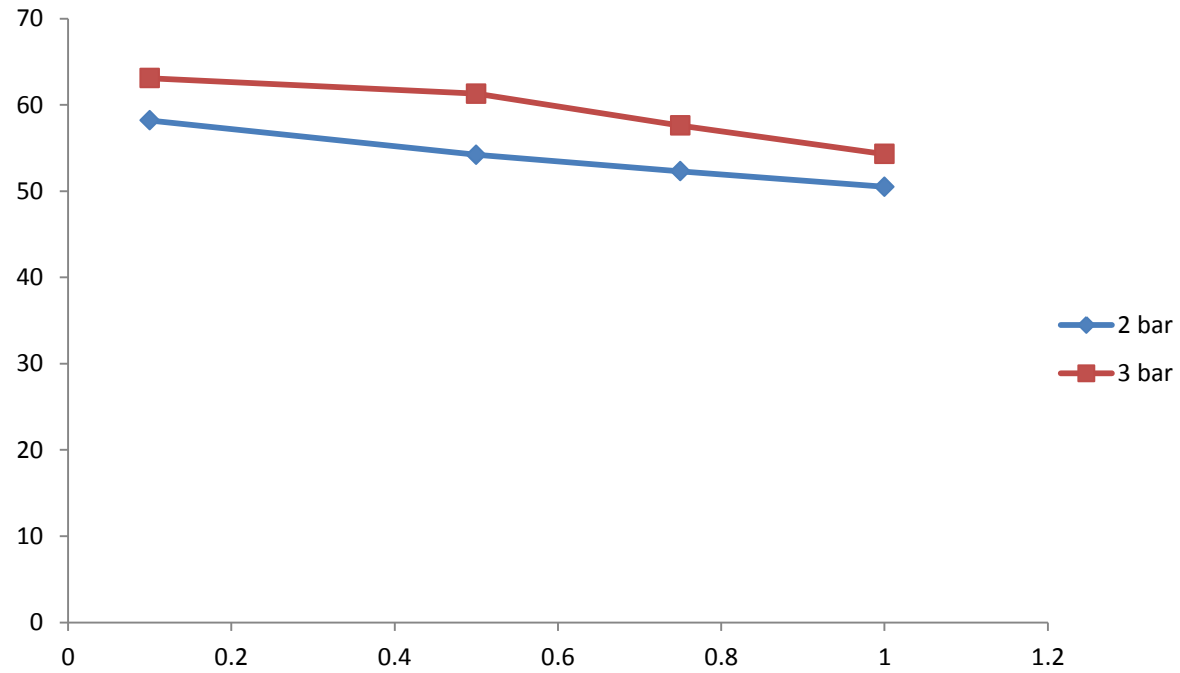
...57 ,61.3 ,63.1 = =1 ورقة!\$H\$

إلغاء الأمر موافق

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|----|---|---|------|------------|--------------|----------------|--------------|------|---|---|---|---|---|---|
| 2 | | | | | | | | | | | | | | |
| 3 | | | Exp. | Press(bar) | Time ads (s) | Q purg (L/min) | Qprod(L/min) | O2% | | | | | | |
| 4 | | | 1 | 2 | 20 | 1 | 0.1 | 58.2 | | | | | | |
| 5 | | | 2 | 2 | 20 | 1 | 0.5 | 54.2 | | | | | | |
| 6 | | | 3 | 2 | 20 | 1 | 0.75 | 52.3 | | | | | | |
| 7 | | | 4 | 2 | 20 | 1 | 1 | 50.5 | | | | | | |
| 8 | | | 5 | 3 | 20 | 1 | 0.1 | 63.1 | | | | | | |
| 9 | | | 6 | 3 | 20 | 1 | 0.5 | 61.3 | | | | | | |
| 10 | | | 7 | 3 | 20 | 1 | 0.75 | 57.6 | | | | | | |
| 11 | | | 8 | 3 | 20 | 1 | 1 | 54.3 | | | | | | |
| 12 | | | 9 | 4 | 20 | 1 | 0.1 | 66.4 | | | | | | |
| 13 | | | 10 | 4 | 20 | 1 | 0.5 | 64.3 | | | | | | |

