

# USER GUIDE FOR GR-RESQ APP

Who is a *User*?

*User* refers to any user of the web application. *Users* can do the following:

- 1) can submit their experiments and set visibility and ownership of the same.
- 2) can be part of different experiment groups and can submit experiments only visible to the group.
- 3) can query for experiments based on substrate, properties, environmental conditions, author, and furnace.
- 4) can view public experiments, ones submitted by themselves, or those made visible to the groups they are part of.
- 5) can view their profile information like name, institution, email, and password.

Who is an *Author*?

- *Author* refers to the author of the experiment.
- All *Users* have an *Author* profile created when they sign up.
- If a *User* is deleted, they remain as an *Author* of the experiments that they submitted. Their *Author* profile is not removed.
- Any *User* can select an *Author* profile while submitting experiments and can submit experiment on the behalf of other *Authors*. For example, A signed up as *User* and submitted EXP-EA and EXP-EB. A was then removed. If any other *User* in A's group wants to submit A's experiments, they can select A as an *Author* while submitting the experiment. A loses access to the web tool when the *User* profile is deleted. A, however, remains in *Author* database.

Who is the *Admin*?

- *Admin* refers to the person who has access to all experiments and user data and manages the tool. Only *Admin* has the privilege to create, read, update and delete any data.

What does a *Group* mean?

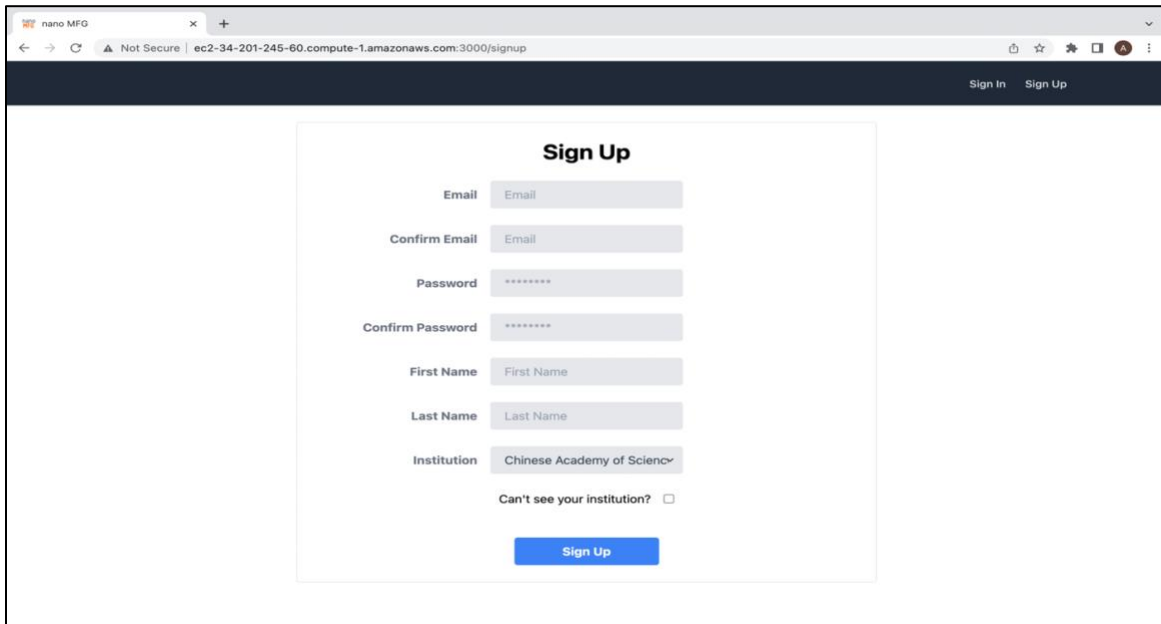
- A *Group* enables its members to share their data.
- *Group Moderator*: Has the privilege to update/delete experiments in their group and modify permissions of the members.
- *Group Member*: Can access the experiments submitted by other members in the group. For example, A, B, C belong to GRP-ONE. They can see each other's experiments that are made visible to their *Group*.

