

# NEMO Quick Start

For Users

# NEMO Landing Page

MIT.nano NEMO-CE

Calendar

Tool control

Status dashboard

Requests

Safety

Welcome, Aaron  Logout



Calendar



Tool control



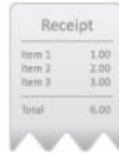
Training



Safety



Send feedback



View your usage



News 



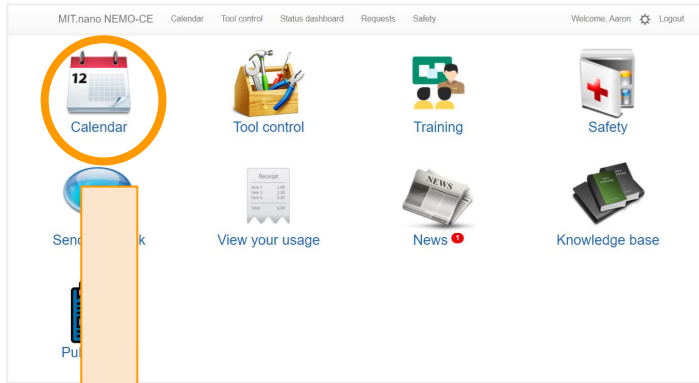
Knowledge base



Publications

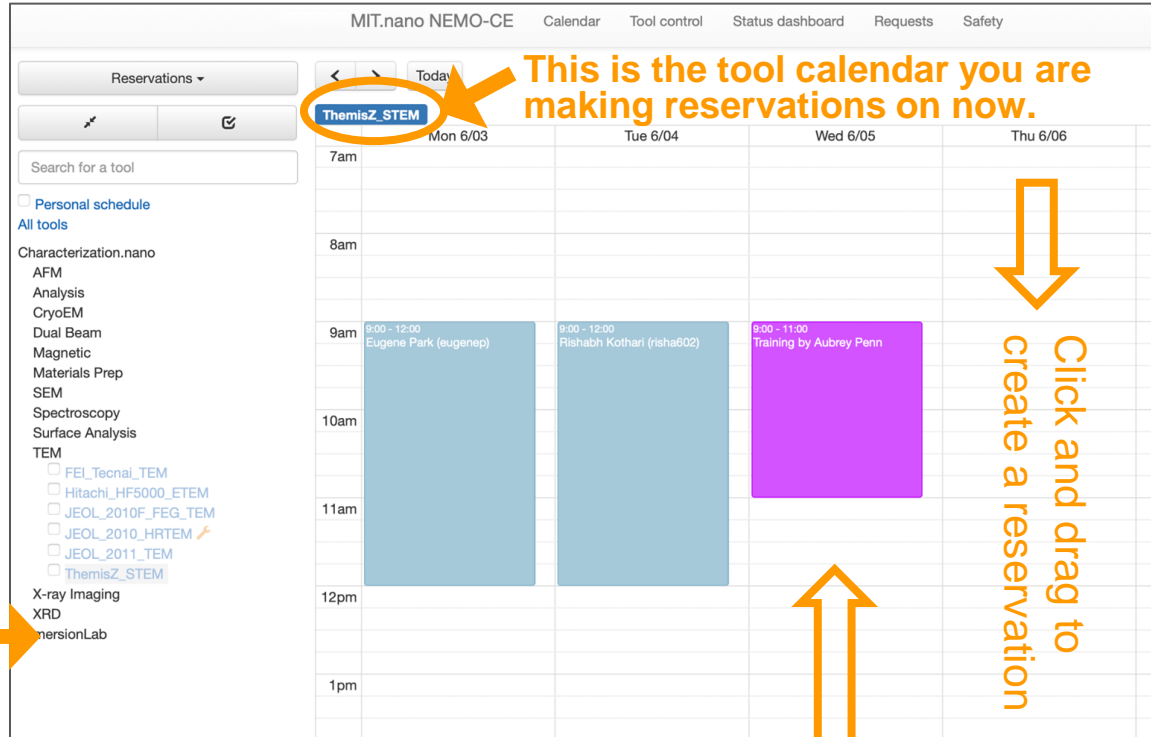
This is the NEMO landing page.  
You can always return by clicking  
on the link at the top left.