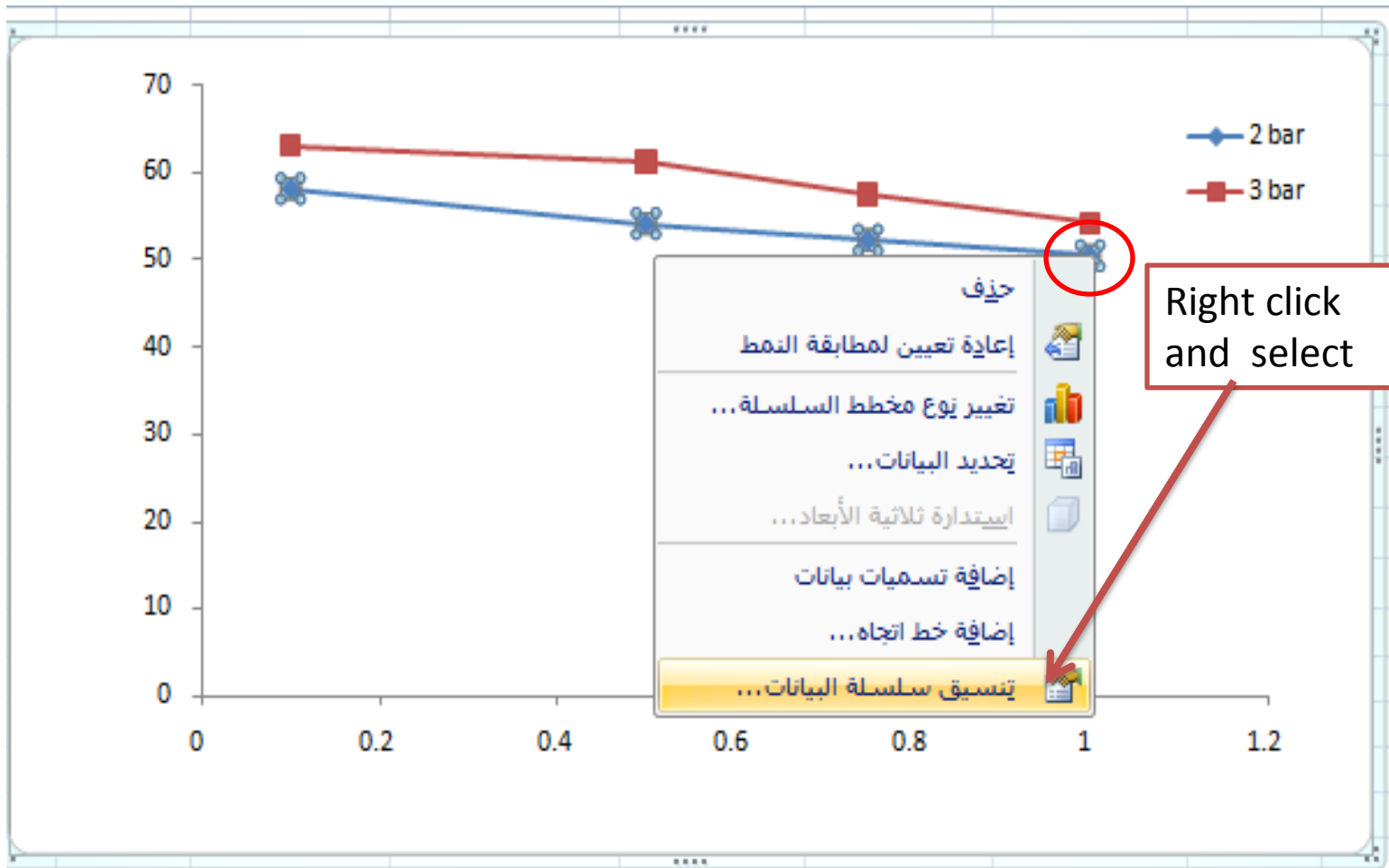


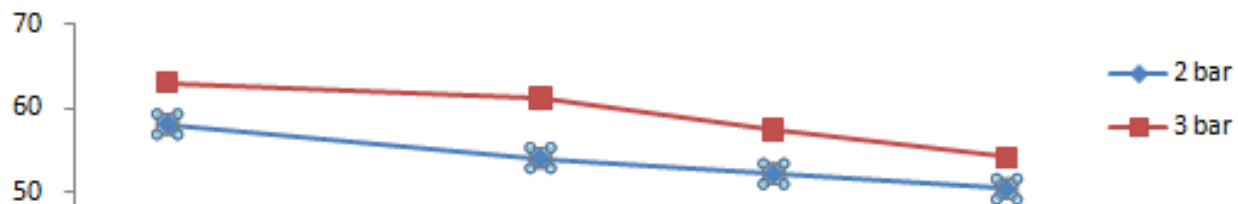
Format the figure



Format the figure

1- format the curve





تنسيق سلسلة البيانات

خيارات السلسلة

تشغيل سلسلة الرسم

المحور الأساسي ☒

المحور الثانوي ☐

خيارات السلسلة

خيارات العلامة