You need to complete the below steps to sign up as a new *User*. After signing up, please contact the admin/group manager to be added to group/s.

<https://gresq.graphene.illinois.edu>

## I. Sign Up As A New User

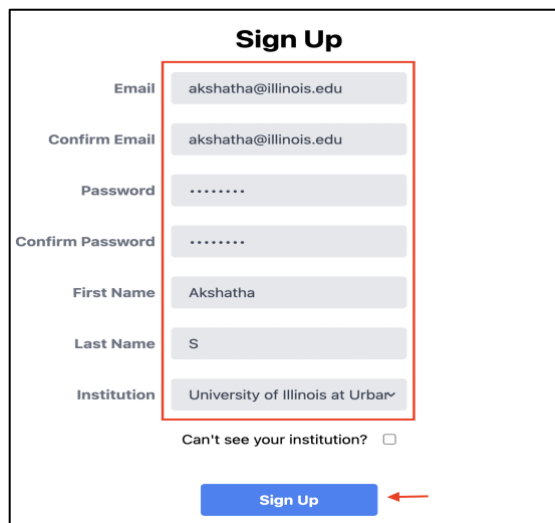
Figure 1 Sign Up Page



The screenshot shows a web browser window with the URL `ec2-34-201-245-60.compute-1.amazonaws.com:3000/signup`. The page has a dark blue header with "Sign In" and "Sign Up" links. The main content area is white and contains a "Sign Up" form. The form fields are: Email, Confirm Email, Password, Confirm Password, First Name, Last Name, and Institution (a dropdown menu currently showing "Chinese Academy of Science"). There is a checkbox for "Can't see your institution?" and a blue "Sign Up" button at the bottom.

Enter your details: **university/institution email, password, first name, last name** and select your **institution** from the dropdown menu.

Figure 2 Enter New User Details



The screenshot shows the same "Sign Up" form as Figure 1, but with user details entered. The fields are: Email (akshatha@illinois.edu), Confirm Email (akshatha@illinois.edu), Password (.....), Confirm Password (.....), First Name (Akshatha), Last Name (S), and Institution (University of Illinois at Urban). A red box highlights the entire form area. A red arrow points to the blue "Sign Up" button at the bottom.

**Note:** Password must be minimum 8 characters with at least one uppercase letter, one lowercase letter, one digit and one special character.

*Figure 3 Dropdown to Select Institution*

The screenshot shows a registration form with the following fields: Password, Confirm Password, First Name, Last Name, and Institution. A dropdown menu is open for the Institution field, displaying a list of institutions. The 'University of Illinois at Urbana-Champaign' is selected and highlighted in blue.

Field	Value
Password	
Confirm Password	
First Name	
Last Name	
Institution	✓ University of Illinois at Urbana-Champaign

- Chinese Academy of Sciences
- Gachon University
- Korea Electronics Technology Institute
- Korea Institute of Science and Technology
- Northeastern University
- Oxford Instruments Asylum Research
- Peking University
- Sejong University
- Sungkyunkwan University
- Texas Instruments
- Tsinghua University
- ✓ University of Illinois at Urbana-Champaign
- University of Oxford
- University of Texas at Austin

If you cannot see your institution, select the checkbox, and enter your institution name.

*Figure 4 Enter New Institution*

The screenshot shows the registration form with the 'Last Name' and 'Institution' fields. The 'Institution' field is highlighted with a red box, and the 'Can't see your institution?' checkbox is checked. A 'Sign Up' button is visible at the bottom.

Field	Value
Last Name	Last Name
Institution	New Institution

☒ Can't see your institution?

**Sign Up**

On successful registration of new user, you will see below alert box.

*Figure 5 Sign Up Successful*

The screenshot shows the sign-in page with fields for Email and Password, and a 'Sign In' button. A white alert box is displayed at the bottom, indicating successful registration and prompting the user to sign in.