# NEMO Calendar - Reservations and sign-ups



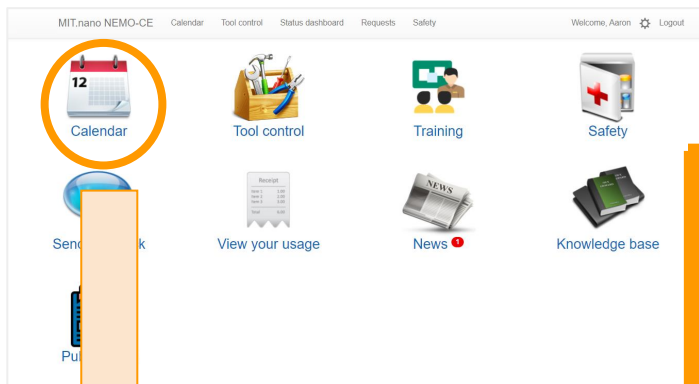
Calendar

Select a tool to see its calendar.  
(Use the checkboxes to select multiple tools  
and see their calendars overlaid together.)



You can sign up for training  
events directly in the calendar  
as well as from the training section.

# NEMO Calendar - Reservations and sign-ups



Calendar

MIT.nano NEMO-CE

Reservations

Today

Mon 6/03

Search for a tool

☒ Personal schedule

All tools

Characterization.nano

- AFM
- Analysis
- CryoEM
- Dual Beam
- Magnetic
- Materials Prep
- SEM
- Spectroscopy
- Surface Analysis

TEM

- ☐ FEI\_TecnaI\_TEM
- ☐ Hitachi\_HF5000\_ETEM
- ☐ JEOL\_2010F\_FEG\_TEM
- ☐ JEOL\_2010\_HRTEM
- ☐ JEOL\_2011\_TEM
- ☐ ThemisZ\_STEM

X-ray Imaging

XRD

ImmersionLab

9am

10am

11am

12pm

1pm

9:00 - 12:00 Eugene Park (eugenap)

9:00 - 12:00 Rishabh Kothari (rishab02)

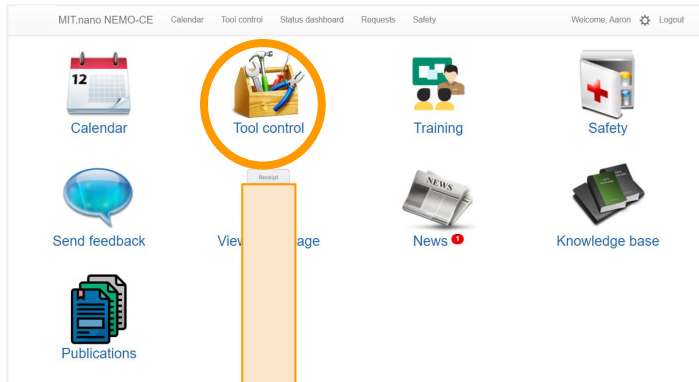
9:00 - 11:00 Training by Aubrey Penn

Use this button to only show tools on which you are trained. (Other tools will be grayed out.)

Check this box to change the calendar view to show your personal schedule.

Use this button to quickly expand or collapse the entire tool tree view.

# NEMO Tool Control - Engage and disengage tools



Tool Control

The screenshot shows the 'ThemisZ\_STEM' tool page. The status is 'This tool is operational and idle.' A green button labeled 'Start using the ThemisZ\_STEM' is circled in orange. The page also displays a list of tool capabilities and specifications.

MIT.nano NEMO-CE Calendar Tool control Status dashboard Requests Safety Welcome, Aaron Logout

ThemisZ\_STEM Summary Details Config History Report a problem Post a comment

Search for a tool

Characterization.nano

- AFM
- Analysis
- CryoEM
- Dual Beam
- Magnetic
- Materials Prep
- SEM
- Spectroscopy
- Surface Analysis
- TEM
  - FEL\_Tecnaei\_TEM
  - Hitachi\_HF5000\_ETEM
  - JEOL\_2010F\_FEG\_TEM
  - JEOL\_2010F\_HRTEM
  - JEOL\_2011\_TEM
  - ThemisZ\_STEM
- X-ray Imaging
- XRD
- ImmersionLab

Accelerating voltage: 200kV

Themis Z 60KV position 0 : 60KV

Tool usage will be billed to the project named "6948705-Bimolecular Interactions In Organic Semi".

