

# LEO QUICK START GUIDE

Laboratory & Equipment Operations

# LOG IN [WWW.LEO.PSU.EDU](http://WWW.LEO.PSU.EDU)

- Click on PSU Microsoft Login
- Log in using your PSU user ID and password
- Works best using Chrome browser

## Laboratory Equipment Operations

# LANDING PAGE

- Click on any item in the menu bar, colored box, or icon
- Return to the Landing Page from anywhere within the application by clicking on LEO at the top left
- Logout by clicking on Logout at the top right

LEO   Calendar   Tool control   Area Access   Status dashboard   Welcome, Leeanna   Logout

### Validation Needed

There are items that require validation. Please review them now, they will be automatically validated within 5 days of completion.

### Upcoming reservations

**FESEM: Apreo**  
Starting on Thursday, June 18th @ 11:00 AM  
Ending on Thursday, June 18th @ 12:30 PM


### Alerts & outages

**Resource outage: Test Resource**  
Power outage


### Current laboratory usage

You are using the **FESEM: Apreo** for the project named [09-378] Materials Research Institute - Nanofab F [6391510003] since Wednesday, June 17th, 2020 @ 9:09 PM.


You are not logged in to an access controlled area. [Click here to log in.](#)




Calendar




Tool Control




View Usage/Billing Info




Request a LEO Billing Account




Configuration Agenda



Contact Staff



News



Safety

# YOUR INFORMATION

- Validation Needed
  - Click on the yellow box to validate your usage within 5 days of completion
- Upcoming Reservations
  - Click on green boxes to login to reserved instruments or access areas
- Alerts & Outages
  - Read red boxes for important or urgent information
- Current Usage
  - Click on blue boxes to logout of instruments and areas

