

*2015 Materials Commons Training*

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## Welcome

- You can find these slides at:
  - <https://github.com/materials-commons/mctraining/blob/master/slides/2015%20Materials%20Commons%20Training.pdf>
  - Or: <https://github.com/materials-commons/mctraining>.
    - Under the “slides” directory
- This will be a step by step tutorial
- We will go through all the core functionality for Materials Commons and show you how to use them
  - At each step we will explain the concepts
  - You may want to keep a link to the slides and refer to them when you start using Materials Commons
- There are approximately 90 slides so lets get started

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## Materials Commons Is

- A place to safely store and version your data
- A tool for capturing your provenance workflow
- A search engine for quickly finding files and data
- A way to organize your work in projects
- A site for project collaboration and sharing

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## Definitions

- Process
  - Measures or changes samples and data
  - Changing a sample is known as a “transformation”. Examples: Heat Treatment, Sectioning, Cogging
- Template
  - A template describes a process including
    - Required and optional fields/settings
- Sample
  - The object to measure or change
- Attribute
  - What we are measuring. Examples: Length, composition, particle size distribution

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## Typical Workflow

1. Create a project or use an existing one
  2. Create Samples
  3. Upload files and data
  4. Attach Provenance
  5. Collaborate
  6. Exploration and Notes
  7. Analysis
-

# Materials Commons

The login form consists of two input fields: 'Email...' and 'Password...', both with placeholder text and a required asterisk (\*). Below the fields is a large blue rectangular button with the word 'Login' in white capital letters.

Email...

Password... \*

Login



PROVENANCE



SAMPLES



REVIEWS



FILES



NOTES

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## Logging In

- You will have a starting account and project.
    - Account projX@mc.org (where X is a number, eg proj1@mc.org)
    - Password: training
  - Your starting home screen should look similar to the next slide
  - All projects will look the same
-

proj1 1

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)

## PROCESSES

No Processes.

## SAMPLES

No Samples

## REVIEWS

No Reviews.

## FILES

proj1

- [Al+Mn-isosurface+ROI-composition-2-mN.BMP](#)
- [Al+Mn-isosurface+ROI-composition-2-zn.BMP](#)
- [Al+Mn-isosurface+ROI-composition-2.BMP](#)
- [Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP](#)
- [Al+Mn-isosurface+ROI-composition-ZN.BMP](#)
- [Al+Mn-isosurface+ROI-composition.BMP](#)

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## Materials Commons Home Screen Overview

- Now we will review the Home Screen and how to navigate around the Materials Commons web application
  - The next set of screens have additional information on them that aren't yet in your home screen
    - The layout is the same - the additional information is for demonstrations purposes only
-

MaterialsCommons

SEARCH PROJECT...

AZ91 Precipitation Evolut... 27

Home Processes Files Samples Reviews Settings

Switch/Create Projects

Main Navigation Tabs

Processes ! Processes tab gives access to processes and provenance

Files ! Files tab allows you to see your directory tree and files

Samples ! Samples tab gives you access to all your samples

Reviews ! Reviews tab allows you to see outstanding requests and create new ones

Settings ! Settings tab allows you to manage project access and collaborations

SAMPLES

Search Project

Account Settings and Logout

today < >

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

1 notes  
1 samples  
2 processes

The screenshot displays the MaterialsCommons web application interface. At the top, there is a navigation bar with tabs for Home, Processes, Files, Samples, Reviews, and Settings. The 'Processes' tab is currently selected. To the left of the navigation bar, there is a 'Switch/Create Projects' section. The main content area is divided into several sections: 'Main Navigation Tabs' (with descriptions for Processes, Files, Samples, Reviews, and Settings), a 'SAMPLES' section with a 'Search Project' button, and a 'Account Settings and Logout' link. On the right side, there is a calendar for the current month, showing the days from Sunday to Saturday. Below the calendar, there are summary statistics: 1 note, 1 sample, and 2 processes.

MaterialsCommons

SEARCH PROJECT...

AZ91 Precipitation Evolut... 27 Home Processes Files Samples Reviews Settings Help gtarcea@umich.edu

**PROCESSES**

APT Data Analysis - 08/21/2015 @ 1:38PM gtarcea@umich.edu Fri Aug 21 2015

As Received - 08/21/2015 @ 1:38PM gtarcea@umich.edu Fri Aug 21 2015

**SAMPLES**

sample1 gtarcea@umich.edu Fri Aug 21 2015

**REVIEWS**

No Reviews.

**FILES**

AZ91 Precipitation Evolution  
AZ91 APT results  
APT results for AZ91  
Dataset 1  
Al+Mn-isosurface+ROI-composition-2-mN....  
Al+Mn-isosurface+ROI-composition-2-zn.B...  
Al+Mn-isosurface+ROI-composition-2.BMP

**NOTES**

object.png note gtarcea@umich.edu Fri Aug 21 2015 My note

The Panels on screen give you an overview of your project

The calendar lets you see your history of events such as process and sample creation

August 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

today < >

AZ91 Precipitation Evolut...

Home

Processes

Files

**P PROCESSES**

APT Data Analysis - 08/21/2015 @ 1:39PM gtarcea@umich.edu

Fri Aug 21 2015

As Received - 08/21/2015 @ 1:38PM gtarcea@umich.edu

Fri Aug 21 2015

**1. Click on an item to see an overview of it****R REVIEWS**

No Reviews.

**N NOTES**

object.png note

gtarcea@umich.edu

Fri Aug 21 2015

My note

**APT Data Analysis - 08/21/2015 @ 1:39PM****DETAILS:**

Description about process:

--None--

Reason you performed the process:

--None--

Owner: gtarcea@umich.edu

Does Transform: false

**SETUP: SYSTEM INFORMATION****SAMPLES:**

sample1

Fri Aug 21 2015, gtarcea@umich.edu

**FILES:**

Files Used:



R38\_01710-v01-FIXED BIN-0.2NM.BMP

Files Produced:

--None--

OK

Cancel

**Overview popup of process****August 2015**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

today < >

1 notes  
1 samples  
2 processes

---

## Materials Commons Help

- Materials Commons has an online help guide
  - The help guide is available in the app and you can activate from each page
  - The help guide is a key to supporting Materials Commons
    - We will be expanding the help guide and adding additional help features as we go forward
-

AZ91 Precipitation Evolut... 27

Home

Processes

Files

Samples

Reviews

Settings

## PROCESSES

Measurement of the length and width of Mg1: maojias@umich.edu

Mon Aug 31 2015

Measurement of the length and width of Mg1: maojias@umich.edu

Thu Aug 27 2015

Measurement of the length and width of Mg1: maojias@umich.edu

Mon Aug 31 2015

SVDC AZ91 magnesium alloy: maojias@umich.edu

Thu Aug 27 2015

## REVIEWS

No Reviews.

## SAMPLES

Aging treatment at 168C for 10 hours

maojias@umich.edu Thu Aug 2

Aging treatment at 168C for 5 hours

maojias@umich.edu Thu Aug 27 2015

Aging treatment at 168C for 50 hours

maojias@umich.edu Thu Aug 27 2015

## FILES

AZ91 Precipitation Evolution

AZ91 APT results

AZ91 TEM results

1. Click Help to open our online help guide

The help guide is available in any window

AZ91 Precipitation Evolut... 27

Home

Processes

Files

Samples

Reviews

Settings

**Maximize guide**

**Close guide**

**Draft**

**PROCESSES**

Measurement of the length and width of Mg11: maojias@u...  
Mon Aug 31 2015

Measurement of the length and width of Mg11: maojias@u...  
Thu Aug 27 2015

SVDC AZ91 magnesium alloy maojias@u...  
Thu Aug 27 2015

**REVIEWS**

No Reviews.

**SAMPLES**

Aging treatment at 168C for 10 hours  
maojias@umich.edu Thu Aug 27 2015

Aging treatment at 168C for 5 hours  
maojias@umich.edu Thu Aug 27 2015

Aging treatment at 168C for 50 hours  
maojias@umich.edu Thu Aug 27 2015

**FILES**

**Toggle userguide open/closed**

AZ91 Precipitation Evolut... 27

Home

Processes

Files

Samples

Reviews

Settings

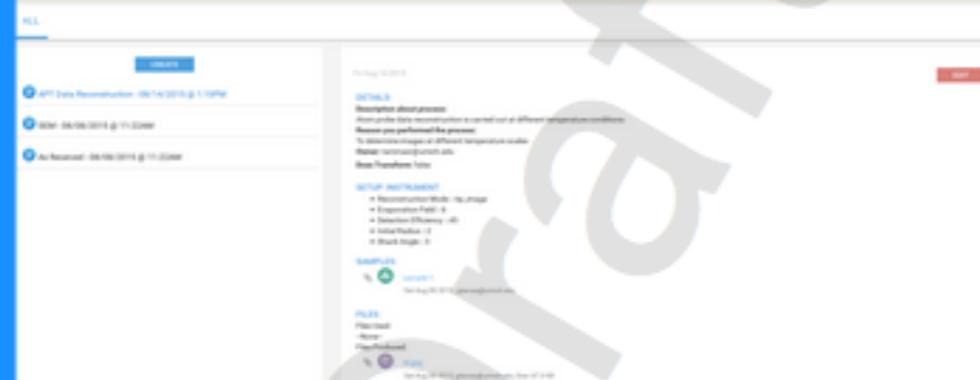
Reviews

Samples

Processes

## Provenance

Provenance panel will list all the processes created for a project.



### How to create a provenance:

#### Step1 : Choose Template/Process

In order to create provenance first you have to choose a Process. Based on the process you choose, setup attributes may vary.

#### Choose Template



**1. Scroll down and click on Processes**

## REVIEWS

No Reviews.

**Help section for processes opens  
(depending on your screen size it  
might be hard to read)**

## NOTES

No Notes.

Aging treatment at 168C for 50 hours

miaojas@umich.edu

Thu Aug 27 2015

## FILES

AZ91 Precipitation Evolution

AZ91 APT results

AZ91 TEM results

## September 2015

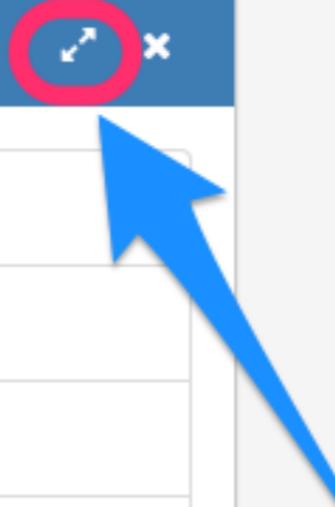
today < >

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31	1	2	3	4	5
	3 proces					
6	7	8	9	10	11	12

AZ91 Precipitation Evolut... 27

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)

**Userguide (Draft)**



[Glossary](#)

[Nav bar](#)

[Home Page](#)

[Reviews](#)

[Samples](#)

[Processes](#)

## Provenance

Provenance panel will list all the processes created for a project.

How to create a provenance:

Step1 : Choose Template/Process

In order to create provenance first you have to choose a template or process from the dropdown menu. Then click on the 'Create' button. A new window will open where you can enter the details of the process. Once you have entered the details, click on the 'Save' button. The process will be listed in the provenance panel.

## PROCESSES

**Lets solve the readability problem!**

1. Click the maximize icon to make the userguide larger.

SVDC AZ91 magnesium alloy maojas@umich.edu Thu Aug 27 2015

## REVIEWS

No Reviews.