Start using the ThemisZ\_STEM

Specifications/Capabilities

- 60, 200 and 300 kV operating range
- Monochromator with < 30 meV energy resolution in EELS (vibrational spectroscopy and automated alignment software)
- Piezoelectric stage compensating drift and fine sample movements
- Sub-Å imaging at 60kV (particularly useful for 2D materials)
- Grating continuum spectrometer and imaging filter (atomic resolution chemical mapping with monochromated EELS)
- Super X-quadrant EDS detector with separable signals from each detector (atomic resolution elemental mapping with energy-dispersive X-ray spectroscopy (EDS))
- Imaging and EDS tomography to reconstruct structure and chemistry in 3D
- ThermoFisher Scientific EMPAD detector
- Fast 4k CMOS camera
- Segmented diode detector for fast mapping of electromagnetic fields (differential phase contrast) and light elements (integrated differential phase contrast)
- Magnetic domains imaging via Lorentz lens settings

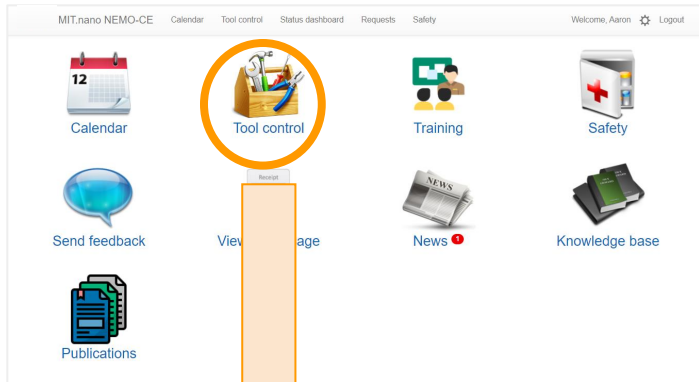
Accessories/in-situ holders

- Mel-Built Atmos Double Tilt LN2 Vacuum/Inert Gas Transfer Holder
- DENS sections Lighting Heating and Biasing Double Tilt Holder
- Hummingbird Liquid Flow Holder with electrochemistry

Click to engage and use the tool.

(If you have more than one cost object, you will be prompted to choose one first before the green button will show up.)