LEO

Calendar

Tool control

Area Access

Status dashboard

Welcome, Leeanna

Logout

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Calendar



Tool Control



View Usage/Billing Info



Request a LEO Billing Account



Configuration Agenda



Contact Staff



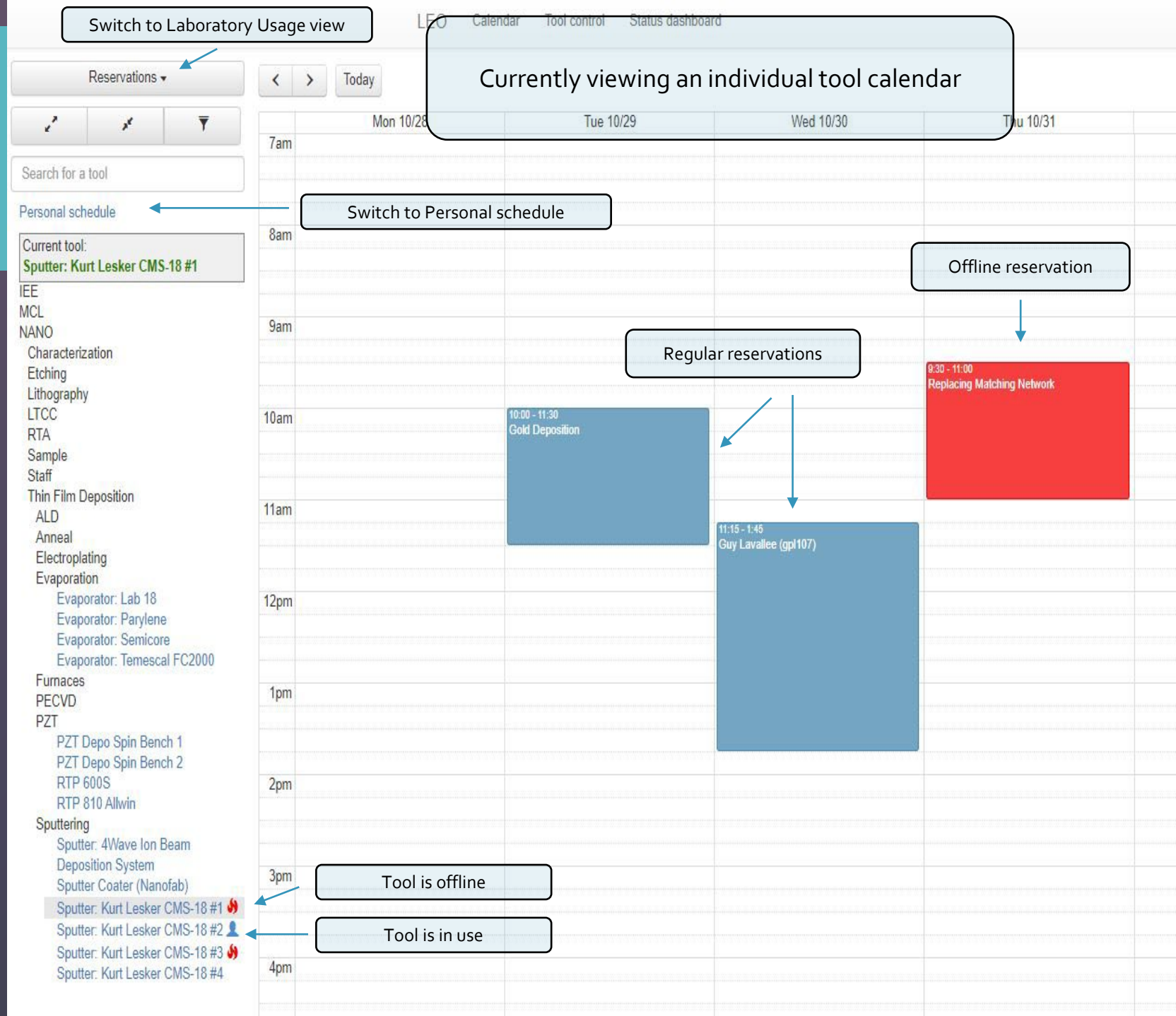
News



Safety

# CALENDAR

- Most Cores require a reservation to log in to a tool
- View Reservations
  - By individual tool
  - Multi-tool display
  - By personal schedule
- View Laboratory Usage
  - By individual tool
  - By personal schedule
- Create, Edit, Cancel Reservations
  - Select any tool configuration options, if applicable





# CALENDAR

- View tool list hierarchy
  - Core Facility
    - Area
      - Technique
        - Tool name
- Expand/Collapse all tool categories
- Show all tools/Show qualified tools only
- Search by any criteria

The screenshot displays the LEO tool reservation system. At the top, navigation links include 'LEO', 'Calendar', 'Tool control', and 'Status dashboard'. The main interface is divided into a left sidebar for tool selection and a right calendar grid.

**Left Sidebar:**

- Reservations** (dropdown menu)
- Toggle buttons and search box** (Annotated with a callout: "Toggle buttons and search box")
- Personal schedule** (link)
- Current tool:** Sputter: Kurt Lesker CMS-18 #1
- Tool List Hierarchy:**
  - IEE
  - MCL
  - NANO
    - Characterization
    - Etching
    - Lithography
    - LTCC
    - RTA
    - Sample
    - Staff
    - Thin Film Deposition
      - ALD
      - Anneal
      - Electroplating
      - Evaporation
        - Evaporator: Lab 18
        - Evaporator: Parylene
        - Evaporator: Semicore
        - Evaporator: Temescal FC2000
    - Furnaces
    - PECVD
    - PZT
      - PZT Depo Spin Bench 1
      - PZT Depo Spin Bench 2
      - RTP 600S
      - RTP 810 Allwin
    - Sputtering
      - Sputter: 4Wave Ion Beam Deposition System
      - Sputter Coater (Nanofab)
      - Sputter: Kurt Lesker CMS-18 #1 (Annotated with a red flame icon)
      - Sputter: Kurt Lesker CMS-18 #2 (Annotated with a blue person icon)
      - Sputter: Kurt Lesker CMS-18 #3 (Annotated with a red flame icon)
      - Sputter: Kurt Lesker CMS-18 #4

# RESERVATIONS

## Reservations

- A valid billing account (project) is required in order to make a reservation
- Tools may have configuration options
  - Select the desired configuration
  - Add any additional information, as needed

The screenshot shows a web interface for making reservations. In the background, there are tabs for 'Control', 'Area Access', and 'Status dashboard'. A modal window titled 'Choose tool configuration' is open, featuring two dropdown menus for 'SCQEMS1' and 'SCQEMS2'. Below these is an unchecked checkbox 'I will configure the tool myself' and a text area for optional additional information. A green button at the bottom right says 'Create this reservation'. A second modal window, 'Which project is this for?', is also open, containing a text instruction and a dropdown menu for selecting a project. Two blue arrows point from the text in the left sidebar to the configuration dropdowns and the project selection dropdown in the modals.