**Sign In**

Email: Email

Password: \*\*\*\*\*

**Sign In**

**GrResq App Alert**

Signed Up. Please sign in

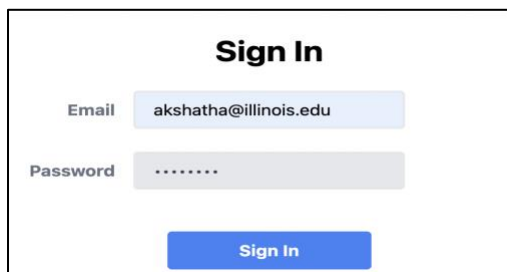
**Close**

Sign up will fail if the email id is already registered or the password does not match the criteria. If the sign up fails for any other reason, please refresh and try again.

## II. Sign In for Existing Users

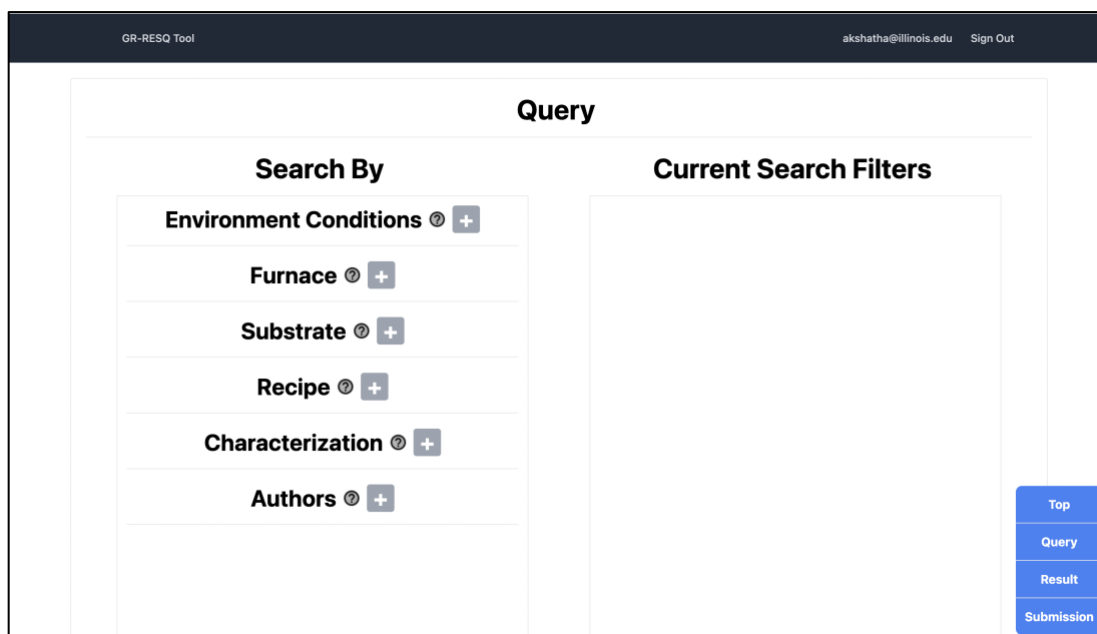
Enter your username, password and sign in to query/submit experiments.

Figure 6 Sign In



A sign-in form titled "Sign In". It contains two input fields: "Email" with the value "akshatha@illinois.edu" and "Password" with masked characters ".....". Below the fields is a blue "Sign In" button.