## SAMPLES

treatment at 168C for 10 hours maojas@umich.edu Thu Aug 27 2015

treatment at 168C for 5 hours maojas@umich.edu Thu Aug 27 2015

treatment at 168C for 50 hours maojas@umich.edu Thu Aug 27 2015

## FILES

- AZ91 Precipitation Evolution
- AZ91 APT results
- AZ91 TEM results

**Userguide (Draft)**[Glossary](#)[Nav bar](#)[Home Page](#)[Reviews](#)[Samples](#)[Processes](#)

Provenance panel will list all the processes

ALL

CREATE

[APT Data Reconstruction - 08/14/2015 @ 1:10PM](#)[SEM - 08/08/2015 @ 11:22AM](#)[As Received - 08/08/2015 @ 11:22AM](#)

Fri Aug 14 2015

**DETAILS:**

Description about process:

Atom probe data reconstruction is carried out at different temperature conditions

Reason you performed the process:

To determine images at different temperature scales

Owner: tammasr@umich.edu

Does Transform: false

SETUP: INSTRUMENT

**The arrows changed to indicate that we can shrink the window**

**This is what the guide looks like when it is maximized.**

**You can switch between small and large window size. This allows you to keep the guide open while you are working and refer back to it - increasing its size when it helps with readability.**

EDIT

AZ91 Precipitation Evolut... 27

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)

**Userguide (Draft)**

Glossary

Nav bar

Home Page

Reviews

Samples

## Samples

Panel will list all the samples inside a project. When you click on the sample name you can see more information about the sample.

ALL SAMPLES

sample1

HEAD

DETAILS

Name: sample1  
Owner: gtarcea@umich.edu  
Description:

TRANSFORMATION

This section will provide sample 1 initial measurements and how these measures have been transformed overtime.

As Received - 06/06/2015 @ 11:23AM

Length: 8mm  
Width: 6mm  
Thickness: 2mm

Measurements

APT Data Reconstruction - 06/14/2015 @ 1:10PM  
APT Data Reconstruction - 06/14/2015 @ 1:10PM

FILES

APT  
Sat Aug 29 2015, 07:24 AM

APT Data Reconstruction - 06/14/2015 @ 11:09AM  
APT Data Reconstruction - 06/06/2015 @ 11:23AM

How to create sample:  
Sample creation is driven through process. "As Received" is a process which allows to create new

Draft

## ALL SAMPLES

Aging treatment at

Aging treatment at

Aging treatment at  
168C for 50 hours

## 1. Click Samples tab (with help guide open)

### DETAILS

Name: Aging treatment at 168C for 10 hours

Owner: miaojas@umich.edu

### Description:

The samples were solution treated at 413C for 20 hours followed by aging treatment at 168C

### TRANSFORMATION

This section will provide Aging treatment at 168C for 10 hours initial measurements and how these measures have been transformed overtime.

**The guide is available on all tabs**

**Here we see the guide open  
when we are on the samples  
screen.**

**Note: Right now the guide doesn't switch to the section corresponding to the tab you are on.**

## Creating Your First Sample

- All starting samples are created through a process called “As Received”. “As Received” is an example of a “Process Template”
- The only required field is the sample name
- You will have an “As Received” process for every starting sample
- A starting sample is a sample that wasn’t created in some other way
  - For example if you section a process only the starting sample has an “As Received” process. The samples created by sectioning do not have an “As Received” process.

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## Process Templates and Transformations

- Process templates describe different process types
- A process performs an action such as measurement or transformation
- A transformation changes a sample in some way. For example heat treatment, polishing, or sectioning are all examples of transformations.
- A measurement process takes measurements of an attribute. Example attributes are composition, length, and particle size distribution
  - Measurements have different types such as fraction, number, histogram, and many others
  - Many attribute measurements also have units

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## Definitions Again

- Process
  - Measures or changes samples and data
  - Changing a sample is known as a “transformation”. Examples: Heat Treatment, Sectioning, Cogging
- Template
  - A template describes a process including
    - Required and optional fields/settings
- Sample
  - The object to measure or change
- Attribute
  - What we are measuring. Examples: Length, composition, particle size distribution

MaterialsCommons

SEARCH PROJECT...

Help

proj1@mc.org

1. Click Process tab

2. Press Create button

3. Optionally filter list by typing name  
(Here we filtered list by typing "As R")

4. Select "As Received"

5. Press "OK" to use this template

You can view template details after you have selected a template

As R

As Measured

As Received

Description: As Received process is used to create new samples.

Type: as\_received

Transforms Sample: false

Files Used:

Files Produced:

Setup:

- Manufacturer ::

Type: string

Unit:

Required: false

OK Cancel

1362 x

MaterialsCommons

SEARCH PROJECT... Help proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

As Received - 08/27/2015 @ 12:28PM Back to processes list

How would you describe your process?  
What

Why did you do this?  
Why

Set Up

New Sample

Samples

Files Used

Files Produced

**1. Optional change process name**

**2. Add descriptives  
(These are used as context reminders and also help in searches.)**

**3. Add any process setup details**

**4. Name your sample**

**5. Describe your sample**

This area will display the information entered on the right

Also used for context and searches

Bug in this release, these won't work.  
(Fix is pending workshop)

Files

What files are used by this process?  
+ ADD

What files are produced by this process?  
+ ADD

CANCEL SUBMIT

As Received - 08/27/2015 @ 12:28PM

[Back to processes list](#)**How would you describe your process?**

This is for details that describe the process. For example I found this sample lying under a table and decided to use it.

**Why did you do this?**

This is for details that describe why you did it. For example I created this sample so I could test cycles to failure on a dusty cropopper toy plane.

**Set Up**

- Manufacturer :: Under the couch

**New Sample**

Name: sample1

Description: This describes details of the sample. For example this sample is a plastic and metal dusty cropopper toy plane from the Planes: Fire and Rescue movie.

**Samples****Files Used****Files Produced****Name your process**

As Received - 08/27/2015 @ 12:28PM

**How would you describe your process?**

This is for details that describe the process. For example I found this sample lying under a table and decided to use it.

**Why did you do?**

This is for details that describe why you did it. For example I created this sample so I could test cycles to failure on a dusty cropopper toy plane.

**+ Setup****Create Sample****Name your sample**

sample1

**How would you describe your sample?**

This describes details of the sample. For example this sample is a plastic and metal dusty cropopper toy plane from the Planes: Fire and Rescue movie.

**Files****What files are used by this process?**

- + ADD

**What files are produced by this process?**

- + ADD

**Details we filled out in template****Template after filling out entries. Note left side shows us the details we have filled in.****1. Press Submit to finish****CANCEL****SUBMIT**

MaterialsCommons

SEARCH PROJECT...

Help proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

ALL

## Processes View After Submit

**CREATE**

**p As Received - 08/27/2015 @ 12:28PM**

**Thu Aug 27 2015**

**DETAILS:**  
Description about process:  
This is for details that describe the process. For example I found this sample lying under a table and decided to use it.  
Reason you performed the process:  
This is for details that describe why you did it. For example I created this sample so I could test cycles to failure on a dusty cropopper toy plane.  
Owner: proj1@mc.org  
Does Transform: false

**SETUP: INSTRUMENT**  
• Manufacturer :: Under the couch

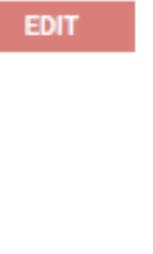
**SAMPLES:**  
 sample1   
Thu Aug 27 2015, proj1@mc.org

**FILES:**  
Files Used:  
--None--  
Files Produced:  
--None--

**1. Click to get quick popup view of an item**

**List of all Processes**

**Process Details**

**Click Edit to change details of your process** 

MaterialsCommons

proj1 1 Home Processes Files Samples

SEARCH PROJECT... Help proj1@mc.org

sample1

ALL

CREATE

As Received - 08/27/2015 @ 12:28PM

EDIT

DETAILS

Name: sample1 \* :: Denotes current process measurements

Owner: proj1@mc.org

Description:

This describes details of the sample. For example this sample is a plastic and metal dusty crop hopper toy plane from the Planes: Fire and Rescue movie.

PROPERTIES

ATTACHMENTS

OK Cancel

After clicking on sample we get a quick view popup

MaterialsCommons

SEARCH PROJECT... Help proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

ALL SAMPLES

sample1

**1. To see all your samples click "Samples" tab**

**Selected sample details**

**List of all samples in project**

Detailed description: The screenshot shows a web-based application for managing samples. At the top, there's a dark header bar with the 'MaterialsCommons' logo, a search bar, and user authentication info ('proj1@mc.org'). Below the header is a navigation bar with tabs: 'Home', 'Processes', 'Files', 'Samples' (which is highlighted in blue), 'Reviews', and 'Settings'. The main content area has a title 'ALL SAMPLES' followed by a list of samples. The first sample in the list is 'sample1', which is highlighted with a large blue rounded rectangle. To the right of 'sample1' is a detailed information card also enclosed in a blue rounded rectangle. This card contains sections for 'DETAILS' (Name: sample1, Owner: proj1@mc.org, Description: a plastic and metal dusty crophopper toy plane from the Planes: Fire and Rescue movie), 'TRANSFORMATION' (As Received - 08/27/2015 @ 12:28PM), and 'FILES' (an empty section). Three annotations are present: a blue arrow points to the 'Samples' tab; a green arrow points to the 'ALL SAMPLES' list; and another green arrow points to the detailed information card for 'sample1'.

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## Adding measurements and transformations

- The next step is to start adding measurements to your sample
  - Here we are going to measure the existing sample
  - After that we will apply a transformation process
    - A transformation process changes our sample in some way
  - After the transformation we will look at the state of our measurements
    - We could then perform additional measurements after the transformation

CREATE

As Recd

**1. Click Create to choose a template**

## Choose Template

Search ...

Annealing

APT

APT Data Analysis

APT Data  
Reconstruction

As Measured

As Received

Broad Ion Beam Milling

Cogging

Compression

Computation

### As Measured

- Description: As Measured process allows you to add in all your As Received measurements
- Type: OTHER
- Transforms Sample:false
- Files Used:
- Files Produced:
- Setup:

**2. Select "As Measured".**

**This is a catch all template to use when none of the other processes seems to fit.**

OK

Cancel

**3. Press "OK" to use this template.**

**ALL****As Measured - 08/27/2015 @ 1:38PM**[◀ Back to processes list](#)**How would you describe your process?****Why did you do this?****Set Up****Samples****Files Used****Files Produced****Name your process**

As Measured - 08/27/2015 @ 1:38PM

**How would you describe your process?**

What

**Why did you do?**

Why

[+ Setup](#)**Samples**[+ ADD](#)**Files****What files are used by this process?**[+ ADD](#)**What files are produced by this process?**[+ ADD](#)**To add your sample click the "+ ADD" button.****You will be shown a list of samples. Though only one is shown, if there were other samples you could select more than one.**

proj1 1 Home Processes

How would you describe your process?

Why did you do this?