Choose tool configuration

SCQEMS1:

Gold (Au) for Quorum EMS Sputter Coater

SCQEMS2:

Platinum (Pt) for Quorum EMS Sputter Coater

☐ I will configure the tool myself

Do you have anything else to add? (Optional)

Please provide any additional information regarding tool configuration for your reservation (using less than 3000 characters).

Create this reservation

Which project is this for?

Associate your reservation with a project. A fee will be charged to that project if you miss your reservation.

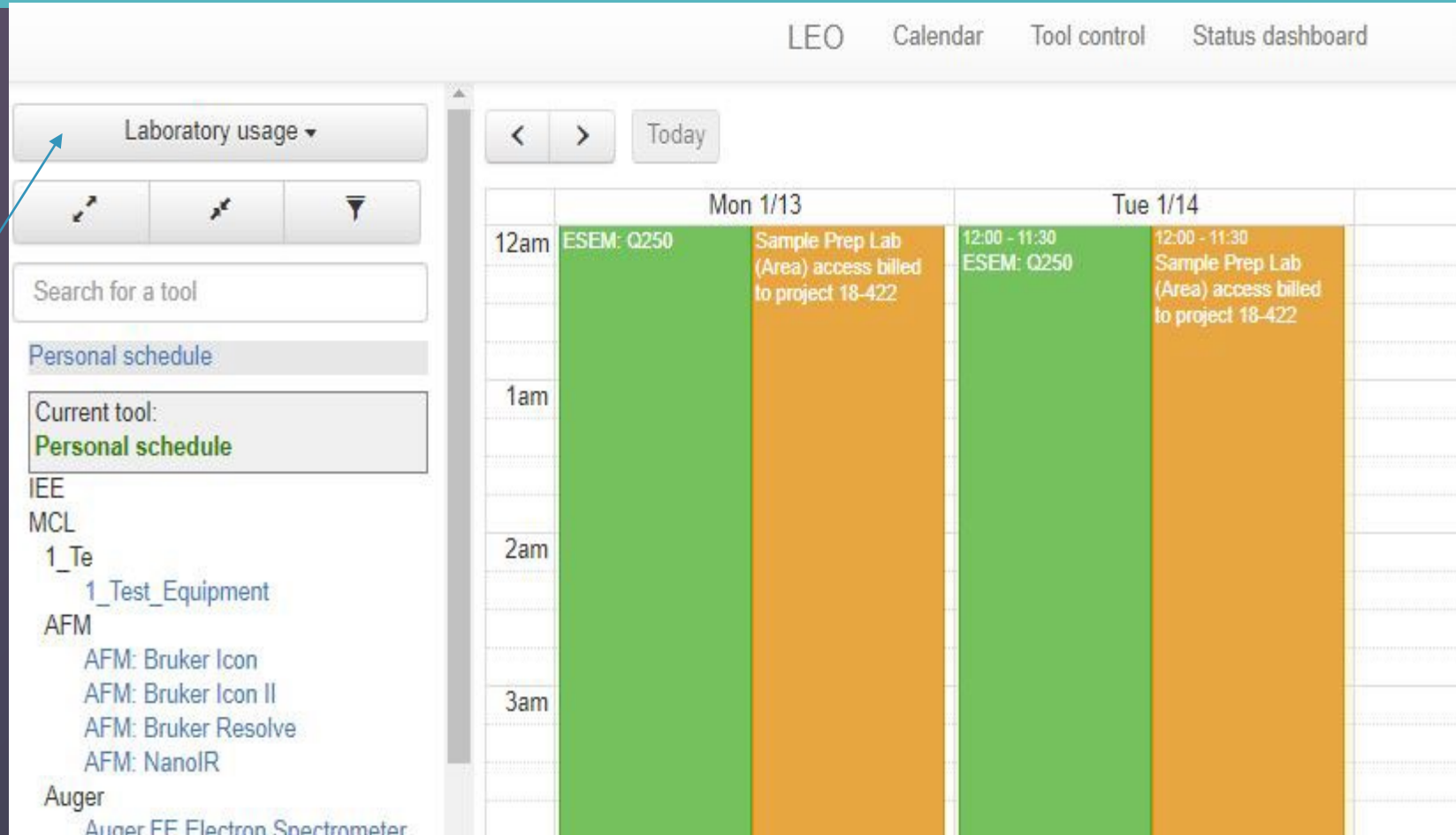
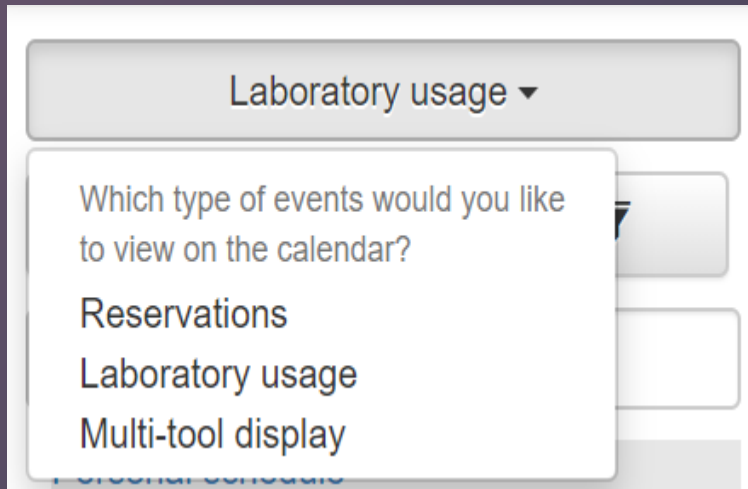
Please select a project