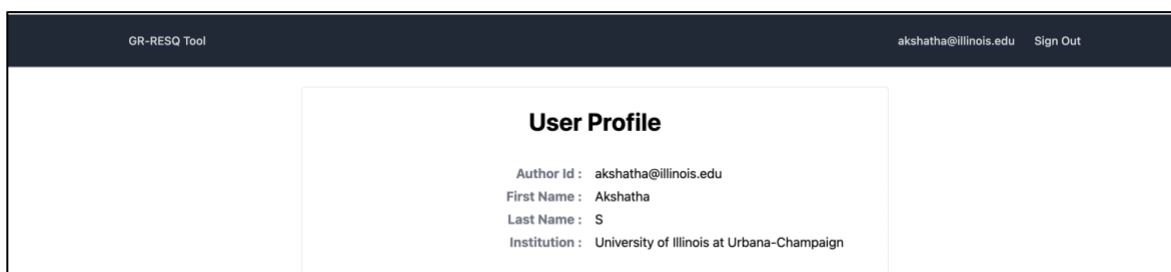
Figure 7 Landing Page after sign in



The landing page after signing in. The header shows "GR-RESQ Tool" on the left and "akshatha@illinois.edu Sign Out" on the right. The main content area is titled "Query" and is divided into two columns. The left column is titled "Search By" and contains five categories: "Environment Conditions", "Furnace", "Substrate", "Recipe", and "Characterization", each with a plus icon. The right column is titled "Current Search Filters" and is currently empty. On the bottom right, there is a vertical navigation menu with buttons for "Top", "Query", "Result", and "Submission".

When you click on your email id, you can view your profile. Your email id is your author id.

Figure 8 User Profile Page



The user profile page. The header is the same as the landing page. The main content area is titled "User Profile" and displays the following information: "Author Id : akshatha@illinois.edu", "First Name : Akshatha", "Last Name : S", and "Institution : University of Illinois at Urbana-Champaign".

**Note:** Refreshing the page after signing in will automatically sign out. DO NOT REFRESH.

### III. Submitting Experiment

After sign in, you can either click on “**submission**” at the bottom right corner or scroll down.

Figure 9 Submitting new experiment

**Submit New Experiment Data**

Material Name: Graphene

**Environment Conditions**  
☐ I will upload new Environment Conditions  
Environment Conditions Number: ENVCOND-5J2

**Furnace**  
☐ I will upload a new Furnace  
Furnace Number: FRNC-JYR

**Substrate**  
☐ I will upload a new Substrate  
Substrate Number: SUB-AA

**Properties**  
☐ I will upload new Properties  
Properties Number: PRP-AA

**Recipe**  
☐ I will upload a new Recipe  
Recipe Number: RCP-AA

**Authors**  
Author #akshatha@illinois.edu  
Name: Akshatha S  
Institution: University of Illinois at Urbana-Champaign  
Author Number: ATHR-J2A  
**Add Author**

SEM File(s)  
Choose Files No file chosen

RAMAN File(s)  
Choose Files No file chosen

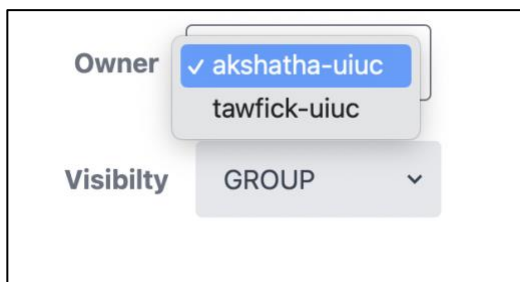
Visibility: ☒ PRIVATE ☐ PUBLIC

**Submit**

If a user does not belong to any group, they can set visibility of experiment to be private (only them) or public (any user can query the experiment). They cannot set the owner of the experiment.

Once the user is part of one/more groups, they can select the group they want to submit the experiment to as the owner. They can set visibility to private/public/group (visible to members of their group only).

Figure 10 Select ownership and visibility



Owner

✓ akshatha-uiuc  
tawfick-uiuc

Visibility

GROUP

Select pre-existing experimental/recipe parameters from the dropdowns or upload new ones by selecting the check box.

