

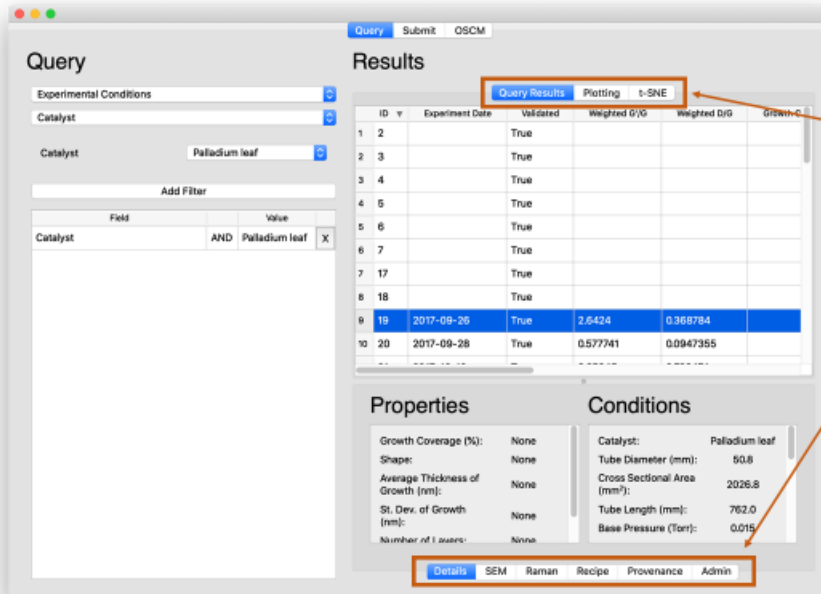
Tutorial – Query Tool – Gr-ResQ

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This tutorial guides you through the features of the Query Tool in the Gr-ResQ tool.



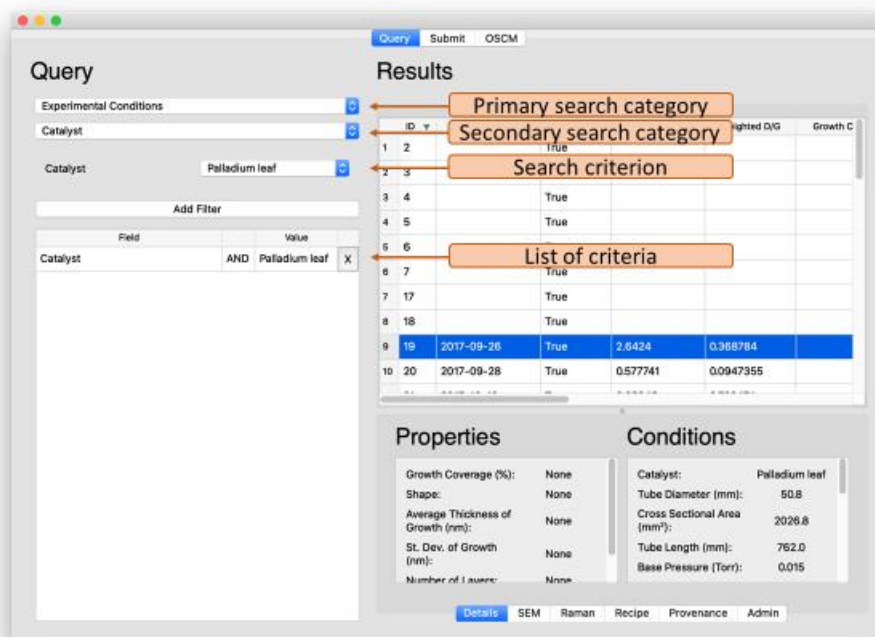
The query tool has the following tabs:

- 3 tabs at the top:**
1. Query Results
 2. Plotting
 3. t-SNE

- 6 tabs at the bottom:**
- a. Details
 - b. SEM
 - c. Raman
 - d. Recipe
 - e. Provenance
 - f. Admin

This tutorial guides you through tabs **1, 2, 3, a, b & d**

Tab 1: Query Results



To query:

- Select primary search field
- Select secondary search field
- Enter search criterion
- Select "Add Filter"

The list of filters used is shown and individual filters can be removed with the X button on each filter row