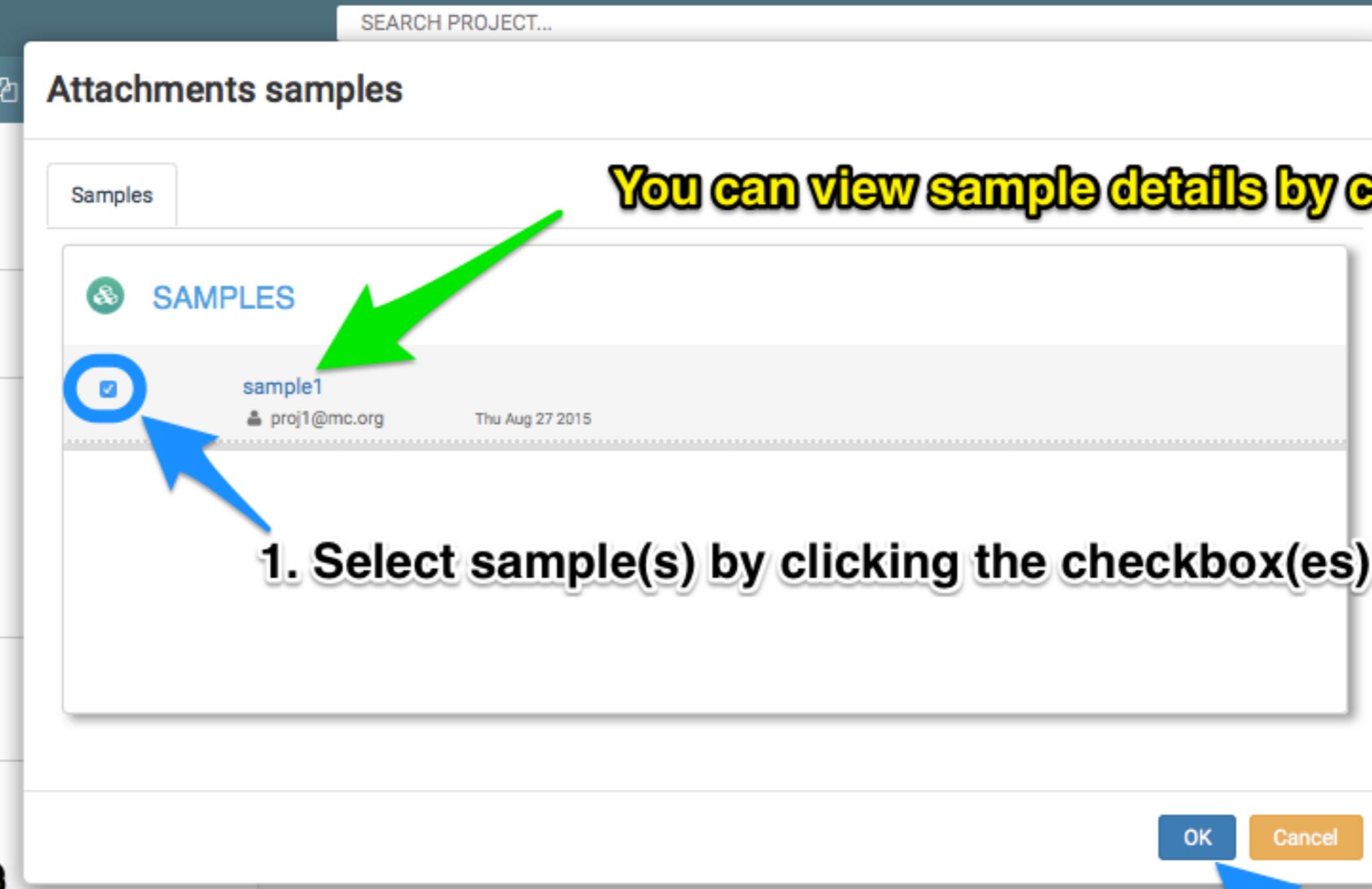
Set Up

Samples

sample1

Measurements:

Files:

Files Used  
Files Produced**Your selected samples  
will show up here**

Files

What files are used by this process?

+ ADD

What files are produced by this process?

+ ADD

CANCEL

SUBMIT

**2. Press "OK" when you are  
done picking samples.**

---

## Files types

- Before adding files lets discuss the different file types
- Files can be associated with
  - A process
    - A file associated **only** with a process doesn't directly have anything to do with the sample
      - Its descriptive to the process
      - Example: Code for transforming data
    - A process and samples
      - A file associated with a process and a sample is associated with the process, but describes the sample
        - Example: Image showing sample grains
  - Files are either inputs to a process
    - Or outputs from a process
  - Input Files
    - Files/data used by the process
  - Output Files
    - Files/data produced by the process
  - Output files from one process can be used as inputs to another process
    - This links the processes together in a flow

proj1 1

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)

How would you describe your process?

Why did you do this?

Set Up

Samples



Measurements:

Files:

Files Used

Files Produced

How would you describe your process?

What

Why did you do?

Why

+ Setup

Samples



sample1

+ Measurement



Files

What files are used by this process?



What files are produced by this process?



CANCEL

SUBMIT

1. Add files used or produced by this process by clicking on the appropriate "+ ADD" button.

proj1 1 Home Processes

How would you describe your process?

Why did you

**You search for files by typing in a search string**

Set Up

**Or you can click through the directory tree**

- proj1
  - Al+Mn-isosurface+ROI-composition-2-mN.BMP
  - Al+Mn-isosurface+ROI-composition-2-zn.BMP
  - Al+Mn-isosurface+ROI-composition-2.BMP
  - Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP
  - Al+Mn-isosurface+ROI-composition-ZN.RMP

Measurements:  
Files:  
Files Used  
Files Produced**Click on a file will show you a quick popup of it****1. Choose one or more files by selecting their checkboxes**

OK Cancel

**2. Press "OK" when done**

## Files

What files are used by this process?

+ ADD

What files are produced by this process?

+ ADD

CANCEL

SUBMIT

proj1 1 Home Processes

How would you describe your process?

Why did you do this?

Set Up

Samples



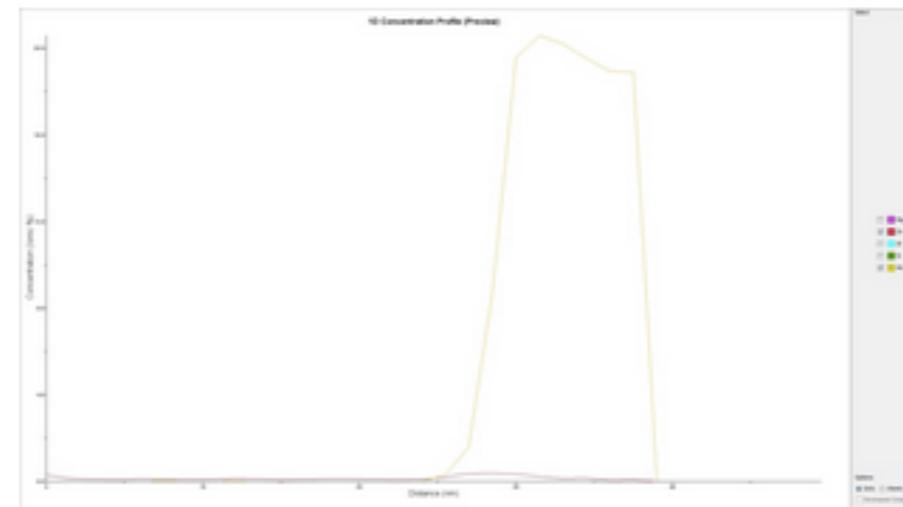
Measurements:

Files:

Files Used

Files Produced

## Al+Mn-isosurface+ROI-composition-2-mN.BMP



Owner: proj1@mc.org

Size: 5.91 MB

Created: Thu Aug 27 2015

Modified:

Media Type: image/bmp

Notes:

The file popup will display the image or contents if it is supported.

OK

Cancel

- Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP
- Al+Mn-isosurface+ROI-composition-ZN.BMP

OK

Cancel

## Files

What files are used by this process?



What files are produced by this process?



CANCEL

SUBMIT

proj1 1

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)

How would you describe your process?

Why did you do this?

Set Up

Samples

sample1

Measurements:

Files:

Files Used

Al+Mn-isosurface.BMP

R38\_01584-v02-2.indexed.csv

Files Produced

**Files we selected**

How would you describe your process?

What

Why did you do?

Why

+ Setup

Samples

+ ADD

sample1

Measurement

Link input files to sample

Files

What files are used by this process?

+ ADD

Al+Mn-isosurface.BMP

R38\_01584-v02-2.indexed.csv

What files are produced by this process?

+ ADD

1. Now that we've selected files a new link has appeared underneath our sample. Click it to associate file(s) with the sample (and not just with the process).

proj1 1 Home Processes Files Samples

How would you describe your process?

Why did you do this?

Set Up

Samples



**1. Click Link all files  
This will associate  
all listed files with  
the sample.**

Mea

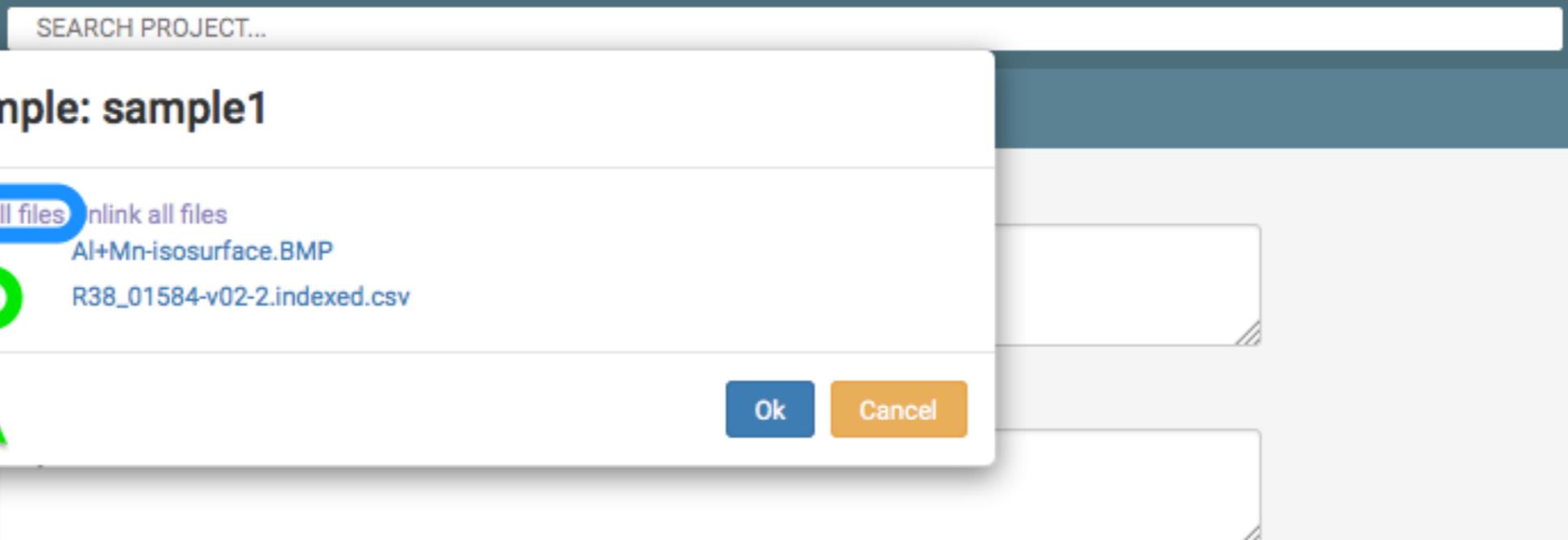


Files:

Files Used



Files Produced



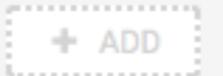
Ok

Cancel

**You can also choose  
individual files to associate  
with a sample.**

## Files

What files are used by this process?



What files are produced by this process?



How would you describe your process?

Why did you do this?

Set Up

Samples



Measurements:

Files:

- Al+Mn-isosurface.BMP
- R38\_01584-v02-2.indexed.csv

Files Used



Files Produced

**Files linked to sample**

How would you describe your process?

What

Why did you do?

Why

+ Setup

Samples



Measurement

% Link input files to sample

Files

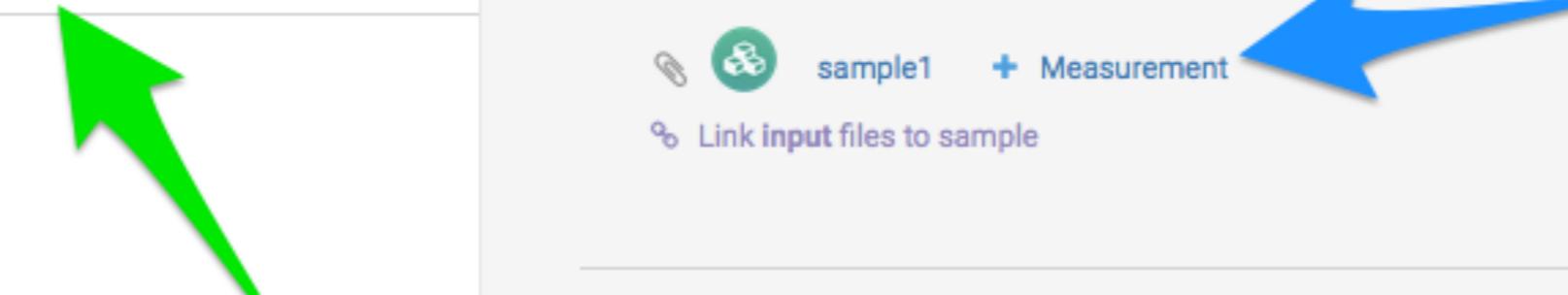
What files are used by this process?



What files are produced by this process?



**1. Add measurements by clicking the "+ Measurement" button.**



---

## Measurement Types and Templates

- Attributes have a measurement type associated with them
  - Measurement Types are templates
    - This decreases the amount of work to add new types
  - Templates define how we represent and validate measurement values

proj1 1 Home Processes

How would you describe your process?