# LABORATORY USAGE VIEW

Laboratory usage view of Personal schedule showing tool use  
and area access login (Sample Prep Lab)

## Laboratory Usage

- Switch from Reservation View to Laboratory Usage view





# TOOL CONTROL

Log in to tools via green  
Upcoming reservations boxes on  
the Landing Page

## Upcoming reservations

### **FESEM: Apreo**

Starting on Thursday, June 18th @ 11:00 AM

Ending on Thursday, June 18th @ 12:30 PM

### **FESEM: Verios**

Starting on Friday, June 19th @ 10:30 AM




Ending on Friday, June 19th @ 11:45 AM

# TOOL CONTROL

## Tool Control - Summary

- Tool is operational and idle
- Click *Start using tool*
- Interlock will open

[LEO](#) [Calendar](#) [Tool control](#) [Area Access](#) [Status dashboard](#)

Current tool:

**Sputter Coater: Quorum EMS 150R S**

EESL

LIME Lab

MCL

Electrical Characterization

Electron Microscopy

Mechanical Testing

Molecular Spectroscopy

MSC Furnace Lab

Optical Microscopy

Particle Technology

Sample Prep

Surface Analysis

Surface Metrology

AFM: Bruker Icon

AFM: Bruker Icon II

AFM: Bruker Resolve 🔥


Nanoindenter 🔥



Profilometer: Zygo NexView 3D 🔧



Thermal Analysis


## Sputter Coater: Quorum EMS 150R


[Summary](#) [Details](#) [Report a problem](#) [Post a comment](#)


 **This tool is operational and idle.**


  This tool is not working properly

  Can a staff member help me with the tool?  
Leeanna Horner (lm14) wrote this comment on Tuesday, June 16th, 2020 @ 8:03 PM

SCQEMS1:  

SCQEMS2:  

Charge tool usage to which project?  
 

 Start using the Sputter Coater: Quorum EMS 150R S

# TOOL CONTROL

## Tool Control – Summary

- Log Out
  - Enter the quantity of all consumables used in the tool run, if applicable
  - Click *Stop using the tool*
  - A confirmation message will appear when you have successfully finished using the tool

### Sputter: Kurt Lesker CMS-18 #1

SummaryDetailsReport a problemPost a comment

You are using this tool for the project named [432-48 1001 C FESEM] since Thursday @ 3:40 PM.

Sputtering is fun  
William Drawl (wrd1) wrote this comment on Monday, January 13th, 2020 @ 2:10 PM

CMS-18 Source #1 Material: Palladium Sputtering

CMS-18 Source #2 Material: Gold Sputtering

CMS-18 Source #3 Material: Aluminum (Al) Sputtering

How much Palladium Sputtering was used?

How much Gold Sputtering was used?

How much Aluminum (Al) Sputtering was used?

