

**Matlab Processing Plugin for *OpenPolScope* software**

**Matlab processing with Pol-Acquisition and Pol-Analyzer plugin v. 2.0,**

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## Overview

A Matlab script file (also known as an M-File because Matlab script files always have the file extension .m) is a method for executing a series of Matlab instructions without typing all of the commands from the keyboard. This allows one to automate tasks, and will allow you to write script files.

More information can be found here <http://www.mathworks.com/help/matlab/ref/script.html>

**Note:** Matlab is required to be installed and working for this plugin to work.

The Pre-Processing MatlabDemoPlugin does not invoke any processing. Its purpose is to only start an instance of Matlab and export the Sample stack to Matlab.

The Post-Processing MatlabDemoPlugin uses a script labeling.m (<http://www.mathworks.com/matlabcentral/fileexchange/31187-label-image>) which is used for placing text on images in Matlab. The sample data is first exported to Matlab using the Matlab Control library (<http://code.google.com/p/matlabcontrol/>), the script is then executed in Matlab and the result is then re-imported back into Java (Pol-Acquisition/Pol-Analyzer).

**Note:** The distinction between Pre & Post in context to Pol-Acquisition & Pol-Analyzer is that a 'Pre' macro affects the Raw images and the 'Post' macro affects the Computed images.

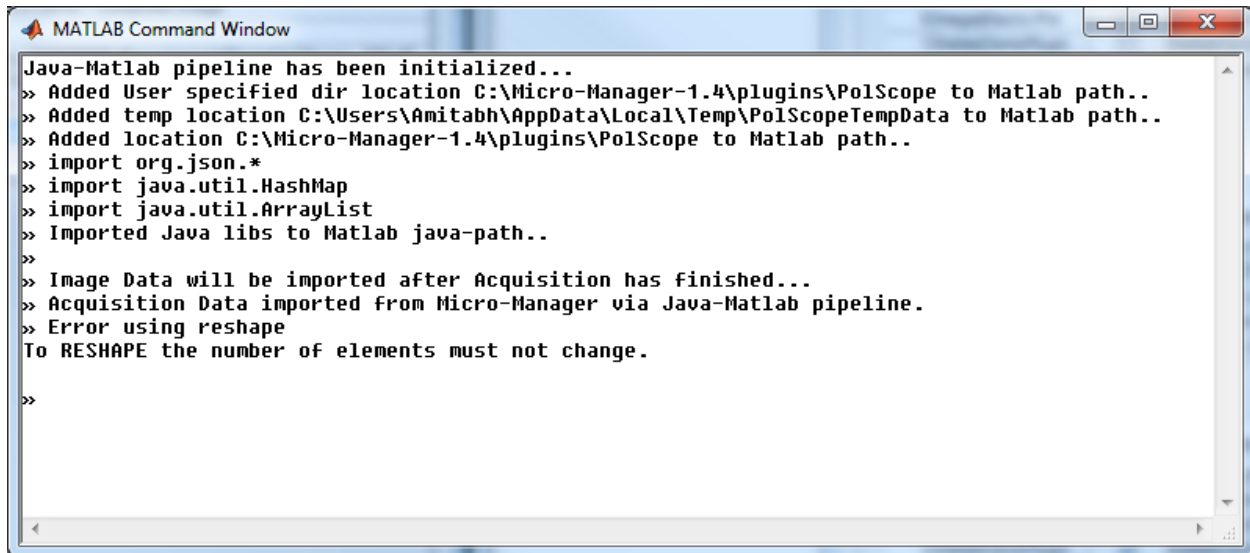
There are a number of built-in functions available in Matlab that can be utilized as well. <http://www.mathworks.com/help/matlab/functionlist.html>

Once the sample is acquired or re-processed the ImagejMacro filename is inserted in the image metadata.

Filename	img_000000000_Retardance - Computed image
Summary	{"Slices":1,"~ BlackLevel":0,"Interval_ms":"0",}
~ BlackLevel	4.0
~ MatlabScript	labelimg.m
~ Retardance Ceiling (nm)	24.0



## Matlab Command Window



```
MATLAB Command Window
Java-Matlab pipeline has been initialized...
>> Added User specified dir location C:\Micro-Manager-1.4\plugins\PolScope to Matlab path..
>> Added temp location C:\Users\Amitabh\AppData\Local\Temp\PolScopeTempData to Matlab path..
>> Added location C:\Micro-Manager-1.4\plugins\PolScope to Matlab path..
>> import org.json.*
>> import java.util.HashMap
>> import java.util.ArrayList
>> Imported Java libs to Matlab java-path..
>>
>> Image Data will be imported after Acquisition has finished...
>> Acquisition Data imported from Micro-Manager via Java-Matlab pipeline.
>> Error using reshape
To RESHAPE the number of elements must not change.
>>
```

When Matlab is initialized for the first time it adds a few locations to the Matlab classpath. It also imports certain Java libraries which are frequently used in Micro-Manager.

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