**List of measurements  
that can be added**

## Samples

sample1

## Measurements:

## Files:

- Al+Mn-isosurface.BMP
- R38\_01584-v02-2.indexed.csv

## Files Used

Al+Mn-isosurface.BMP

R38\_01584-v02-2.indexed.csv

## Files Produced

## Choose Measurement

Search ...

Composition

Area Fraction

Volume Fraction

Dislocation Density

Length

Width

Height

Density

Volume

Young's Modulus

**Measurements have different types. We currently support two different chart/graph types. We will be adding more types as we go forward.****1. Select a measurement and add measurements for it.****For demonstration purposes we will select:  
length, width, particle size distribution and particle  
shape distribution.**

OK

Cancel

What files are produced by this process?



proj1 1 Home Processes

How would you describe your process?

Why did you do this?

Set Up

Samples

sample1

Measurements:

Length

1 cm

1.01 cm

Files:

- Al+Mn-isosurface.BMP
- R38\_01584-

v02-2.indexed.csv

Files Used

Al+Mn-isosurface.BMP

R38\_01584-v02-2.indexed.csv

Files Produced

## Choose Measurement

Search ...

Composition

Length

1

cm

+

-

Area Fraction

Length

1.01

cm

+

Volume Fraction

Save

Dislocation Density

Length is saved onto the left sidebar!



This bar will appear informing you that your measurements have been saved.

2. You must press the Save button after entering in measurements to save them to the sample. You will see the measurements show up to the left after pressing Save.

When you are done press OK. You can keep selecting different measurement types until you are finished.

OK

Cancel

1. Fill in a measurement. To add another Length measurement press the + button.

This bar will appear informing you that your measurements have been saved.

proj1 1 Home Processes

How would you describe your process?

Why did you do this?

Set Up

Samples

 sample1

Measurements:

Length

1 cm

1.01 cm

Width

1 cm

Particle Size Distribution



Files:

**1. Click on Chart icon to view Particle Size Distribution**

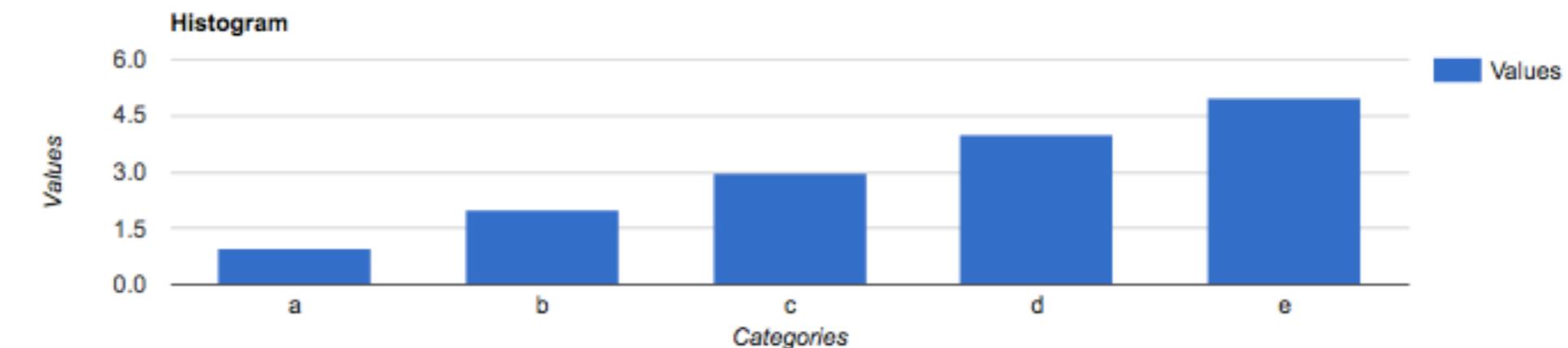
Files Used

 Al+Mn-isosurface.BMP R38\_01584-v02-2.indexed.csv

Files Produced

**Particle Size Distribution**

Categories	Values
a	1
b	2
c	3
d	4
e	5



## Files

What files are used by this process?

 + ADD Al+Mn-isosurface.BMP

x

 R38\_01584-v02-2.indexed.csv

x

What files are produced by this process?

 + ADD

MaterialsCommons

SEARCH PROJECT...

Help proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

As Measured - 08/27/2015 @ 1:38PM Back to processes list

How would you describe your process?  
What

Why did you do this?  
Why

Set Up

Samples sample1

Measurements:  
Length 1 cm  
Width 1.01 cm

Particle Size Distribution  
Particle Shape Distribution

Files:  
Al+Mn-isosurface.BMP  
R38\_01584-v02-2.indexed.csv

Files Used  
Al+Mn-isosurface.BMP  
R38\_01584-v02-2.indexed.csv

Files Produced

Name your process  
As Measured - 08/27/2015 @ 1:38PM

How would you describe your process?  
What

Why did you do this?  
Why

Setup

Samples sample1 Measurement  
Link input files to sample

Files  
What files are used by this process?  
Al+Mn-isosurface.BMP  
R38\_01584-v02-2.indexed.csv

What files are produced by this process?  
Al+Mn-isosurface.BMP  
R38\_01584-v02-2.indexed.csv

CANCEL SUBMIT

**1. When you are done press submit**

MaterialsCommons

SEARCH PROJECT...

Help

proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

ALL

CREATE

Thu Aug 27 2015

DETAILS:

Description about process:  
-None-

Reason you performed the process:  
-None-

Owner: proj1@mc.org

Does Transform: false

SETUP: INSTRUMENT

SAMPLES:

 sample1  
Thu Aug 27 2015, proj1@mc.org

FILES:

Files Used:

 R38\_01584-v02-2.indexed.csv  
Thu Aug 27 2015, proj1@mc.org, Size: 6.56 KB

 AI+Mn-isosurface.BMP  
Thu Aug 27 2015, proj1@mc.org, Size: 5.74 MB

Files Produced:

-None-

**View of As Measured Process once we click the submit button.**

## ALL SAMPLES

sample1

## DETAILS

Name: sample1

Owner: proj1@mc.org

## Description:

This describes details of the sample. For example this sample is a plastic and metal dusty cropopper toy plane from the Planes: Fire and Rescue movie.

## TRANSFORMATION

This section will provide sample1 initial measurements and how these measures have been transformed overtime.

As Received - 08/27/2015 @ 12:28PM

## Length:

Best Measure :: [edit](#)

Measurements ::

- 1 cm As Measured - 08/27/2015 @ 1:38PM
- 1.01 cm As Measured - 08/27/2015 @ 1:38PM

## Particle Shape Distribution:

Best Measure :: [edit](#)

Measurements ::

- As Measured - 08/27/2015 @ 1:38PM

## Particle Size Distribution:

Best Measure :: [edit](#)

Measurements ::

- As Measured - 08/27/2015 @ 1:38PM

## Width:

Best Measure :: [edit](#)

Measurements ::

- 1 cm As Measured - 08/27/2015 @ 1:38PM

## FILES

Al+Mn-Isosurface.BMP

Thu Aug 27 2015, 5.74 MB



As Measured - 08/27/2015 @ 1:38PM

R38\_01584-v02-2.indexed.csv

Thu Aug 27 2015, 6.56 KB

As Measured - 08/27/2015 @ 1:38PM

**View of sample once we have added measurements to it from the "As Measured" process.**

---

## Transform a Sample

- The next step is to transform a sample
  - After transformation we will look at the sample to see the effect on it
  - Transforming a sample changes something about it
  - Materials Commons represents this by having you tell it if there are any changes to the existing set of attributes. For each attribute you specify:
    - End Attribute: Attribute no longer applies
    - Is Transformed: After transformation existing measurements no longer apply to the transformed version of the sample
    - Not Transformed: After transformation existing measurements still apply to the transformed version of the sample
-

proj1 1

Home

Processes

ALL

CREATE

As Measured - 08/27/2015 @ 1:38PM

As Received - 08/27/2015 @ 12:28PM

**1. Choose cogging template****Choose Template**

Search ...

Annealing

APT

APT Data Analysis

APT Data Reconstruction

As Measured

As Received

Broad Ion Beam Milling

**Cogging**

Compression

Computation

**Cogging**

- Description: Cogging
- Type: OTHER
- Transforms Sample:true
- Files Used:
- Files Produced:
- Setup:

## o Temperature ::

Type: number

Units:

C

F

K

Required: false

## o Strain ::

Type: number

Units:

mm/mm

percentage

Required: false

**If "Transforms Sample" is true then  
the template will transform a  
sample.**

OK

Cancel

proj1 1

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)[ALL](#)

Cogging - 08/27/2015 @ 3:47PM

[Back to processes list](#)

How would you describe your process?

Why did you do this?

Set Up

Transformed Sample

Files Used

Files Produced

Name your process

Cogging - 08/27/2015 @ 3:47PM

How would you describe your process?

What

Why did you do?

Why

[+ Setup](#)

Samples

[+ ADD](#)

sample1

[+ Transformation](#)

Files

What files are used by this process?

[+ ADD](#)

What files are produced by this process?

[+ ADD](#)

1. Click "+ Transformation" button to tell Materials Commons which Attributes are affected by the transformation.

proj1 1 Home Processes

## Transformation

ALL

Cogging - 08/27/2015 @ 3:47PM

How would you describe your process?

Why did you do this?

Set Up

Transformed Sample

Files Used

Files Produced

**Note: Right now the default is "End Attribute" (We are discussing what the default should be)**

### Properties

- Length :

## Best Measure: Measurements:

- 1 cm As Measured - 08/27/2015 @ 1:38PM
- 1.01 cm As Measured - 08/27/2015 @ 1:38PM

- Particle Shape Distribution :

7/2015 @ 1:38PM

- Width :

## Best Measure: Measurements:

- 1 cm As Measured - 08/27/2015 @ 1:38PM

**1. For each Attribute tell Materials Commons what to do with it.**

**Choices:**

**a. End Attribute - Delete this attribute going forward.**

**b. Is Transformed - Measurements are unknown**

**c. Not Transformed - Keep measurements**

**Current Default is "End Attribute". We are thinking of changing it.**

OK

Cancel

proj1 1

Home

Processes

Files

Samples

Reviews

Settings

Why did you do this?

Set Up

**Transformed Sample** sample1Not Transformed:

- Length

Is Transformed:

- Width

## End Attribute (Deleted):

- Particle Shape Distribution
- Particle Size Distribution

Files Used

Files Produced

How would you describe your process?

What

Why did you do?

Why

**Before clicking submit we can see what will happen to each attribute.****Samples** + ADD sample1+ Transformation **Files**

What files are used by this process?

 + ADD

What files are produced by this process?

 + ADD

CANCEL

SUBMIT

proj1

Home

Processes

Files

Samples

Reviews Settings

Name: sample1

Owner: proj1@mc.org

**Description:**

This describes details of the sample. For example this sample is a plastic and metal dusty cropopper toy plane from the Planes: Fire and Rescue movie.

**TRANSFORMATION**

This section will provide sample1 initial measure

As Received measures have been performed overtime.

Cogging - 08/27/2015 @ 3:47PM

As Received - 08/27/2015 @ 12:28PM

**1. Click Samples tab**

We are now going to look at the sample after the transformation has been applied

**There are two entries here:**

**"As Received" entry covers all measurements up to but not including the transformation.**

**"Cogging" entry covers all measurements up to but not including the next transformation.**

**"As Received" selected so here are the attributes**



proj1

Home

Processes

Files

Samples

Reviews

Settings

Name: sample1

Owner: proj1@mc.org

## Description:

This describes details of the sample. For example this sample is a plastic and metal dusty crophopper toy plane from the Planes: Fire and Rescue movie.

## TRANSFORMATION

This section will provide sample1 initial measurements and how these measures have been transformed overtime.