☒ Stop using the Sputter: Kurt Lesker CMS-18 #1

×

#### Disable Tool Confirmation

You have successfully finished using the Sputter: Kurt Lesker CMS-18 #1.

Close

# TOOL CONTROL

## Tool Control - Summary

- View of a tool in use

Status Icon:  
This tool is in use

LEO Calendar Tool control Area Access Status dashboard

Cluster Tool: Applied Materials (PECVD)

Summary Details Report a problem Post a comment

You are using this tool

for the project named [13-407] Materials Research Institute - Nanofab F [6391510003] since Thursday @ 8:44 PM.

Please enter a brief description of the work performed, or make any notes you'd find useful for reference

Comment / Description of Run

Stop using the Cluster Tool: Applied Materials (PECVD)

Search for a tool

Current tool:  
**Cluster Tool: Applied Materials (PECVD)**

EESL  
LIME Lab  
MCL  
NANO  
Characterization  
Deposition & Growth  
ALD  
CVD  
**Cluster Tool: Applied Materials (PECVD)**  
Evaporation

# TOOL CONTROL

## Tool Control - Details




LEO

Calendar

Tool control

Area Access

Status dashboard



Search for a tool

Current tool:  
**Nanoindenter**

EESL  
LIME Lab  
MCL  
NANO  
Characterization  
Deposition & Growth  
ALD  
CVD






## Nanoindenter



Summary

Details

Report a problem

Post a comment

  **Tim Tighe (tbt1)** is primarily responsible for this tool and can be contacted with any questions or concerns about the tool.  
Problem reports for the Nanoindenter are automatically emailed to  [tbt1@psu.edu](mailto:tbt1@psu.edu).  
The Nanoindenter is located in room  None.  
You may dial the phone that is closest to the Nanoindenter at extension  814-863-8408.

  Task & comment history for this tool



# TOOL CONTROL

## Tool Control – Report A Problem

LEO

Calendar

Tool control

Area Access

Status dashboard

Welcome, Leeanna

Logout

Search for a tool

Current tool:  
**Nanoindenter**

EESL

LIME Lab

MCL

NANO

Characterization

Deposition & Growth

ALD

CVD

Cluster Tool: Applied Materials (PECVD)

Evaporation

Evaporator: Lab 18

Evaporator: Parylene

Evaporator: Temescal FC2000

## Nanoindenter

Summary

Details

Report a problem

Post a comment

Use this form to report a problem relating to the currently selected tool. The laboratory staff will be notified of the problem by email and the details of the problem will be visible to everyone on the website.

Please provide a **detailed** description of the problem so that the laboratory staff have enough information to resolve the problem efficiently.

☐ This problem represents a safety hazard to the laboratory and should be regarded as urgent. Notify the laboratory safety officer of this issue.

☐ Shut down the tool so that it may not be used until this problem is resolved.

Report problem

# TOOL CONTROL

## Tool Control – Post A Comment

LEO

Calendar

Tool control

Area Access

Status dashboard

Welcome, Leeanna

Logout

Search for a tool

Current tool:  
**Nanoindenter**

EESL

LIME Lab

MCL

NANO

Characterization

Deposition & Growth

ALD

CVD

Cluster Tool: Applied Materials (PECVD)

Evaporation

Evaporator: Lab 18

Evaporator: Parylene

Evaporator: Temescal FC2000

Furnaces & RTAs

Apparatus: MBL (Black Max)

## Nanoindenter

Summary

Details

Report a problem

Post a comment

Use this form to comment on the operating status of the selected tool. The comment will be visible to everyone on the website for **informational purposes**. (Note: if there is something wrong with the tool then please report a problem instead of creating a comment). You may remove the comment at any time because you are its author.

How many days would you like the comment to be visible?

30 days

What would you like to say?

Post comment

# TOOL CONTROL

## Tool Control - Summary

- View of a tool that is offline
- Tool list -- same look and function as calendar tool list

LEO Calendar Tool control Area Access Status dashboard

Search for a tool

Current tool:  
**Nanoindenter**

EESL  
LIME Lab  
MCL  
Electrical Characterization  
Electron Microscopy  
Coater: Denton  
Coater: Emitec  
Coater: Leica

## Nanoindenter

Summary Details Report a problem Post a comment

⚠ This tool is **shut down**.