# NEMO Tool Control - Engage and disengage tools



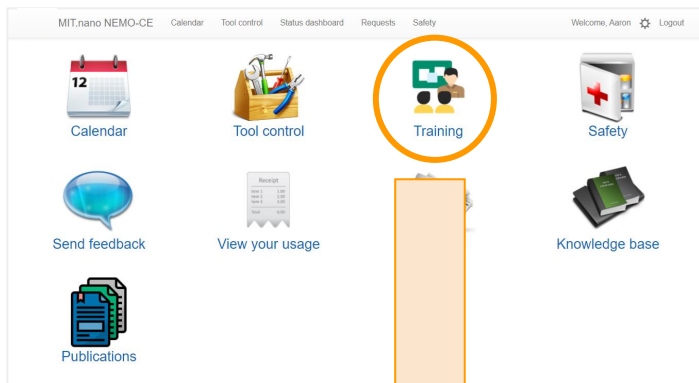
**Tool Control**

The screenshot shows the UVVISNIR\_PE1050 tool control interface. The title bar includes 'MIT.nano NEMO-CE' and navigation links: 'Calendar', 'Tool control', 'Status dashboard', 'Requests', 'Safety', and 'Administration'. Below the title bar is a search bar and a list of tools. The 'UVVISNIR\_PE1050' tool is selected, and its details are shown. The details section includes a 'Summary' tab, a 'Details' tab, and a 'Usage Data History' tab. The 'Summary' tab is active, showing a message: 'You are using this tool for the project named Char.nano-NoCharge since May 31 @ 12:11:03 PM.' Below this message is a note: 'NOTE: Make sure to enter accurate values. Your charges may be based on them.' The form contains three sections: 1. 'Please enter your sample description.' with a text input field containing 'Al thin film on ITO substrate'. 2. 'Should this be reviewed?' with radio buttons for 'Yes' and 'No', where 'No' is selected. 3. 'Do you have any comments?' with a text input field. At the bottom of the form is a red button labeled 'Stop using the UVVISNIR\_PE1050', which is circled in orange. An orange arrow points from this button towards the bottom right of the image.

**Click to disengage.**

(You will need to fill out any required questions first to enable the red button.)

# NEMO Trainings - Find and manage your training sessions



You can find upcoming trainings here  
or on each individual tool calendar

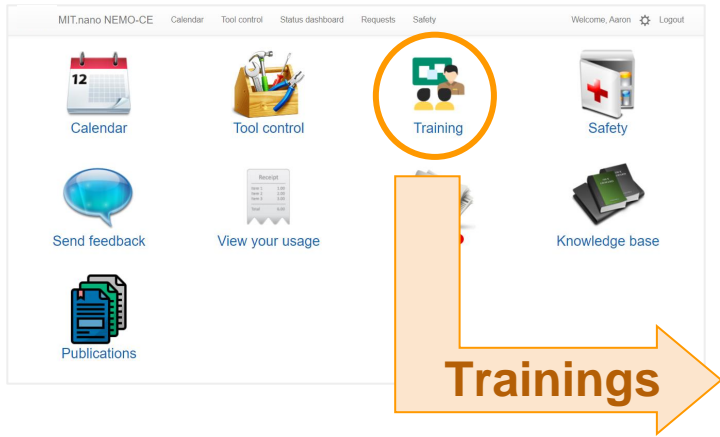
The Training dashboard has a top navigation bar with links: MIT.nano NEMO-CE, Calendar, Tool control, Status dashboard, Requests, Safety, Welcome, Tamar, and Logout. Below the navigation bar, the title 'Training dashboard' is displayed. There are three tabs: 'My training requests', 'Training history', and 'Upcoming training sessions' (which is selected and circled in orange). The main content area shows a table of upcoming training sessions:

Tool	Technique	Trainer	Start	Duration	Attendees	
ThemisZ_STEM	Aberration Corrected STEM Imaging	Aubrey Penn	Thursday, June 6th, 2024 @ 9:00:00 AM	90 minutes	0/5	CANCELLED
ThemisZ_STEM	Energy Dispersive X-ray Spectroscopy (EDS)	Aubrey Penn	Wednesday, June 5th, 2024 @ 9:00:00 AM	120 minutes	0/5	Register for this training

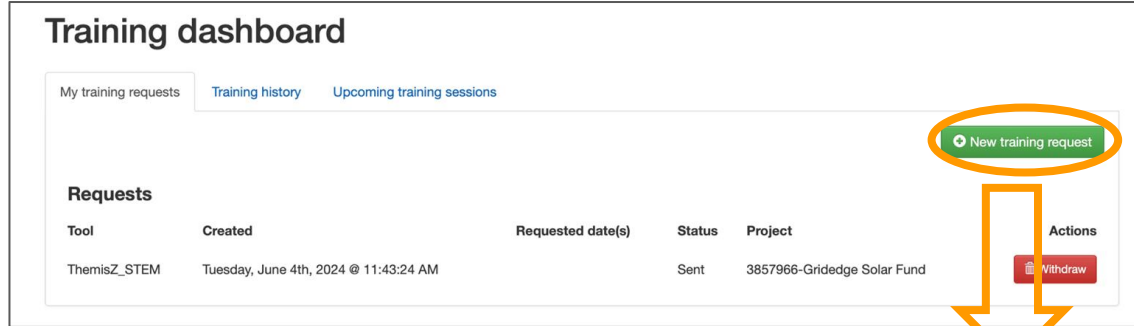
The 'Register for this training' button for the second session is circled in orange. A large orange arrow points upwards from below the text at the bottom of the slide towards this button.