Tab a: Details

Query

Experimental Conditions
Catalyst

Catalyst: Palladium leaf

Field	Value
Catalyst	AND Palladium leaf X

Results

ID	Experiment Date	Validated	Weighted G/G	Weighted D/G	Growth C
1 2		True			
2 3		True			
3 4		True			
4 5		True			
5 6		True			
6 7		True			
7 17		True			
8 18		True			
9 19	2017-09-26	True	2.6424	0.368784	
10 20	2017-09-28	True	0.577741	0.0947355	

Properties

Growth Coverage (%): None
Shape: None
Average Thickness of Growth (nm): None
St. Dev. of Growth (nm): None
Number of Layers: None

Conditions

Catalyst: Palladium leaf
Tube Diameter (mm): 50.8
Cross Sectional Area (mm²): 2026.8
Tube Length (mm): 762.0
Base Pressure (Torr): 0.015

Details SEM Raman Recipe Provenance Admin

Results contains two sections:

- Table of search results
- Information about a selected row

Properties gives information about the graphene growth

Conditions gives information on synthesis environment

Tab b: SEM

Query

Experimental Conditions
Catalyst

Catalyst: Palladium leaf

Field	Value
Catalyst	AND Palladium leaf X

Results

ID	Experiment Date	Validated	Weighted G/G	Weighted D/G	Growth C
1 2		True			
2 3		True			
3 4		True			
4 5		True			
5 6		True			
6 7		True			
7 17		True			
8 18		True			
9 19	2017-09-26	True	2.6424	0.368784	
10 20	2017-09-28	True	0.577741	0.0947355	

SEM Images and Masks

SEM Image 1
SEM Image 2

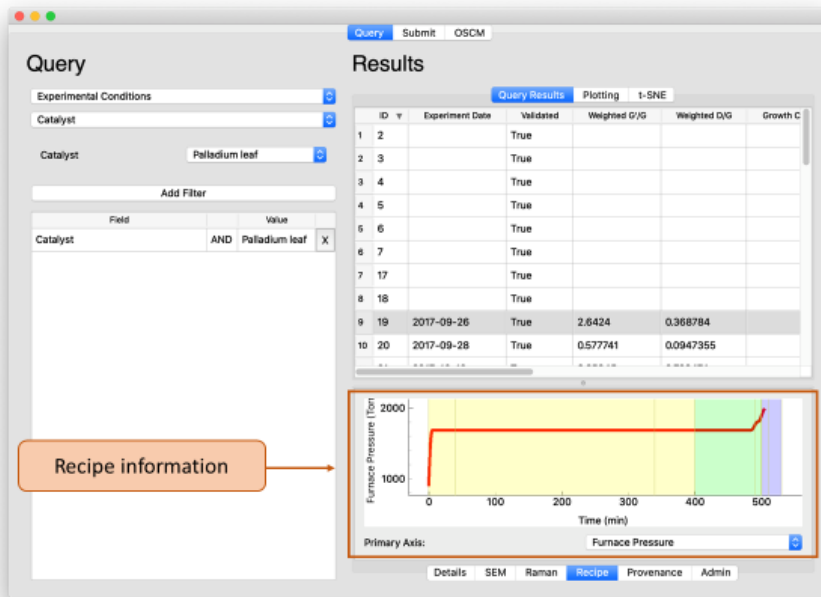
Raw Data Mask

Details SEM Raman Recipe Provenance Admin

The SEM tab allows users to view the various SEM images

Corresponding masks labeling the graphene portions of the image are shown as well if available