🔥 > Something is broken

💬 > My sample is stuck in the chamber  
Leeanna Horner (lrm14) wrote this comment on Thursday, June 18th, 2020 @ 8:28 PM

Someone Reported a Problem

Someone Posted a Comment

### Surface Metrology

AFM: Bruker Icon 🕒 ⌚

AFM: Bruker Icon II 🕒

AFM: Bruker Resolve 🕒 🍃

Nanoindenter 🔥

Profilometer: Zygo NexView 3D 🛠

### Status Icons:

This tool has a delayed logout in effect

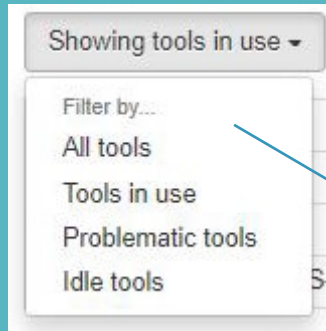
This tool has a scheduled outage

This tool is unavailable because a resource is unavailable

This tool is shut down

This tool requires maintenance

# STATUS DASHBOARD



## Tool Status & usage

- View who is logged in to tools
  - All tools
  - Tools in use
  - Problematic tools
  - Idle tools

# Status dashboard

Area occupancy

Tool status & usage

Showing tools in use ▾

Tool	User	In use since...
ECL: System 1 	Jeff Long (jal13) on behalf of None	Friday @ 12:05 PM
ESEM: Q250 	Leeanna Homer (lrm14)	Thursday @ 3:01 PM
Sputter: Kurt Lesker CMS-18 #2 	William Drawl (wrd1)	Friday @ 10:03 AM

## Area Occupancy

- View who is logged in to access areas

Status dashboard			Area occupancy	Tool status & usage
Staff members are highlighted in green.				
Sample Prep Lab (Area)				
User	Since	Working on project...		
Leeanna Homer	Thursday @ 3:36 PM	18-422		

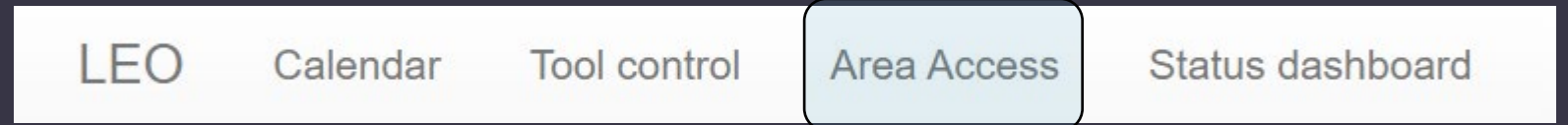
# AREA ACCESS

If you are authorized to use an access-controlled area

- Log in to the area by clicking on the green box or *Area Access* on the main menu

Access Areas include:

- Machine shop
- MCL sample prep lab
- LTCC lab



## Current laboratory usage

You are not logged in to an access controlled area.  
[Click here to log in.](#)



# AREA ACCESS

- Choose a billing account (project)
- Choose the Area

LEO

Calendar

Tool control

Area Access

Status dashboard

## New area access record

Customer: Leeanna Horner (Irm14)

Which of the customer's projects would you like to bill?

- ☐ [09-378] Materials Research Institute - Nanofab F [6391510003]
- ☐ [13-407] Materials Research Institute - Nanofab F [6391510003]
- ☐ [18-422] MRI CONFERENCE [800000008927]
- ☐ [19-005] Research Collaboration Development Progr [6398810000]

Leeanna Horner (Irm14) has access to the following areas. Which would you like to bill for access?

- ☐ Sample Prep Lab
- ☐ LTCC Lab

Create area access record

# AREA ACCESS

- Once logged in to an Area you will see the information on the Landing Page
- Click on top blue box to change the project your access is charged to
- Click on the bottom blue box to log out of the area

### Validation Needed

There are items that require validation. Please review them now, they will be automatically validated within 5 days of completion.

### Upcoming reservations

**Sputter: Kurt Lesker CMS-18 #1**  
Starting on Friday, January 10th @ 1:15 PM  
Ending on Friday, January 10th @ 2:00 PM

### Alerts & outages

**New Ion Beam Etching (IBE) System**  
There is a new IBE system being installed in the cleanroom next to the new Temescal evaporator. Testing and Qualification of the system should begin mid to late January.