Click to register for specific training sessions  
(You can also sign up via the calendar)

# NEMO Trainings - Find and manage your training sessions



If you don't see an upcoming group training, you can send a training request to the tool owner.



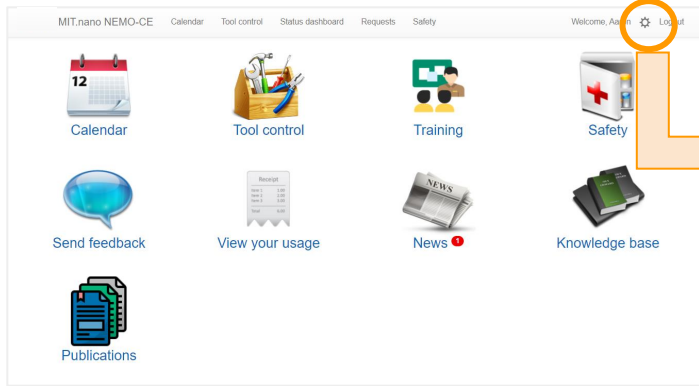
Include your availability in your request.  
Include details about what you want to do.

The "New training request" form includes fields for Tool, Availability, and Message. The "Tool" field is set to "CypherVRS\_AFM". The "Availability" field has four time slots: 06/26/2024 12:15 PM, 06/26/2024 04:15 PM, 06/27/2024 01:00 PM, and 06/27/2024 05:00 PM. The "Message" field contains the text: "I would like to get trained on KPFM and heating stage. I work on 2D materials." A green button labeled "Create request" is circled in orange.

From the training dashboard, you can also cancel your request if it's no longer needed.

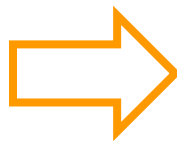


# NEMO User Preferences - Choose your notifications



## Setting Your User Preferences

Choose what email notifications you wish to receive from NEMO.



The 'User Preferences' page is displayed. It has the same navigation bar as the dashboard. The 'Reservations' section is circled in orange, and an orange arrow points to it from the text 'NEMO can send you calendar invitations for your reservations.' Below this, there are four checkboxes for reservation notifications. The 'Tool freed time notifications' section has input fields for 'Minimum freed time' (120 minutes) and 'Maximum future days' (7 days), with a text box for 'Tools' and a note 'You are not receiving notifications for any tools.' The 'Buddy System' section has two checked checkboxes for notification badges and email notifications. The 'Adjustment Requests' section has one checked checkbox for email notifications. The 'Email notifications' section is circled in orange, and an orange arrow points to it from the text 'Subscribe to equipment waitlists and get notified of cancelled reservations'.

**User Preferences**

**Reservations**

- ☐ Check this box to receive ICS calendar invitation when creating reservation
- ☐ Check this box to receive ICS calendar invitation when cancelling a reservation
- ☐ Check this box to be asked to confirm before making a reservation
- ☐ Check this box to be asked to confirm before moving or resizing a reservation

**Tool freed time notifications**

Minimum freed time:  minutes Minimum amount of minutes freed to receive a notification.

Maximum future days:  days Maximum number of days in the future to receive a notification for.

Tools:

You are not receiving notifications for any tools.

**Buddy System**

- ☒ Check this box to see notification badges for new buddy requests
- ☒ Check this box to receive an email notification when users reply to buddy requests you replied to

**Adjustment Requests**

- ☒ Check this box to receive an email notification for replies to your adjustment requests

**Email notifications**

The following is a list of notifications you will receive from [TEST] MIT.nano NEMO-CE. You have the option to set an alternate email address and define your preferences for which notifications you want to be sent to either of your emails, or both.

Some notifications can also be turned off completely.