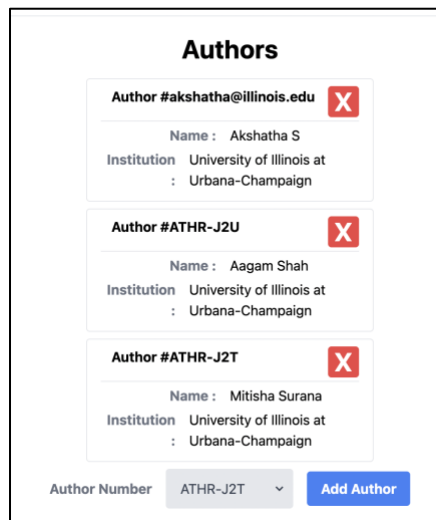
Upload Raman and Scanning Electron Microscopy (SEM) files related to the experiment.

You can add multiple authors to the experiment.

Select author id (author's email) from the dropdown and click on Add Author.

Click on the red “X” if you want to remove author from your experiment.

Figure 11 Adding multiple authors while submitting the experiment



**Authors**

Author #akshatha@illinois.edu X

Name : Akshatha S  
Institution : University of Illinois at Urbana-Champaign

Author #ATHR-J2U X

Name : Aagam Shah  
Institution : University of Illinois at Urbana-Champaign

Author #ATHR-J2T X

Name : Mitisha Surana  
Institution : University of Illinois at Urbana-Champaign

Author Number ATHR-J2T Add Author

After successful submission, you can note down the experiment id for future reference.

Figure 12 Experiment Submission Successful

The screenshot shows a web form titled "Submit New Experiment Data". The form is divided into several sections: "Material Name" (Graphene), "Environment Conditions" (ENVCOND-5J2), "Furnace" (FRNC-JYR), "Substrate" (SUB-AA), "Properties" (PRP-AA), "Recipe" (RCP-AA), "Authors" (Akshatha S, University of Illinois at Urbana-Champaign), and "SEM File(s)" and "RAMAN File(s)" (both "No file chosen"). A "Submit" button is at the bottom right. A modal alert box titled "GrResq App Alert" is centered over the form, displaying the message "Experiment Submitted with ID EXP-ESPS" and a "Close" button. A red arrow points from the text "Experiment Submitted with ID EXP-ESPS" to the "EXP-ESPS" part of the ID.

## IV. Querying Experiments

**Note:** You will be able to see experiments submitted by you, those which are public and those submitted by members of any group that you are a part of.

You can view a one-line description of the parameters in each filter section by moving the mouse pointer on question mark icon.

Figure 13 Search Filters

### Search By

Environment Conditions ? +

Furnace ? +

Substrate ? +

Recipe ? +  
Parameters describing the annealing, growing and cooling steps

Characterization ? +

Authors ? +

You can click on the + (plus) icon to expand the search parameter.

Select the parameter from dropdown and select its value using min-max or dropdown. In min-max, using the arrows, you can adjust the number with 0.01 precision. Otherwise, you can clear the value and enter on your own.

Click Add to add the filter to current search filter.

You can add multiple filters.

If a filter is already added, it will not let you add another filter for the same parameter again. Click on red “X” of a filter under “current search filters” if you want to remove a filter.



Figure 14 Search Parameters

The screenshot displays two side-by-side panels for search parameters. The left panel, titled "Environment Conditions", features a dropdown menu labeled "OPTION" with "Ambient Temperature (°C)" selected. Below this are input fields for "MIN" (0) and "MAX" (20.01), followed by a blue "Add" button. The right panel, titled "Substrate", has a dropdown menu labeled "OPTION" with "Catalyst" selected. Below it, a list of catalysts is shown: Copper (checked), Nickel, Palladium, Palladium leaf, and Platinum.

You can type author name or institution in the provided text box. As you type each letter, the tool will filter out authors displayed to you. Click on the green + (plus) icon to add the author to current search filter.