### Current laboratory usage

You are using the **Sputter: Kurt Lesker CMS-18 #1** for the project named [432-48 1001 C FESEM] since Thursday, January 9th, 2020 @ 1:48 PM.

You are logged in to the **sample prep lab (area)**. Usage time is being billed to the project named 13-407. Click to bill to a different project at any time.


You are logged into the **sample prep lab (area)**. Click here to log out of the area.




Calendar



Tool Control



View Usage/Billing Info



Request a LEO Billing Account



Configuration Agenda



Contact Staff



RIMSPay



Safety

# TRANSACTION VALIDATION

## Validation Needed

There are items that require validation. Please review them now, they will be automatically validated within 5 days of completion.

Notification of transaction(s) in need of validation will be on the Landing Page

## Validating a Transaction

- You MUST validate all transactions you have performed within 5 days of occurrence.
- After 5 working days, transactions will be auto validated

DO NOT RELY ON AUTO VALIDATION!  
Get into the habit of checking and validating all transactions within 5 working days!

## Transaction validation

This page displays transactions conducted by laboratory staff on behalf of users. You can filter by which staff member performed the work, and when, by using the dropdown boxes below.

Each charge can be validated, which means that you have confirmed that the charge is legitimate and correct, and no adjustment needs to be made to it. Press the green 'Validate' button on an individual row to validate a charge. Charges that have already been validated are highlighted in green.

Each charge can also be contested, which means that an adjustment is needed. Press the yellow 'Contest' button on an individual row to contest the charge. Charges that are already being contested are highlighted in yellow.

View charges for Leeanna Horner during

### Tool usage

ID	Operator	User	Project	Start - End	Duration	Tool	Validate	Contest
129	Leeanna Horner (lrm14)	Leeanna Horner	[432-48 1001 NANO FACIL]	Thursday, January 9th, 2020 @ 3:01 PM - None	In progress	ESEM: Q250	<input type="button" value="Validate"/>	<input type="button" value="Contest"/>
128	Leeanna Horner (lrm14)	Leeanna Horner	[432-43 30KR MIC SCHOOL]	Thursday, January 9th, 2020 @ 2:31 PM - Thursday, January 9th, 2020 @ 3:01 PM	30 minutes 1 seconds	Coater: Denton	<input type="button" value="Validate"/>	<input type="button" value="Contest"/>
127	Leeanna Horner (lrm14)	Leeanna Horner	[432-48 1001 C FESEM]	Thursday, January 9th, 2020 @ 2:20 PM - Thursday, January 9th, 2020 @ 2:29 PM	9 minutes 15 seconds	AFM: Bruker Icon	<input type="button" value="Validate"/>	<input type="button" value="Contest"/>
126	Leeanna Horner (lrm14)	Leeanna Horner	[432-48 1001 C FESEM]	Thursday, January 9th, 2020 @ 1:48 PM - Thursday, January 9th, 2020 @ 1:57 PM	8 minutes 29 seconds	Sputter: Kurt Lesker CMS-18 #1	<input type="button" value="Validate"/>	<input type="button" value="Contest"/>
88	Leeanna Horner (lrm14)	Leeanna Horner	[432-48 1001 C FESEM]	Wednesday, November 6th, 2019 @ 10:51 AM - Wednesday, November 6th, 2019 @ 10:51 AM	12 seconds	Sputter Coater: Quorum EMS 150R S	<input type="button" value="Validate"/>	<input type="button" value="Contest"/>

# TRANSACTION VALIDATION

- Black – Waiting for validation
- Yellow – Contested
- Green – Validated
- Red – Contested & Denied

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View charges for Leeanna Horner during January, 2020 Update