Tab d: Recipe

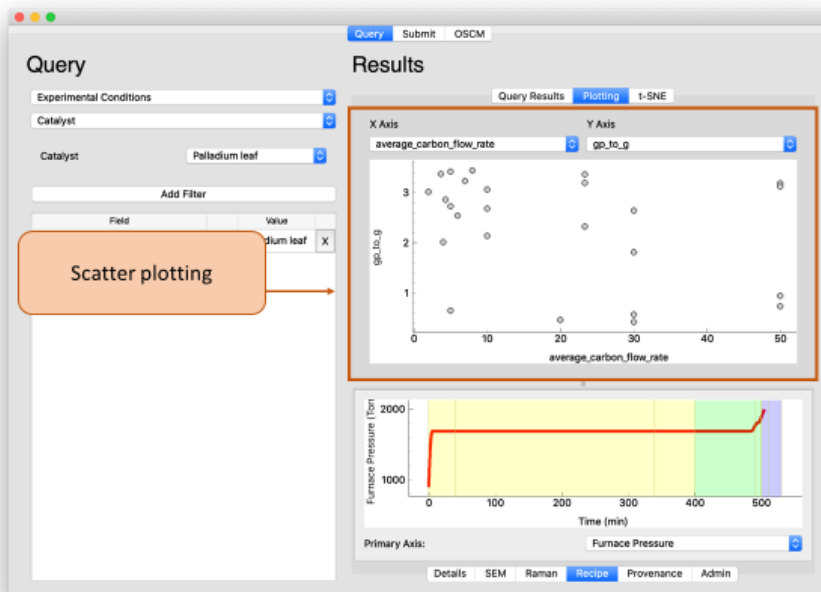


Users can plot recipe properties vs. time

Steps

Yellow: Annealing
Green: Growth
Blue: Cooling

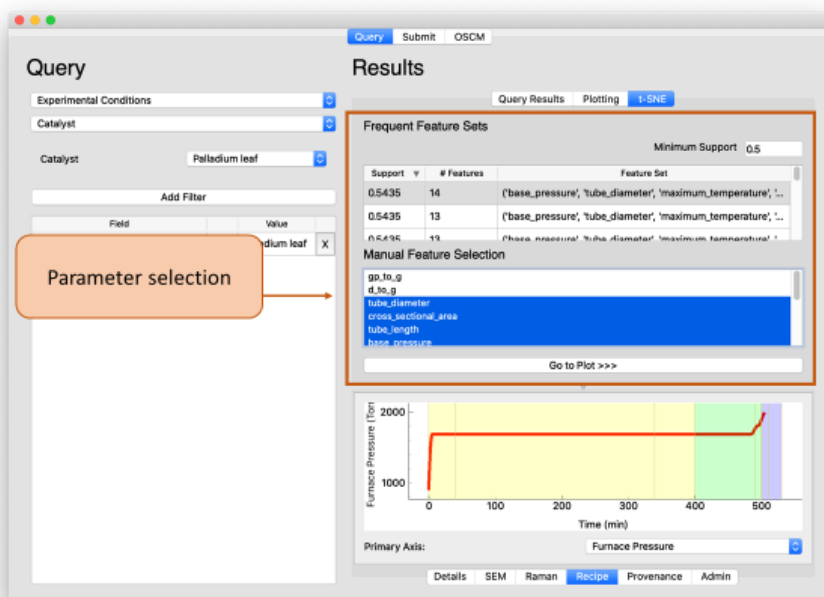
Tab 2: Plotting



In the Plotting tab, users can select features to compare.

Select features by using the combo boxes for the X and Y axes

Tab 3: t-SNE

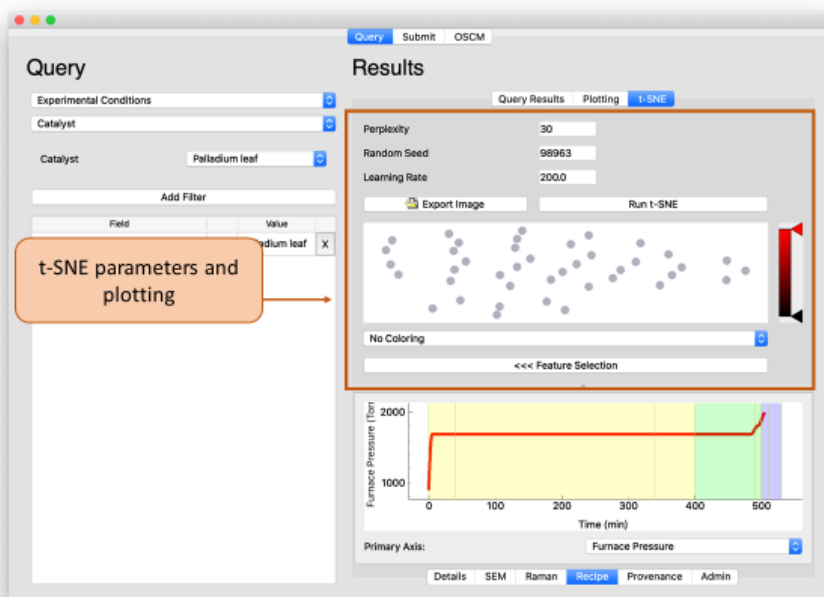


In the t-SNE tab, users can conduct a t-SNE visualization.

Users first select the features to conduct the analysis on.

We provide sets of attributes and their corresponding support* in the data to aid with selection.

*support refers to the fraction of data containing input for those features



Users can select t-SNE analysis parameters or leave default parameters as they are.

After running the analysis, users can color the data points by selecting an attribute from the combo box.