Figure 15 Search by Author

The screenshot shows the "Authors" section of the search interface. It includes input fields for "Name" (containing "Mit") and "Institution". Below these fields, a list of authors is displayed. The first author is "Author #ATHR-J2T", with a green plus icon to its right. Below this, the author's details are listed: "Name : Mitisha Surana" and "Institution : University of Illinois at Urbana-Champaign".

Figure 16 Search Filters

### Current Search Filters

Ambient Temperature (°C)

×

Min : 0

Max : 20

Catalyst

×

Value : Copper

Author

×

Name : Mitisha Surana

Institution : University of Illinois at Urbana-Champaign

Search Experiments

Review added filters and click on Search Experiments. Then click on Go to Results to view.

### Current Search Filters

Ambient Temperature (°C)

×

Min : 0

Max : 20

Catalyst

×

Value : Copper

Author

×

Name : Mitisha Surana

Institution : University of Illinois at Urbana-Champaign

Search Experiments

Go to Results

Figure 17 Query Result

Query Result								
Experiment ID	Furnace ID	Substrate ID	No. of Layers	Growth Coverage (%)	Author	Carbon Source	Ambient Temperature (°C)	Catalyst
<a href="#">EXP-CV</a>	FRNC-JYY	3c71fc79-62c1-4176-a021-0af57c825cc3			Mitisha Surana	CH4	10	Copper
<a href="#">EXP-DP</a>	FRNC-JYZ	05227128-cb27-497d-b6b5-ffdbc925ad68			Mitisha Surana	CH4	10	Copper
<a href="#">EXP-DS</a>	FRNC-JYZ	05227128-cb27-497d-b6b5-ffdbc925ad68			Mitisha Surana	CH4	10	Copper
<a href="#">EXP-DT</a>	FRNC-JYZ	05227128-cb27-497d-b6b5-ffdbc925ad68			Mitisha Surana	CH4	10	Copper
<a href="#">EXP-J2J</a>	FRNC-JYZ	05227128-cb27-497d-b6b5-ffdbc925ad68			Mitisha Surana	CH4	10	Copper
<a href="#">EXP-J2U</a>	FRNC-JYZ	05227128-cb27-497d-b6b5-ffdbc925ad68			Mitisha Surana	CH4	10	Copper

You can click on the experiment id (blue hyperlink) to view the experiment in detail.