# NEMO User Preferences - Choose your notifications

Add tools for which you wish to receive email notifications (i.e., all problems and comments)

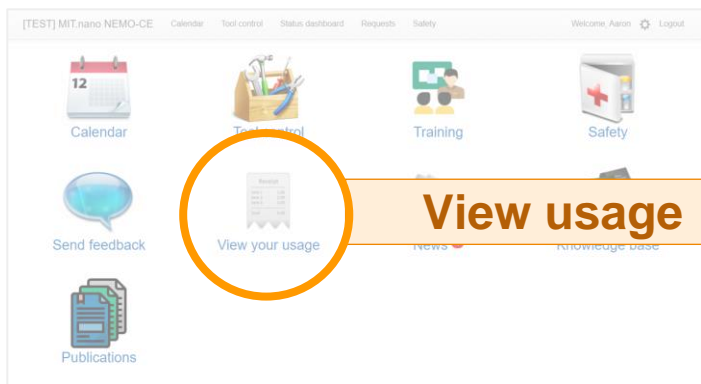
A screenshot of the NEMO User Preferences - Choose your notifications form. The form is divided into three sections: 'Adjustment Requests', 'Tool maintenance & notifications', and 'Email notifications'. The 'Adjustment Requests' section has a checkbox labeled 'Check this box to receive an email notification for replies to your adjustment requests' which is checked. The 'Tool maintenance & notifications' section has a text input field labeled 'Add a tool' and a button labeled 'Add a tool'. Below the button, it says 'You are currently viewing/receiving maintenance notifications for all tools you are an owner, backup owners or staff of.' The 'Email notifications' section has a paragraph of text: 'The following is a list of notifications you will receive from MIT.nano NEMO-CE. You have the option to set an alternate email address and define y notifications you want to be sent to either of your emails, or both. Some notifications can also be turned off completely.'

Previously\*, by default all users received all tool problem and comment notifications for all the tools they were qualified on.

**Now users can choose to opt-in for specific tools of interest.**

\* Until July 10, 2025

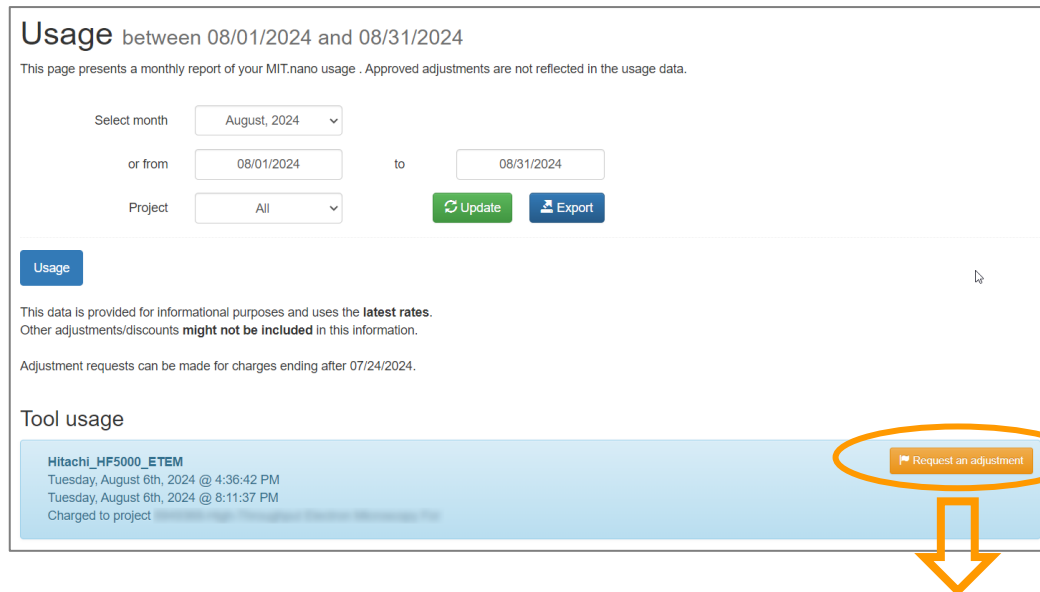
# NEMO User Requests - Making Adjustment Requests from your Usage History



View usage

**Forgot to disengage?**  
Make an adjustment request, specifying the actual time you finished using the tool/instrument.