### Tool usage

ID	Operator	User	Project	Start - End	Duration	Tool	Validate	Contest
129	Leeanna Horner (lrm14)	Leeanna Horner	[432-48 1001 NANO FACIL]	Thursday, January 9th, 2020 @ 3:01 PM - None	In progress	ESEM: Q250	Validate	Contest
128	Leeanna Horner (lrm14)	Leeanna Horner	[432-43 30KR MIC SCHOOL]	Thursday, January 9th, 2020 @ 2:31 PM - Thursday, January 9th, 2020 @ 3:01 PM	30 minutes 1 seconds	Coater: Denton	Validate	Contest
127	Leeanna Horner (lrm14)	Leeanna Horner	[432-48 1001 C FESEM]	Thursday, January 9th, 2020 @ 2:20 PM - Thursday, January 9th, 2020 @ 2:29 PM	9 minutes 15 seconds	AFM: Bruker Icon		
126	Leeanna Horner (lrm14)	Leeanna Horner	[432-48 1001 C FESEM]	Thursday, January 9th, 2020 @ 1:48 PM - Thursday, January 9th, 2020 @ 1:57 PM	8 minutes 29 seconds	Sputter: Kurt Lesker CMS-18 #1	Validate	Contest
88	Leeanna Horner (lrm14)	Leeanna Horner	[432-48 1001 C FESEM]	Wednesday, November 6th, 2019 @ 10:51 AM - Wednesday, November 6th, 2019 @ 10:51 AM	12 seconds	Sputter Coater: Quorum EMS 150R S	Validate	Contest



# TRANSACTION VALIDATION

## Contesting a transaction

- Enter the correct information in the appropriate fields
- Enter a Contest Reason and a Contest Description
- Contested transaction will be accepted or denied by a staff member

## Contest Usage Event

You have selected the Usage Event detailed below to contest. Please select a general reason this item should be contested and enter a description of the specifics. Once this form is submitted the Usage Event will be placed in contested status until an administrator can review the record and address it as needed.

Tool	Coater: Denton		
Start	2020-01-09 14:31:37		
End	2020-01-09 15:01:39		
Operator	Leeanna Horner (lrm14)		
Customer	Project	Percent	
Leeanna Horner (lrm14)	[432-48 1001 C FESEM] [13-407]	100.00	
Contest Reason			
Incorrect project selection			
Contest Description			
<div>Please charge this usage to the above selected project</div>			
Contest Usage Event			



# LEO REPORTS



LEO Reports

LEO Reports

InvoicesTransactionsAssociated TransactionsBilling SummaryDunningsConsumable RateARSO SpendiFactor2DCC

Transactions

Export to CSV

F&A Rate Conversion Calculator

Input:Rate Type:Fiscal Year:Conv Unburdened to BurdenedOutput:

Academic20232024Conv Burdened to Unburdened

Today's charges will appear on this report within 24 hours. The Autovalidated column when "True" represents a transactions that was validated by the system because it exceeded its 5 day window to be manually validated and was not contested. Also note end times highlighted in bold red represent unvalidated transactions associated with projects that have ended or will end within then next 30 days.

Start DateEnd Date

<August 2023>

SunMonTueWedThuFriSat

303112345678910111213141516171819202122232425262728293031123456789

<August 2023>

SunMonTueWedThuFriSat

303112345678910111213141516171819202122232425262728293031123456789

Reset

Calendars

Rate TypeContestedContest ReasonAutovalidatedValidated

Select All

Select All

Select All

Select All

FYBilling MonthCore NamePerformed ByPerformed ForProject NameProject NumberProduct TypeNotes

202320248/2023Select Allspaar

Select All

Billing Month	Performed By	Performed For	Start Time	End Time	Project Name	Project Number	Product Type	Proj %	Product	Quantity	Invoiced Quantity	Units Billed	Rate Type	Notes	Contested	Contest Reason	Autovalidated	Validated
8/2023	Spaar, David	Horner, Leeanna	08/01/2023 11:13:36 AM	08/02/2023 8:42:06 AM	Nanofab Maintenance	20-241	StaffCharge	100.00	StaffCharge	21.48	21.48	Hours	\$0.00	Internal	False		True	✓
8/2023	Spaar, David	Horner, Leeanna	08/01/2023 11:13:36 AM	08/02/2023 8:42:04 AM	Nanofab Maintenance	20-241	ToolUse	100.00	DEV Dummy Tool 2	21.48	21.48	Hours	\$0.00	Internal	False		True	✓
8/2023	Spaar, David	Horner, Leeanna	08/01/2023 11:13:36 AM	08/01/2023 12:10:11 PM	Nanofab Maintenance	20-241	AreaAccess	100.00	Sample Prep Lab	0.95	0.95	Hours	\$0.00	Internal	False		True	✓

## LEO Reports: Transactions Report

Another option for checking transactions

- View/sort by any column heading