**1. Click Cogging link** [Cogging - 08/27/2015 @ 3:47PM](#) [As Received - 08/27/2015 @ 12:28PM](#)

## • Length :

[Best Measure](#) :: [edit](#)[Measurements](#) ::

- 1 cm [As Measured - 08/27/2015 @ 1:38PM](#)
- 1.01 cm [As Measured - 08/27/2015 @ 1:38PM](#)

## • Width :

[Best Measure](#) :: [edit](#)[Measurements](#) :: --None--

## FILES



AI+Mn-isosurface.BMP

[As Measured - 08/27/2015 @ 1:38PM](#)

R38\_01584-v02-2.indexed.csv

Thu Aug 27 2015, 6.56 KB

[As Measured - 08/27/2015 @ 1:38PM](#)**Attributes as they appear after transformation.** **Notice that:**

- a. Width has gone to unknown**
- b. Length kept its measurements**
- c. The two Particle distribution attributes are gone**

---

## Using Search to find Samples and Files

- Now we are going to look at how to use search
- Search allows you to search across multiple objects in the system
- Because it is real time you can apply notes and tags to files and then search on them
- Search is smart: It will reindex related items
  - If you add a note to a file used in a sample then searching on that note will also find the sample

---

## Search Field Syntax

- Search currently uses the syntax as described at:
    - <https://www.elastic.co/guide/en/elasticsearch/reference/current/query-dsl-query-string-query.html#query-string-syntax>
  - Examples:
    - field: for a field name,
    - \* for wildcard search
    - + to “and” fields together
-

proj1 1

Home

Processes

Files

Samples

Reviews

Settings

**PROCESSES**

As Measured - 08/27/2015 @ 1:38PM

proj1@mc.org

Thu Aug 27 2015

As Received - 08/27/2015 @ 12:28PM

proj1@mc.org

Thu Aug 27 2015

Cogging - 08/27/2015 @ 3:47PM

proj1@mc.org

Thu Aug 27 2015

**1. Click on Home tab****REVIEWS**

No Reviews.

**Your project should look similar to this****SAMPLES**

sample1

proj1@mc.org

Thu Aug 27 2015

2. Type in your search here

**FILES**

proj1

- Al+Mn-isosurface+ROI-composition-2-mN.BMP
- Al+Mn-isosurface+ROI-composition-2-zn.BMP
- Al+Mn-isosurface+ROI-composition-2.BMP
- Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP
- Al+Mn-isosurface+ROI-composition-ZN.BMP
- Al+Mn-isosurface+ROI-composition.BMP

**NOTES**

No Notes.

August 2015

Sun	Mon	Tue	Wed	Thu	Friday	Sat
26	27					1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

**Notice that the calendar has been updated with your new entries**

1 samples  
3 processes

MaterialsCommons

Help proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

\*.BMP

Showing top 8 matches of 8 found.

1. [AI+Mn-isosurface+ROI-composition-2-mN.BMP](#) image/bmp  
Path: proj1

2. [AI+Mn-isosurface+ROI-composition.BMP](#) image/bmp  
Path: proj1

3. [AI+Mn-isosurface+ROI.BMP](#) image/bmp  
Path: proj1

4. [sample1](#)

5. [AI+Mn-isosurface+ROI-composition-2-zn.BMP](#) image/bmp  
Path: proj1

6. [AI+Mn-isosurface+ROI-composition-ZN.BMP](#) image/bmp  
Path: proj1

7. [AI+Mn-isosurface.BMP](#) image/bmp  
Path: proj1

**You will be shown up to first 100 best matches**

**1. Type in: \*.BMP and hit return**

**You can click the link to go to item**

**Clicking on the image will bring up a quick view popup**

**Notice how the search also found a sample because the sample had one of the matching files**

MaterialsCommons

proj1 1 Home Processes Files Samples

\*.BMP

AI+Mn-isosurface+ROI.BMP

Showing top 8 matches of 8

1. AI+Mn-isosurface+ROI-composition-2-zn.BMP Path: proj1

2. AI+Mn-isosurface+ROI-composition-ZN.BMP Path: proj1

3. AI+Mn-isosurface+ROI.BMP image/bmp Path: proj1

4. sample1

5. AI+Mn-isosurface+ROI-composition-2-zn.BMP image/bmp Path: proj1

6. AI+Mn-isosurface+ROI-composition-ZN.BMP image/bmp Path: proj1

7. AI+Mn-isosurface.BMP image/bmp Path: proj1

Owner: proj1@mc.org  
Size: 5.74 MB  
Created: Thu Aug 27 2015  
Modified:  
Media Type: image/bmp  
Notes:

OK Cancel

**The quick view popup from clicking the image**

**1. Click image for search number (3) to see the quick view popup**

---

## Adding notes and searching on them

- Now we are going to add notes 2 different files
  - One file will be a part of the sample
  - The other file won't
  - We will see the effect of searching on that note
  - For demonstration purposes we will add the unique word “clam” to one note and “fish” to the other
-

proj1 1 Home Processes

Files

Samples

Reviews

Settings

ALL FILES

proj1

- Al+Mn-isosurface+ROI-composition-2-mN.BMP
- Al+Mn-isosurface+ROI-composition-2-zn.BMP
- Al+Mn-isosurface+ROI-composition-2.BMP
- Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP
- Al+Mn-isosurface+ROI-composition-ZN.BMP
- Al+Mn-isosurface+ROI-composition.BMP
- Al+Mn-isosurface+ROI.BMP
- Al+Mn-isosurface.BMP

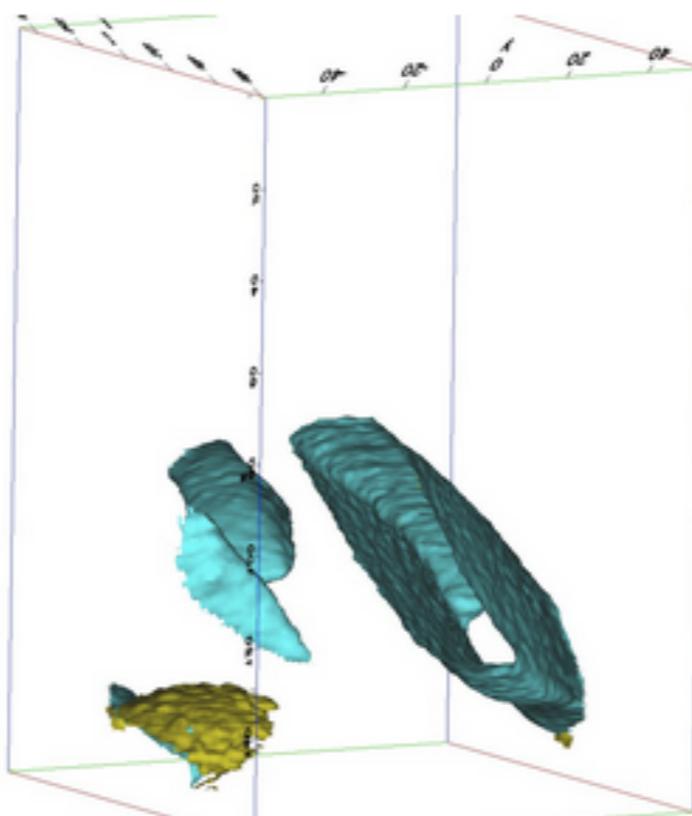


## 1. Click Files tab

AL+MN-ISOSURFACE.BMP

## DETAILS

Type: image/bmp Owner: proj1@mc.org Created: Thu Aug 27 2015



## TAGS

[Add a Tag](#)

## NOTE

Title:

## 2. Click file "Al+Mn+isosurface.BMP"

## 3. To edit note click on the small icon at the far right.



proj1 1 Home Processes

Files

Samples

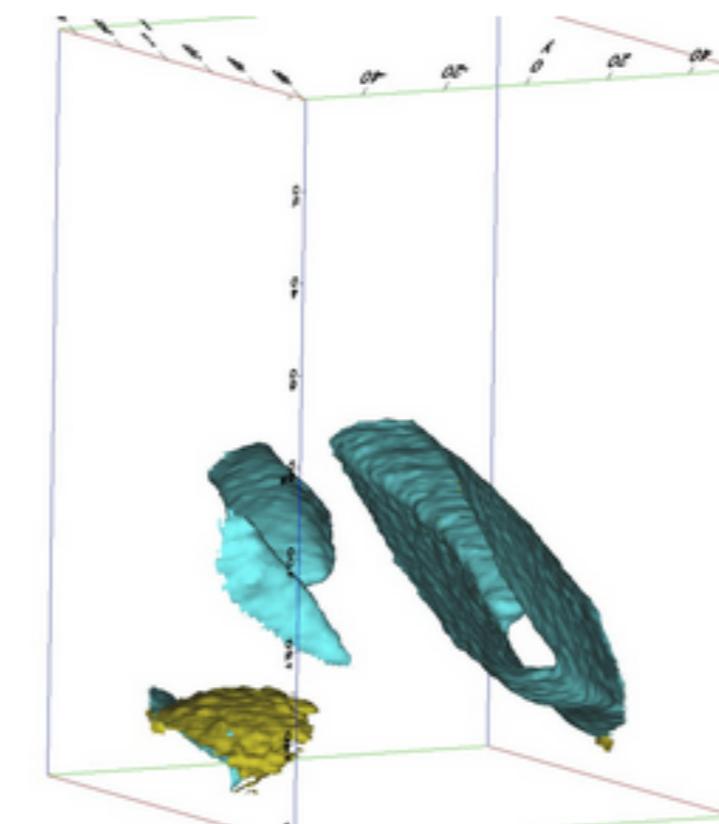
Reviews

Settings

- Al+Mn-isosurface+ROI-composition-2-mN.BMP
- Al+Mn-isosurface+ROI-composition-2-zn.BMP
- Al+Mn-isosurface+ROI-composition-2.BMP
- Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP
- Al+Mn-isosurface+ROI-composition-ZN.BMP
- Al+Mn-isosurface+ROI-composition.BMP
- Al+Mn-isosurface+ROI.BMP
- Al+Mn-isosurface.BMP
- R38\_01584-v01.rmg
- R38\_01584-v02-2.indexed.csv
- R38\_01584-v02.indexed.csv

## DETAILS

Type: image/bmp Owner: proj1@mc.org Created: Thu Aug 27 2015



## TAGS

Add a Tag

## NOTE

Title:

Note:

clam

H2 H5 H6 **B** I U

clams live in salt and fresh water

**2. Add title and content****1. Click Note edit icon****3. Press Save when done**

Save Cancel

MaterialsCommons

clam

Help proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

Showing top 2 matches of 2 found.

1. sample1

2. AI+Mn-isosurface.BMP image/bmp  
Path: proj1

**1. After saving note search for: clam**

**The sample containing the file with the note was found**

**The file with the note was found**

This screenshot shows the MaterialsCommons interface after a search for the note 'clam'. The search results page displays two items: 'sample1' and 'AI+Mn-isosurface.BMP image/bmp'. A blue arrow points from the search term 'clam' in the header to the results. Two green arrows point from descriptive text to each result item. The first result, 'sample1', is described as 'The sample containing the file with the note was found'. The second result, 'AI+Mn-isosurface.BMP image/bmp', is described as 'The file with the note was found'.

MaterialsCommons

SEARCH PROJECT... Help proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

proj1

- Al+Mn-isosurface+ROI-composition-2-mN.BMP
- Al+Mn-isosurface+ROI-composition-2-zn.BMP
- Al+Mn-isosurface+ROI-composition-2.BMP
- Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP
- Al+Mn-isosurface+ROI-composition-ZN.BMP
- Al+Mn-isosurface+ROI-composition.BMP
- Al+Mn-isosurface+ROI.BMP
- Al+Mn-isosurface.BMP
- R38\_01584-v01.rmg
- R38\_01584-v02-2.indexed.csv
- R38\_01584-v02.indexed.csv

1. Click Files Tab

2. Select the first file in the list

3. Click the note edit icon

4. Fill in title and content

5. Click save when done

AL+MN-ISOSURFACE+ROI-COMPOSITION-2-MN.BMP

RENAME

Thu Aug 27 2015

1D Concentration Profile (Preview)

Concentration (mole %)

Distance (mm)

TAGS

Add a Tag

NOTE

Title: fish

Note: H2 H5 H6 B I U fish make good pets

Save Cancel

The screenshot shows a user interface for managing project files. On the left, a sidebar lists files under 'proj1'. A blue arrow points from step 1 to the 'Files' tab in the top navigation bar. Another blue arrow points from step 2 to the first file in the list. Step 3 points to the 'edit' icon in the note section. Step 4 points to the 'Title' and 'Content' fields in the note editor. Step 5 points to the 'Save' button at the bottom of the note editor. The central area displays a 1D concentration profile graph and a note editor with a rich text toolbar.