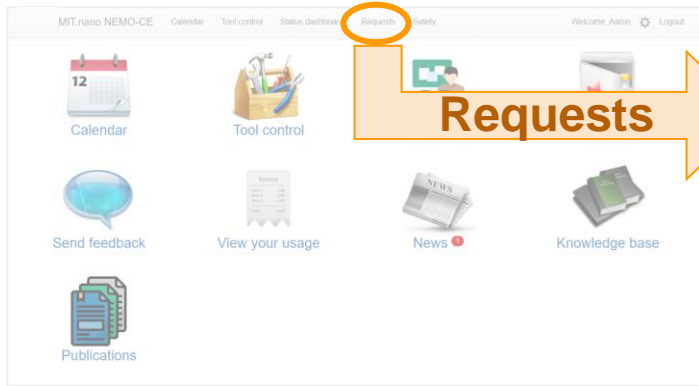
NEMO is designed to send out reminders to disengage if the instrument is still engaged past your reserved time.



Select the usage event you need to adjust, and your request will be sent to the relevant staff (i.e., tool owner) for approval.

**All adjustment requests must be made by 5pm of the last day of the current month.** Once the monthly billing is closed no adjustment request will be accepted.

# NEMO User Requests – Another way to make Adjustment Requests



## Reminder:

Once the monthly billing is closed, adjustment requests can no longer be processed in NEMO.

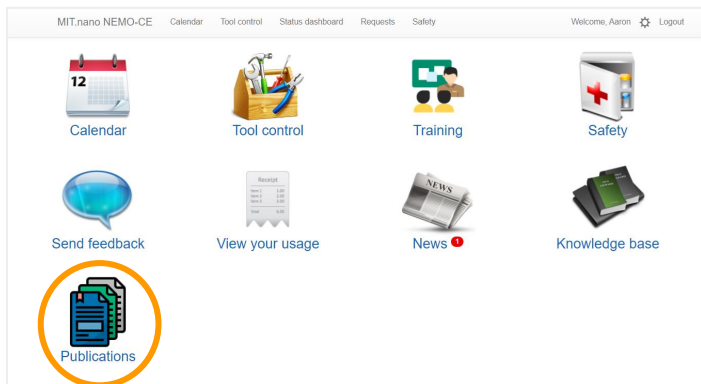


The image shows the 'New adjustment request' form. The form has a 'Charge' dropdown menu (highlighted with an orange oval) and a 'Description' text area. The dropdown menu is currently set to 'General adjustment request'. Below the dropdown, there is a note: 'Only the 10 most recent charges are displayed. To find earlier charges, go to your Usage page and create an adjustment request from there.' At the bottom right of the form, there is a green button labeled 'Create adjustment request'.

The drop down menu will display the 10 most recent charges associated with your account.

Be sure to select the specific charge to ensure your request goes to the relevant staff, or else approval may be delayed.

# NEMO Publications - Add yours to the database!



**Publications**

The 'Publications' page has a header with navigation links and a user welcome message. Below the header, there are tabs for 'Leaderboard' and 'All Publications'. A section for 'Columns' allows filtering by Journal, Month, Year, or Doi. A table lists publications with columns for Title, Authors, Tools, Projects, and Actions. The 'Tools' column for the first entry, 'ThemisZ\_STEM', is circled in orange. An orange arrow points from the 'Add' button in the top right corner to the 'Tools' column. Another orange arrow points from the 'Add Information' button in the 'Actions' column down towards the 'Create publication' form below.

Title	Authors	Tools	Projects	Actions
<a href="#">Perovskite-Derived Layered Crystal Structure in SrCo<sub>0.26</sub>Fe<sub>0.74</sub>O<sub>3-δ</sub> Thin Films</a>	Abinash Kumar (abi1694) Eunsoo Cho (escho) James Lebeau (lebeau)	ThemisZ_STEM		<a href="#">Add Information</a>

**Check out who else uses the same tools!**

**Add your publications simply by entering the DOI.**

## Create publication

Search Publication By DOI

[Search](#)

Adding to the database of publications of work that utilized MIT.nano shared facilities is helpful in many ways, including in applying for funding to bring in new tools and instruments!