تعبئة العلامات

لون الخط

نمط الخط

منطقة المخطط

نمط خط علامات

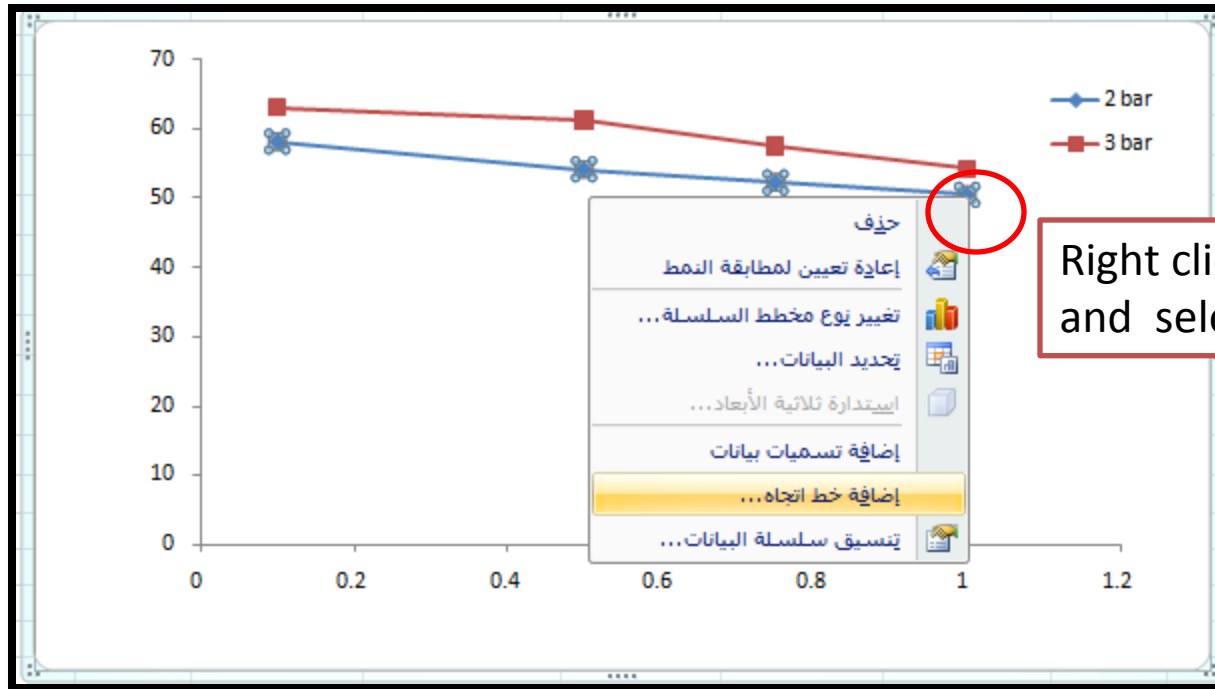
ظل

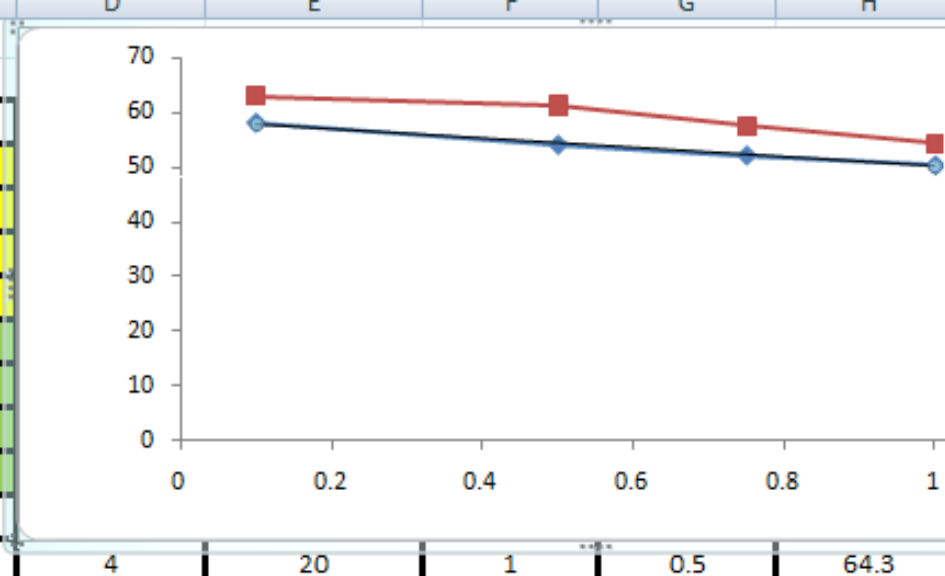
تنسيق ثلاثي الأبعاد

Select any option
to format the curve

1.2

Curve fitting





select any type of
the curve to fit your
data.

To show the
equation of the
curve fitting and
intercept point and

R

تنسيق خط الاتجاه

خيارات خط الاتجاه

نوع الاتجاه/الانحدار

☐ انبساطي
☒ خطي
☐ لوغاريتمي
☐ متعدد الحدود:
☐ طاقة
☐ معدل النقل:

اسم خط الاتجاه

☒ التلقائي: خطي (bar 2)
☐ المخصص:

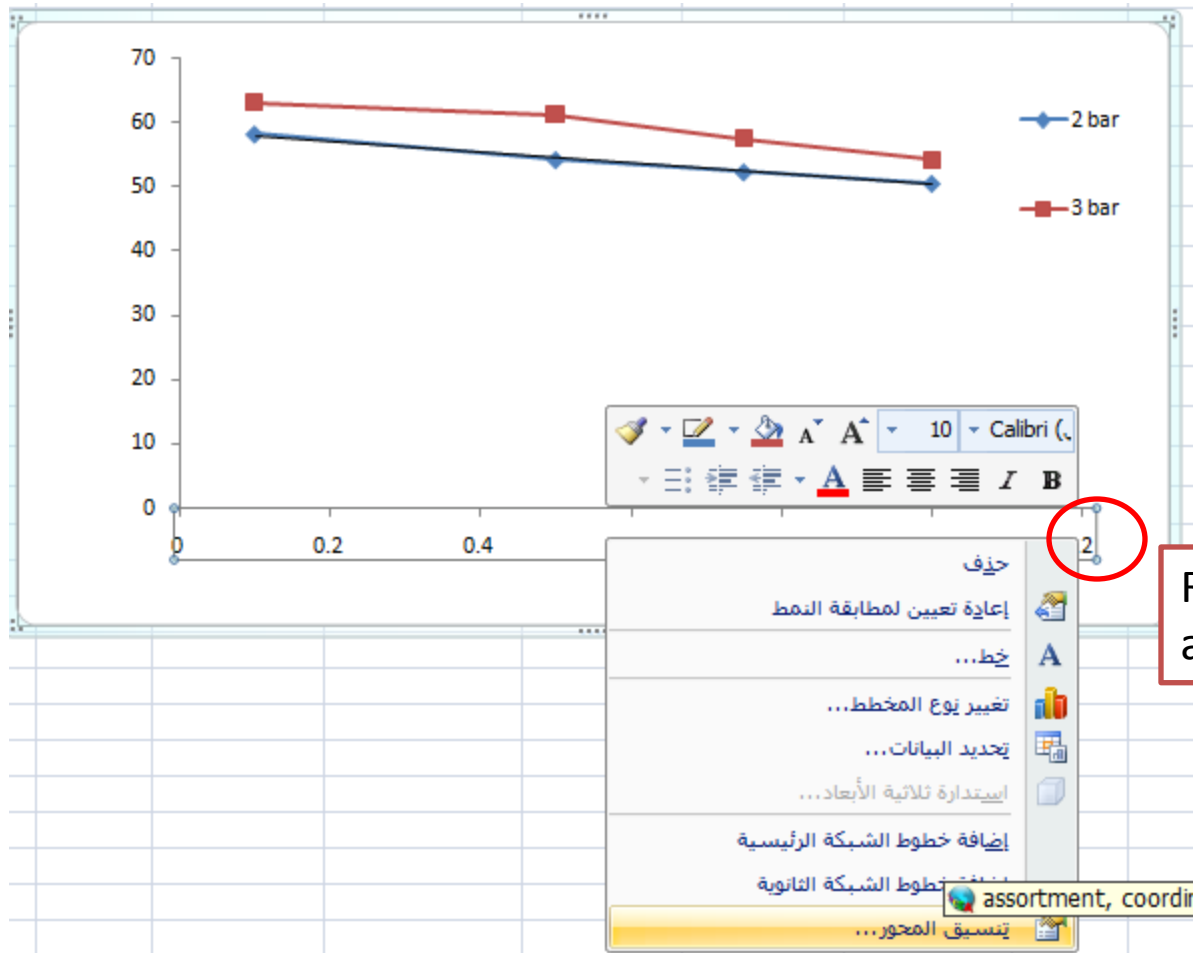
التنبؤ

الأيام: نقاط
 الخلف: نقاط

☒ إعداد التقاطع =
☐ عرض المعادلة في المخطط
☐ عرض قيم الجذر التربيعي في المخطط

إغلاق

Format axes



خيارات المحور

الحد الأدنى: ☐ ثابت ☒ تلقائي

الحد الأقصى: ☐ ثابت ☒ تلقائي

الوحدة الرئيسية: ☐ ثابتة ☒ تلقائية

الوحدة الثانوية: ☐ ثابتة ☒ تلقائية

☐ القيم في ترتيب عكسي

☐ مقياس لوغاريتمي الأسّي:

وحدات العرض:

☐ إظهار تسمية وحدات العرض في المخطط

نوع علامة التجزئة الرئيسية:

نوع علامة التجزئة الثانوية:

تسميات المحاور:

يتقاطع المحور العمودي عند:

☒ تلقائي

☐ قيمة المحور:

☐ القيمة القصوى للمحور

خيارات المحور

رقم

تعبئة

لون الخط

نمط الخط

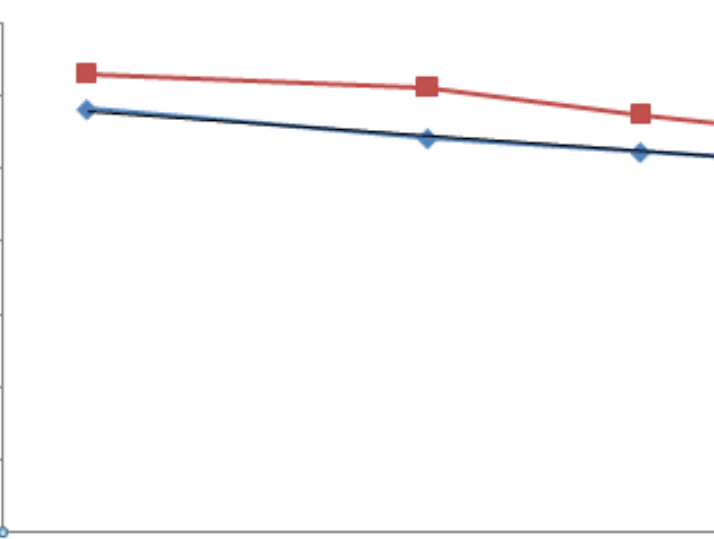
ظل

تنسيق ثلاثي الأبعاد

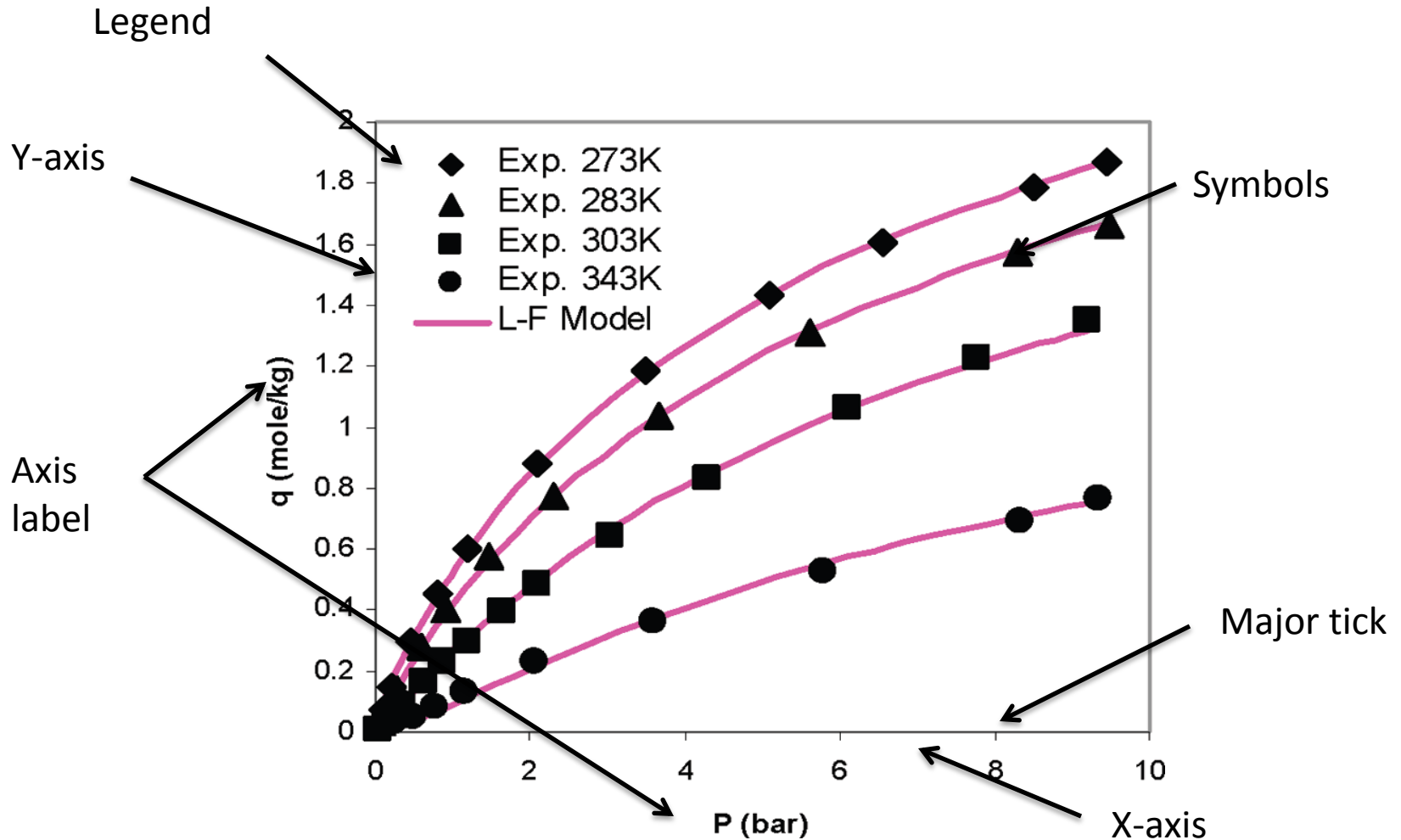
محاذاة

إغلاق

70
60
50
40
30
20
10
0



Anatomy of figure



Caption → **Figure 4. Isotherms of pure nitrogen on zeolite 5A.**