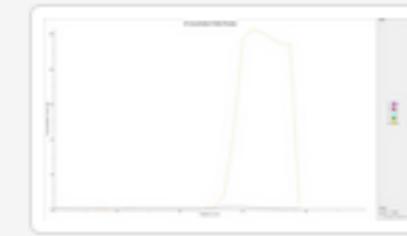
proj1 1

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)

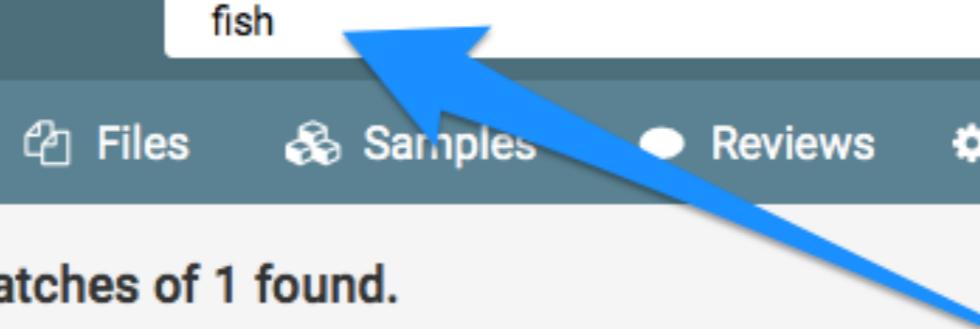
Showing top 1 matches of 1 found.

**1. Search for fish**1.  Al+Mn-isosurface+ROI-composition-2-mN.BMP image/bmp

Path: proj1



**Only matched on the one file containing the note fish. This file is not a part of a sample**



---

## Notes

- Notes are quite powerful
  - You can add images and links to them
- In the future we will support equations, tables, etc...
  - Once we switch to 'ckeditor'
- Lets add an image
- Because I like superhero movies we will add an image of Superman to a note

MaterialsCommons

SEARCH PROJECT... Help proj1@mc.org

proj1 Home Processes Files Samples Reviews Settings

1. Click Files tab

2. Click first file

3. Click edit note icon

4. Click add image icon and paste in the url for an image

5. Click save

AL+Mn-isosurface+ROI-composition-2-mN.BMP

AI+Mn-isosurface+ROI-composition-2-zn.BMP

AI+Mn-isosurface+ROI-composition-2.BMP

AI+Mn-isosurface+ROI-composition-ZN-Mn.BMP

AI+Mn-isosurface+ROI-composition-ZN.BMP

AI+Mn-isosurface+ROI-composition.BMP

AI+Mn-isosurface+ROI.BMP

AI+Mn-isosurface.BMP

R38\_01584-v01.rmg

R38\_01584-v02-2.indexed.csv

R38\_01584-v02.indexed.csv

1D Concentration Profile (Preview)

Concentration (mole %)

Tags

Add a Tag

Title: fish

Note: fish make good pets. Fish are super powerful. They make me think of:

H2 H5 H6 “ B I U

Save Cancel

Superman

MaterialsCommons

SEARCH PROJECT...

Help

proj1 1 Home Processes Files Samples Reviews Settings

AI+Mn-isosurface+ROI-composition.BMP  
AI+Mn-isosurface+ROI.BMP  
AI+Mn-isosurface.BMP  
R38\_01584-v01.rmg  
R38\_01584-v02-2.indexed.csv  
R38\_01584-v02.indexed.csv

Yay! We now have a note that contains an image in it. For extra fun add other superheros to create the "Justice League".

Add a Tag

NOTE

Title: fish

fish make good pets. Fish are super powerful. They make me think of:



1363 x 74

---

## File Upload

- Now we will look at uploading files to Materials Commons
- We will upload two files to Materials Commons. Please choose two files from your system.
- We will also create a new directory to load the files into.

MaterialsCommons

SEARCH PROJECT... Help proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

ALL FILES

**1. Click Files Tab**

**2. If needed click top level directory**

proj1

CREATE FOLDER

PROJ1

DETAILS

Type: directory Owner: proj1@mc.org Created: Thu Aug 27 2015

Path: proj1

AI+Mn-isosurface+ROI-composition-2-mN.BMP

AI+Mn-isosurface+ROI-composition-2-zn.BMP

AI+Mn-isosurface+ROI-composition-2.BMP

AI+Mn-isosurface+ROI-composition-ZN-Mn.BMP

AI+Mn-isosurface+ROI-composition-ZN.BMP

AI+Mn-isosurface+ROI-composition.BMP

AI+Mn-isosurface+ROI.BMP

AI+Mn-isosurface.BMP

R38\_01584-v01.rmg

R38\_01584-v02-2.indexed.csv

R38\_01584-v02.indexed.csv

This screenshot shows the MaterialsCommons web application interface. At the top, there is a navigation bar with tabs for 'Home', 'Processes', 'Files' (which is highlighted with a blue arrow), 'Samples', 'Reviews', and 'Settings'. A search bar labeled 'SEARCH PROJECT...' is positioned above the tabs. On the far right of the header, there are links for 'Help' and a user account labeled 'proj1@mc.org'. Below the header, the main content area has a title 'ALL FILES'. To the left, there is a sidebar with a 'proj1' folder icon (also highlighted with a blue arrow) and a list of files and folders: 'AI+Mn-isosurface+ROI-composition-2-mN.BMP', 'AI+Mn-isosurface+ROI-composition-2-zn.BMP', 'AI+Mn-isosurface+ROI-composition-2.BMP', 'AI+Mn-isosurface+ROI-composition-ZN-Mn.BMP', 'AI+Mn-isosurface+ROI-composition-ZN.BMP', 'AI+Mn-isosurface+ROI-composition.BMP', 'AI+Mn-isosurface+ROI.BMP', 'AI+Mn-isosurface.BMP', 'R38\_01584-v01.rmg', 'R38\_01584-v02-2.indexed.csv', and 'R38\_01584-v02.indexed.csv'. To the right of the sidebar, there is a detailed view for the 'proj1' folder, titled 'PROJ1'. It shows 'DETAILS' with the type as 'directory', owner as 'proj1@mc.org', creation date as 'Thu Aug 27 2015', and path as 'proj1'. There is also a 'CREATE FOLDER' link at the top right of this panel.

MaterialsCommons

SEARCH PROJECT... Help proj1@mc.org

proj1 1 Home Processes Files Samples Create Folder

ALL 2. Enter your folder name

proj1

- Al+Mn-isosurface+ROI-composition-2-mN.BMP
- Al+Mn-isosurface+ROI-composition-2-zn.BMP
- Al+Mn-isosurface+ROI-composition-2.BMP
- Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP
- Al+Mn-isosurface+ROI-composition-ZN.BMP
- Al+Mn-isosurface+ROI-composition.BMP
- Al+Mn-isosurface+ROI.BMP
- Al+Mn-isosurface.BMP
- R38\_01584-v01.rnng
- R38\_01584-v02-2.indexed.csv
- R38\_01584-v02.indexed.csv

CREATE FOLDER

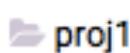
3. Click "Create Folder" button

1. Click "CREATE FOLDER" a "Create Folder" popup will appear

4. Refresh your browser to make the folder appear  
(This will be fixed in a subsequent release)

The screenshot shows the MaterialsCommons web application interface. At the top, there's a navigation bar with 'MaterialsCommons', a search bar, 'Help', and a user account 'proj1@mc.org'. Below the bar, a project named 'proj1' is selected. The main area shows a list of files and folders under 'proj1'. A 'Create Folder' dialog box is open in the center. The dialog has a title 'Create Folder', a text input field 'New Items', and two buttons: 'Create Folder' (blue) and 'Cancel' (orange). A large blue arrow points from the text '2. Enter your folder name' to the 'New Items' input field. Another blue arrow points from the text '3. Click "Create Folder" button' to the 'Create Folder' button. A third blue arrow points from the text '1. Click "CREATE FOLDER" a "Create Folder" popup will appear' to the 'Create Folder' dialog itself. A red box highlights the text '4. Refresh your browser to make the folder appear (This will be fixed in a subsequent release)'.

## ALL FILES



proj1

- [Al+Mn-isosurface+ROI-composition-2-mN.BMP](#)
- [Al+Mn-isosurface+ROI-composition-2-zn.BMP](#)
- [Al+Mn-isosurface+ROI-composition-2.BMP](#)
- [Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP](#)
- [Al+Mn-isosurface+ROI-composition-ZN.BMP](#)
- [Al+Mn-isosurface+ROI-composition.BMP](#)
- [Al+Mn-isosurface+ROI.BMP](#)
- [Al+Mn-isosurface.BMP](#)
- [New items](#) 
- [R38\\_01584-v01.rmg](#)
- [R38\\_01584-v02-2.indexed.csv](#)
- [R38\\_01584-v02.indexed.csv](#)

## PROJ1

## DETAILS

Type: directory Owner: proj1@mc.org Created: Thu Aug 27 2015

Path: proj1

CREATE FOLDER

**1. Folder you created it.  
Click it to upload into  
this directory**

proj1 1

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)

## ALL FILES

[proj1](#)

- [Al+Mn-isosurface+ROI-composition-2-mN.BMP](#)
- [Al+Mn-isosurface+ROI-composition-2-zn.BMP](#)
- [Al+Mn-isosurface+ROI-composition-2.BMP](#)
- [Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP](#)
- [Al+Mn-isosurface+ROI-composition-ZN.BMP](#)
- [Al+Mn-isosurface+ROI-composition.BMP](#)
- [Al+Mn-isosurface+ROI.BMP](#)
- [Al+Mn-isosurface.BMP](#)

[New Items](#)

- [R38\\_01584-v01.rmg](#)
- [R38\\_01584-v02-2.indexed.csv](#)
- [R38\\_01584-v02.indexed.csv](#)

**After selecting your folder you  
should see it here**

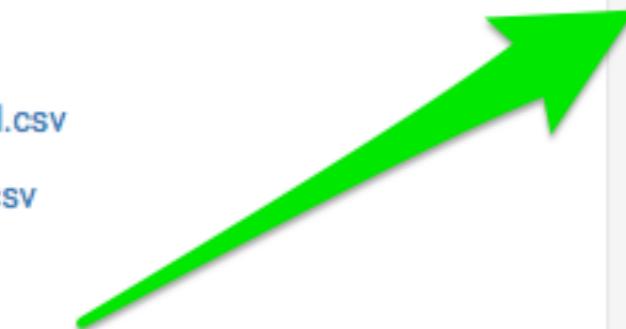
NEW ITEMS 

## DETAILS

Type: directory Owner: proj1@mc.org Created: Fri Aug 28 2015

Path: proj1/New Items

CREATE FOLDER



proj1 1 Home Processes

Files Samples Reviews Settings

**1. Click file upload icon**NEW ITEMS 

proj1

-  Al+Mn-isosurface+ROI-composition-2...
  -  Al+Mn-isosurface+ROI-composition-2...
  -  Al+Mn-isosurface+ROI-composition-2...
  -  Al+Mn-isosurface+ROI-composition-ZN...
  -  Al+Mn-isosurface+ROI-composition-ZN...
  -  Al+Mn-isosurface+ROI-composition.BM...
  -  Al+Mn-isosurface+ROI.BMP
  -  Al+Mn-isosurface.BMP
- New Items
-  R38\_01584-v01.rmg
  -  R38\_01584-v02-2.indexed.csv
  -  R38\_01584-v02.indexed.csv

