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//The macro is designed for dark field images and operates in batch mode on
a directory chosen by the user
//The macro will then convert the image, treshold, and take measurements.
//The binary image, results, histogram and ROI table are saved and cleared.
// The calibration factor is set for a Nikon  20x objective.
// With an open image it operates with the topmost open image
// When copied in Process->Batch->Macro it will operate on any number of
images
// but will leave a copy of the original image in the output folder

dir = getDirectory("Choose a Directory ");
list = getFileList(dir);
if (getVersion>="1.40e")
        setOption("display labels", true);
setBatchMode(true);

        //starts the analysis for all the files in the directory, saving a
copy of the image, the binary image, the outlines, the measurements

        for (i=0; i<list.length; i++) {
        path = dir+list[i];
        showProgress(i, list.length);
        if (!endsWith(path,"/")) open(path);
        if (nImages>=1) {
                //sets measurements; you have to adjust the parameters size
and circularity to improve results prior to running
                //known is set for images acquired with a 20x objective on
Nikon Eclipse 80i with normal (1280x960) image setting
                run("Set Measurements...", "area centroid center perimeter
circularity feret's display redirect=None decimal=3");
                run("Set Scale...", "distance=1 known=0.28 pixel=1
unit=µm");
                ofpath=dir+File.separator;
                t = getTitle;
                pointp = lastIndexOf(t,".");
                title=substring(t,0,pointp);
                s=title + "_copy";
                sbn=title + "BN";
                sbno=title + "BNo";
                m="results.xls";
                rename(title);
                run("8-bit");
                run("Make Binary");
                run("Fill Holes");
                saveAs("Tiff", ofpath+sbn);
                //
                run("Analyze Particles...", "size=20-10000
circularity=0-1.00 show=Outlines display add include");
                //the minimum size is set for yeast cells at 20x in order
to exclude bacterial cells
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                //summarizes and save the result window and the Area
distribution
                saveAs("Tiff", ofpath+sbno);
                selectWindow("Results");
                saveAs("Measurements", ofpath+m);
                run("Close All");}
                }
setBatchMode (false);
run("Clear Results");
```