Figure 18 Experiment Detail Page

GR-RESQ Tool

akshatha@illinois.eduSign Out

Experiment EXP-J2U

Details

Authors

Author #ATHR-J2T

Name : Mitisha Surana

Institution : University of Illinois at Urbana-Champaign

Environment Condition #ENVCOND-BHDQ

Ambient Temperature : 10 °C

Dew Point : -

Furnace #FRNC-JYZ

Tube Diameter : 25.4 mm

Cross Sectional Area : 506.707 mm<sup>2</sup>

Tube Length : 1000 mm

Length of Heated Region : -

Substrate #SUB-AA

Catalyst : Copper

Thickness : 25 um<sup>2</sup>

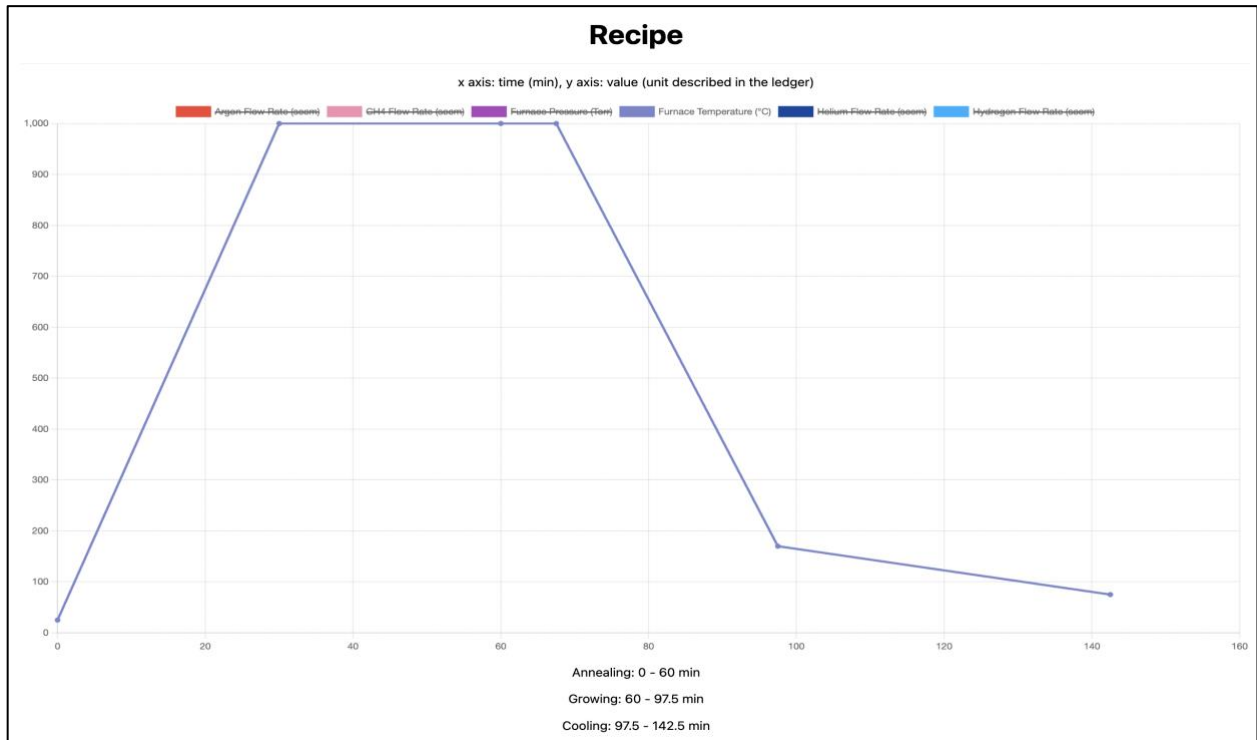
Diameter : -

Length : -

Surface Area : 150 um

Property #PRP-DL

Figure 19 Graph



You can click on the strikethrough options to toggle the view of different data on the graph.