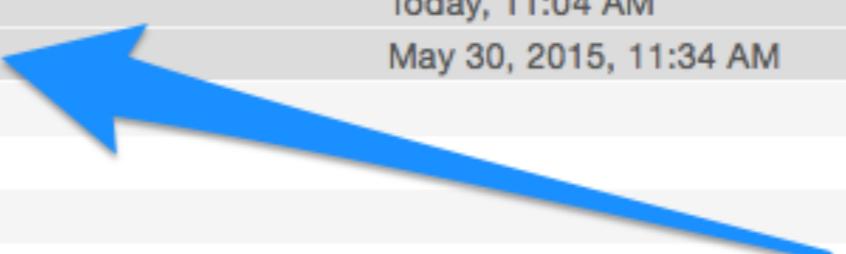
CREATE FOLDER

File Upload

Uploads

Search

Name	Date Modified	Size	Kind
 batman.jpeg	Today, 11:04 AM	34 KB	JPEG image
 gammra.jpg	May 30, 2015, 11:34 AM	4.4 MB	JPEG image

**2. Select files to upload****3. Click when  
you are done  
selecting files** Cancel Open

proj1 1

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)

## ALL FILES

**1. Press "Upload All" to begin your upload**[Upload All](#)[Cancel All](#)

## Files to upload:

[proj1/New Items](#)[batman.jpeg 33.7 KB](#)[gammra.jpg 4.38 MB](#)[proj1](#)[AI+Mn-isosurface+ROI-composition-2-mN.BMP](#)[AI+Mn-isosurface+ROI-composition-2-zn.BMP](#)[AI+Mn-isosurface+ROI-composition-2.BMP](#)[AI+Mn-isosurface+ROI-composition-ZN-Mn.BMP](#)[AI+Mn-isosurface+ROI-composition-ZN.BMP](#)[AI+Mn-isosurface+ROI-composition.BMP](#)[AI+Mn-isosurface+ROI.BMP](#)[AI+Mn-isosurface.BMP](#)[New Items](#)[R38\\_01584-v01.rrng](#)[R38\\_01584-v02-2.indexed.csv](#)[R38\\_01584-v02.indexed.csv](#)**Directory you are uploading files into**

Type: directory Owner: proj1@mc.org Created: Fri Aug 28 2015

Path: proj1/New Items

**Files you are uploading**

proj1 1 Home Processes

Files

Samples

Reviews

Settings

## ALL FILES

**Upload All** **Cancel All**

## Files to upload:

proj1/New Items

batman.jpeg 33.7 KB

Uploaded

gammra.jpg 4.38 MB

Uploaded

proj1

Al+Mn-isosurface+ROI-composition-2-mN.BMP

Al+Mn-isosurface+ROI-composition-2-zn.BMP

Al+Mn-isosurface+ROI-composition-2.BMP

Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP

Al+Mn-isosurface+ROI-composition-ZN.BMP

Al+Mn-isosurface+ROI-composition.BMP

Al+Mn-isosurface+ROI.BMP

Al+Mn-isosurface.BMP

New Items

R38\_01584-v01.rnng

R38\_01584-v02-2.indexed.csv

R38\_01584-v02.indexed.csv

**1. Press "Cancel All" to close the uploads side bar**

## NEW ITEMS

## DETAILS

Type: directory Owner: proj1@mc.org Created: Fri Aug 28 2015

Path: proj1/New Items

**Each files upload status is displayed.****While uploading you will see a progress bar. The system uploads multiple file blocks simultaneously. You can upload any size file (though large files may take a long time).****2. Refresh the page to see your uploaded files  
(This will be fixed in a subsequent release)**

proj1 1

Home

Processes

Files

Samples

Reviews

Settings

## ALL FILES

proj1

- Al+Mn-isosurface+ROI-composition-2-mN.BMP
- Al+Mn-isosurface+ROI-composition-2-zn.BMP
- Al+Mn-isosurface+ROI-composition-2.BMP
- Al+Mn-isosurface+ROI-composition-ZN-Mn.BMP
- Al+Mn-isosurface+ROI-composition-ZN.BMP
- Al+Mn-isosurface+ROI-composition.BMP
- Al+Mn-isosurface+ROI.BMP
- Al+Mn-isosurface.BMP

New Items

- batman.jpeg
- gamma.jpg
- R38\_01584-v01.rn
- R38\_01584-v02-2.indexed.csv
- R38\_01584-v02.indexed.csv

GAMMRA.JPG

## DETAILS

Type: image/jpeg Owner: proj1@mc.org Created: Fri Aug 28 2015



RENAME

**Uploaded files appear in directory****1. Click on file to view it****Files are indexed and converted at the time they are uploaded.**

---

## Reviews

- Reviews allow you to bring multiple items in a project together and start a conversation around them.
- By grouping items together others can easily view them.
- Reviews allow you to add comments to the review.
- We are looking at other features we can add to Reviews

proj1 1

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)[MY REVIEWS](#)   [DUE](#)   [ALL](#)   [ARCHIVED](#)**CREATE****2. Click "CREATE" button to start a new review**

Fri Aug 28 2015 12:22:41 GMT-0400 (EDT)

ASSIGN TO

ATTACHMENT

**3. Pick people to assign it to (they must be a part of the project).  
For this account/training your only choice will be yourself****4. Click "+ ADD" to attach samples, files and processes to the review.****Review form opens here after pressing "CREATE"****1. Click "Reviews" tab**

The screenshot shows the 'Reviews' tab selected in the top navigation bar. Below it, a large blue box highlights the 'CREATE' button on the left and the main review form on the right. A green arrow points from the text 'Review form opens here after pressing "CREATE"' to the right side of the blue box. Inside the blue box, four numbered steps provide instructions for creating a review:

1. Click "Reviews" tab
2. Click "CREATE" button to start a new review
3. Pick people to assign it to (they must be a part of the project).  
For this account/training your only choice will be yourself
4. Click "+ ADD" to attach samples, files and processes to the review.

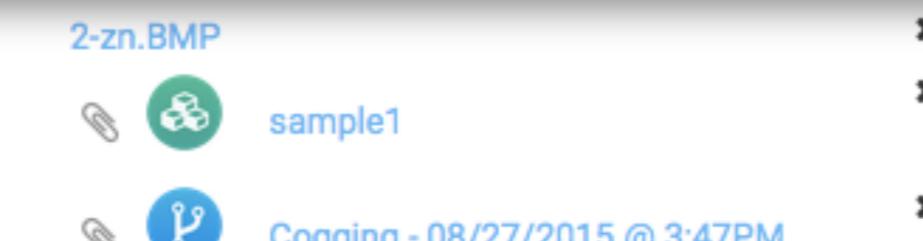
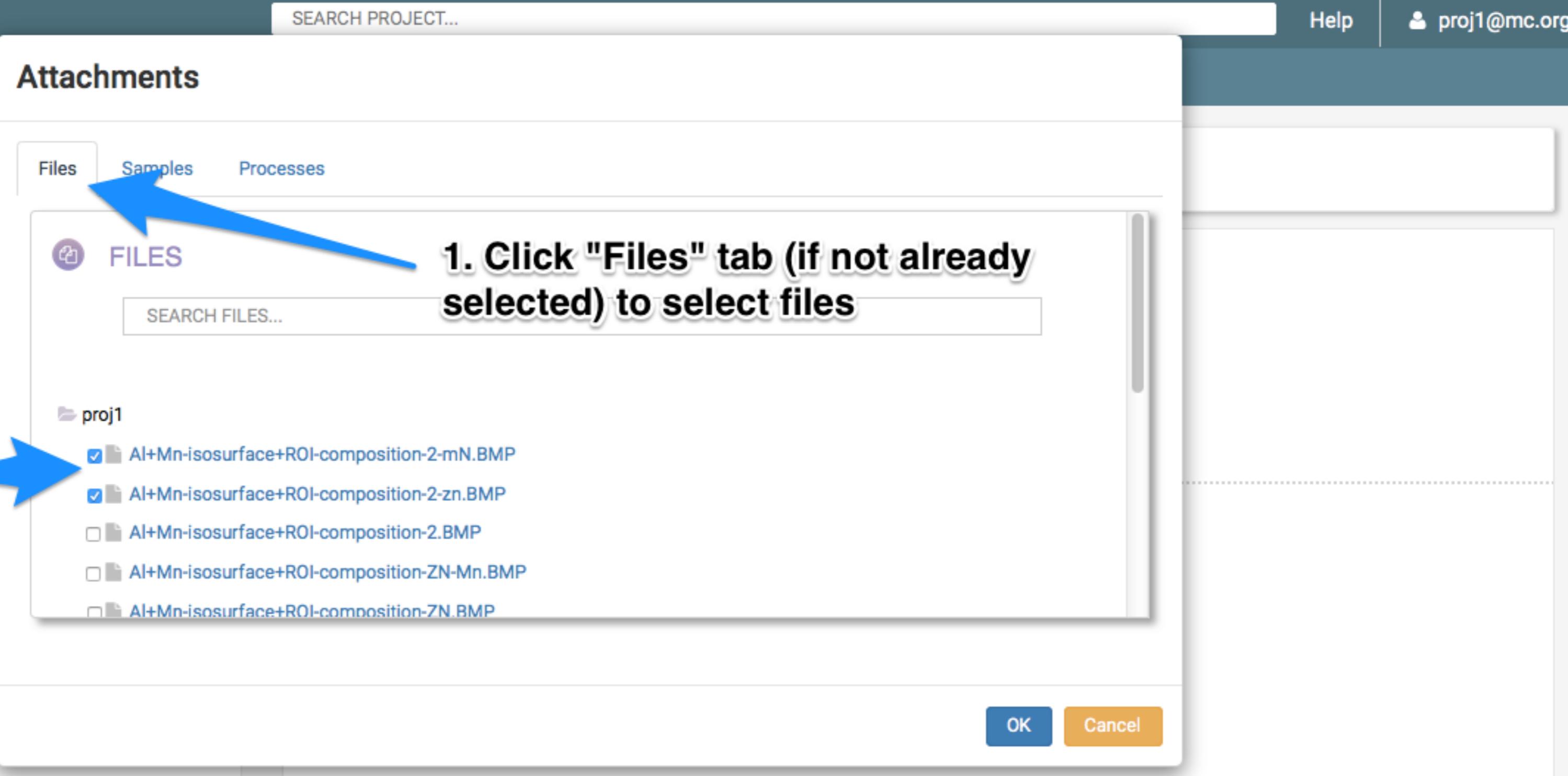
The review form itself includes fields for 'ASSIGN TO', 'ATTACHMENT', 'MESSAGE' (with a 'SUBJECT' input), and a rich text editor toolbar at the bottom.

proj1 1 - Home Processes

MY REVIEWS DUE ALL

CREATE

**2. Select files by clicking their checkbox**



MESSAGE

SUBJECT

MaterialsCommons

SEARCH PROJECT...

Help

proj1@mc.org

proj1 1 Home Process

MY REVIEWS DUE ALL

CREATE

Attachments

Files Samples Processes

SAMPLES

sample1  
proj1@mc.org Thu Aug 27 2015

1. Click "Samples" tab

2. Select samples by clicking their checkbox.

OK Cancel

2-zn.BMP  
sample1  
Cogging - 08/27/2015 @ 3:47PM

MESSAGE

SUBJECT

1364 x 74

proj1 1 Home Process

MY REVIEWS DUE ALL

CREATE

**2. Choose processes by clicking their checkbox**

## Attachments

Files Samples Processes



**1. Select "Processes" tab**

PROCESS		
<input checked="" type="checkbox"/>	Cogging - 08/27/2015 @ 3:47PM	proj1@mc.org
<input type="checkbox"/>	As Measured - 08/27/2015 @ 1:38PM	proj1@mc.org
<input type="checkbox"/>	As Received - 08/27/2015 @ 12:28PM	proj1@mc.org

**OK Cancel**

**3. Click "OK" when you are done making selections.**

2-zn.BMP



sample1



Cogging - 08/27

MESSAGE

SUBJECT

MaterialsCommons

SEARCH PROJECT... Help proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

MY REVIEWS DUE ALL ARCHIVED

CREATE

**People assigned the review appear here.**

All your attachments appear here

Fri Aug 28 2015 12:22:41 GMT-0400 (EDT)

ASSIGN TO

proj1@mc.org

**Only one person assigned to this review**

ATTACHMENT

+ ADD

- AI+Mn-isosurface+ROI-composition-2-mN.BMP
- AI+Mn-isosurface+ROI-composition-2-zn.BMP
- sample1
- Cogging - 08/27/2015 @ 3:47PM

MESSAGE

SUBJECT

H2 H5 H6 **99** B I U **≡** **≡** **≡** %

CANCEL SEND

1364 x 74

MaterialsCommons

SEARCH PROJECT...

Help proj1@mc.org

proj1 1 Home Processes Files Samples Reviews Settings

MY REVIEWS DUE ALL ARCHIVED

CREATE

Fri Aug 28 2015 12:22:41 GMT-0400 (EDT)

ASSIGN TO

proj1@mc.org

ATTACHMENT

+ ADD

AI+Mn-isosurface+ROI-composition-2-mN.BMP  
AI+Mn-isosurface+ROI-composition-2-zn.BMP  
sample1  
Cogging - 08/27/2015 @ 3:47PM

MESSAGE

Are fish really super powerful?

H2 H5 H6 B I U

Objects in mirror are closer than they appear (hat tip: Gary Larson)

1. Enter Review title

2. Enter review note

3. Send the review

1. Enter Review title

2. Enter review note

3. Send the review

CREATE

Are fish really super powerful?

1

**The review that was sent  
with the full message**



Fri Aug 28 2015

REQUESTED BY  proj1@mc.org

ASSIGNED TO  proj1@mc.org

ATTACHMENTS

-   AI+Mn-isosurface+ROI-composition-2-mN.BMP  
proj1/AI+Mn-isosurface+ROI-composition-2-mN.BMP
-   AI+Mn-isosurface+ROI-composition-2-zn.BMP  
proj1/AI+Mn-isosurface+ROI-composition-2-zn.BMP
-   sample1
-   Cogging - 08/27/2015 @ 3:47PM

COMMENTS

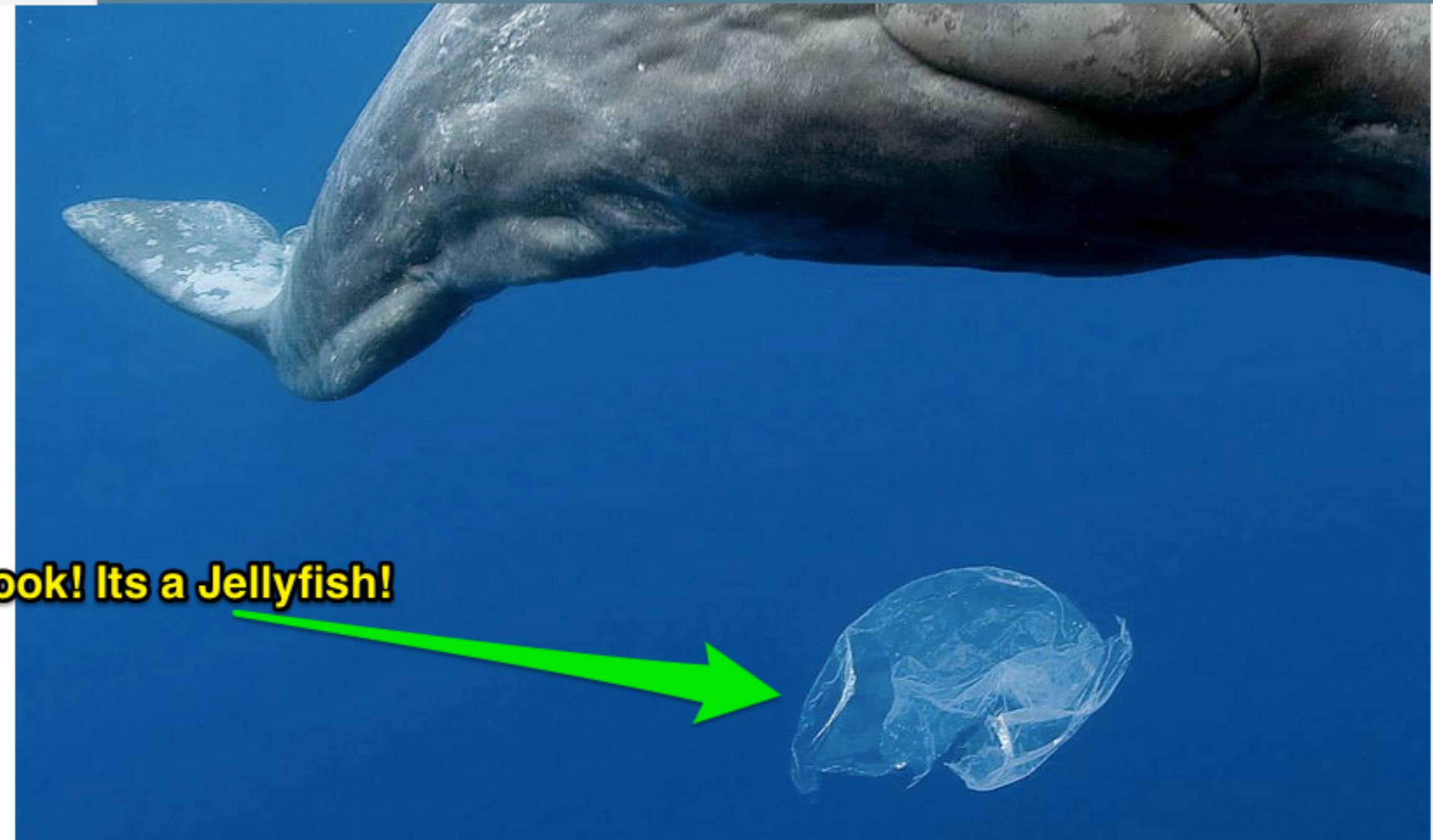
 proj1@mc.org

I've looked at fish and I really think that whales might be more powerful. Fish look wimpy by comparison.



proj1 1 Home Processes Files Samples

Reviews Settings

**Hey look! Its a Jellyfish!**

Fri Aug 28 2015

**1. Type in comment for review**

No way jelly fish rule!

COMMENT

CLOSE AND ARCHIVE

**Click "COMMENT" button to add it.**

proj1 1

[Home](#)[Processes](#)[Files](#)[Samples](#)[Reviews](#)[Settings](#)

**What is the Jellyfish up to?**

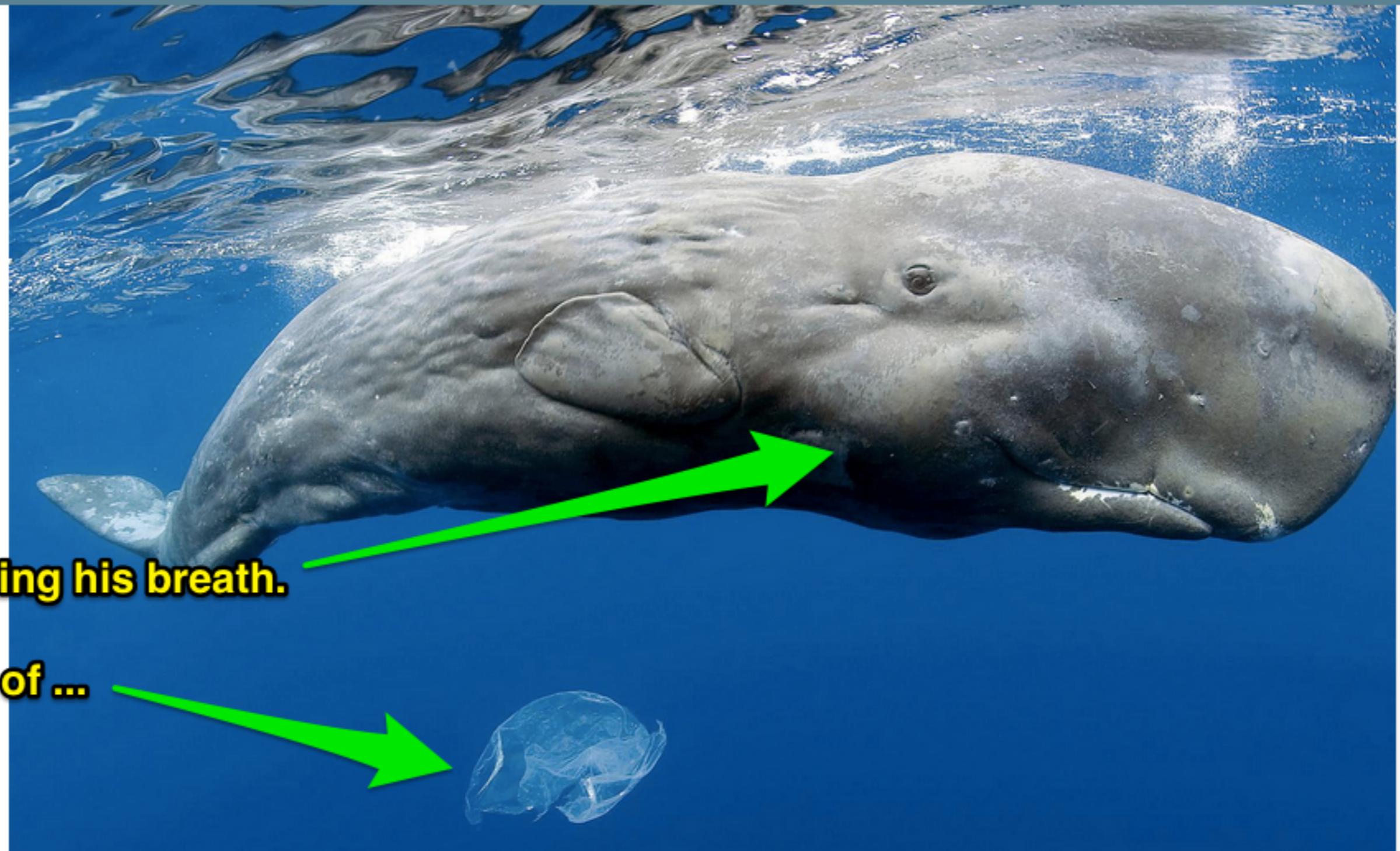
Fri Aug 28 2015

No way jelly fish rule!

[COMMENT](#)

**Click "CLOSE AND ARCHIVE"  
when Review is done.**

[CLOSE AND ARCHIVE](#)



**It looks like the whale is holding his breath.**

**Or maybe his cheeks are full of ...**

Fri Aug 28 2015

proj1@mc.org

No way jelly fish rule!

Fri Aug 28 2015

Add a comment...

COMMENT

CLOSE AND ARCHIVE

MY REVIEWS DUE ALL ARCHIVED

CREATE

Are fish really super powerful?

**1. Clicked ARCHIVED to see all your closed reviews.**

Fri Aug 28 2015

## REQUESTED BY

proj1@mc.org

## ASSIGNED TO

proj1@mc.org

## ATTACHMENTS

- Al+Mn-isosurface+ROI-composition-2-mN.BMP  
proj1/AI+Mn-isosurface+ROI-composition-2-mN.BMP
- Al+Mn-isosurface+ROI-composition-2-zn.BMP  
proj1/AI+Mn-isosurface+ROI-composition-2-zn.BMP
- sample1
- Cogging - 08/27/2015 @ 3:47PM

## COMMENTS

proj1@mc.org

I've looked at fish and I really think that whales might be more powerful. Fish look wimpy by comparison.



---

## Next Steps

We are focused on making the rollout of Materials Commons successful. If you are interested in using Materials Commons we currently have the following set of criteria:

- Looking for Beta users who can work with us who understand
    - The system is evolving (Beta software - there will be issues)
    - Are willing to participate in providing high quality feedback
    - Who meet one of the following criteria:
      - Collaborating with PRISMS Center members on
        - PRISMS Use Case
        - PRISMS Software Application
      - Other approved collaborations
        - Or Anyone who:
          - Attends PRISMS MC Training
          - Can use existing templates (including User-defined “As-Measured” template)
          - Agrees to make information public in a reasonable time (e.g. 3 months after Beta end)
  - **We are looking to create partnerships that make us all successful!**
-

And That Concludes The Materials Commons Training Session

- You can find all the source code for Materials Commons at:
  - <https://github.com/materials-commons>
- The PRISMS Center website is located at:
  - <http://prisms-center.org>