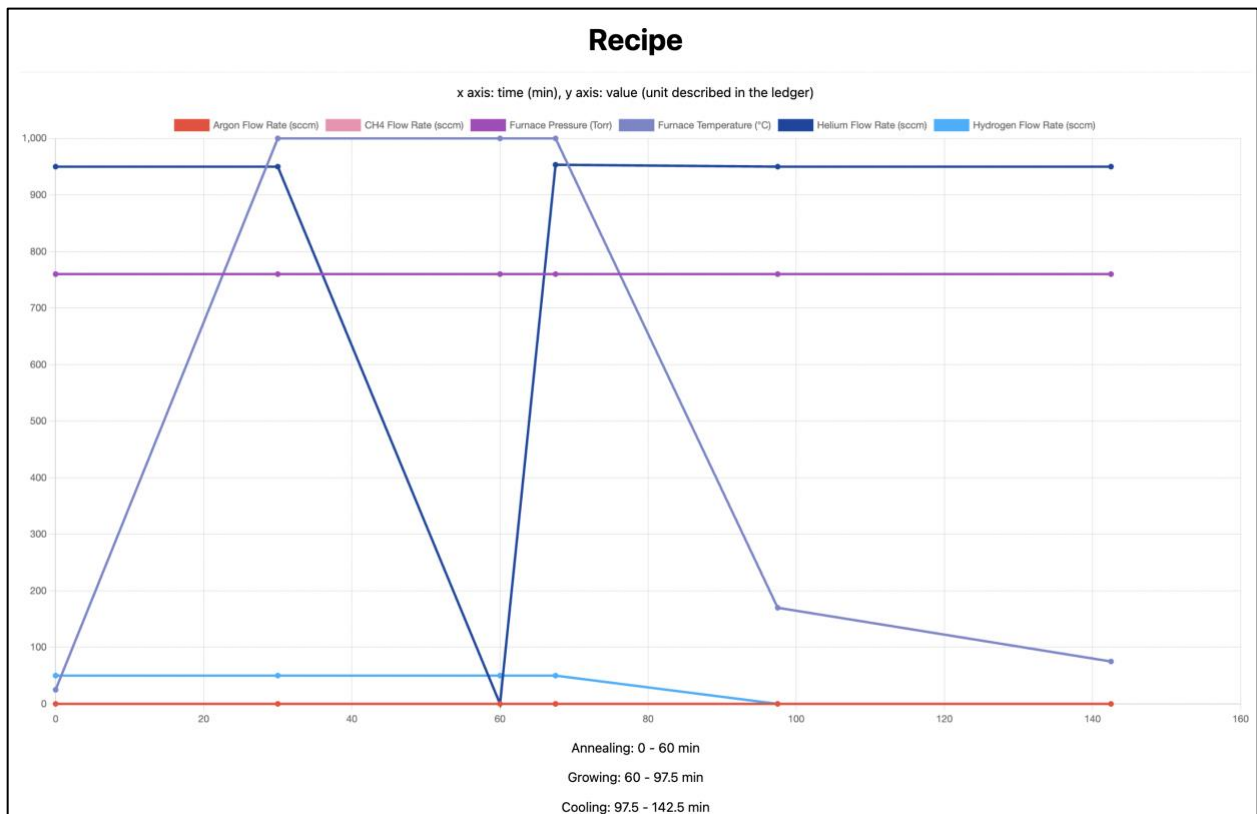


Figure 20 Raman Data

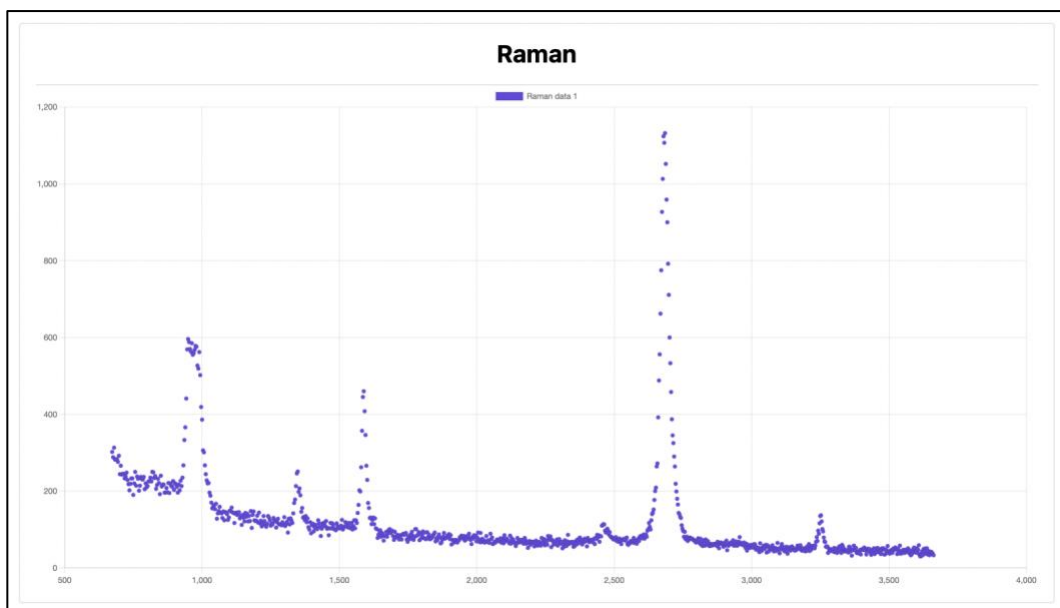


Figure 21 SEM Data

