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// Splits all files in input directory into constituent channels and saves results in separate sub-directories

macro "Batch Split"{
    format = ".tif"; // specify image format

    directory = getDirectory("Choose input files"); // get input directory
    print("Input: " + directory);
    fileList = getFileList(directory); // get file list
    print(fileList.length + " files.");

    outputDirectory = getDirectory("Choose output directory"); // get output directory
    print("Output: " + outputDirectory);

    setBatchMode(true); // supresses windows opening

    for (i = 0; i < fileList.length; i++) {
        file = directory + File.separator + fileList[i];
        if(endsWith(file, format)){ // check if file is correct format
            print("\nFile " + file + " is a recognised format - processing.");
            run("Bio-Formats Importer", "open=[" + file + "] color_mode=Default rois_import=[ROI manager] view=Hyperstack"); // open image with bioformats
            getDimensions(width, height, sizeC, slices, frames); // get image dimensions
            print("Number of channels: " + sizeC);
            if(sizeC > 1){
                run("Split Channels"); // split the image into constituent channels
            }
            subDirs = newArray(sizeC);
            for(c = 0; c < sizeC; c++){ // create subdirectories for each channel
                subDirs[c] = outputDirectory + "C_" + (c + 1);
                if(!File.exists(subDirs[c])){
                    File.makeDirectory(subDirs[c]);
                }
            }
            titles = getList("image.titles"); // get the list of open images i.e the individual channels
            for(j = 0; j < titles.length; j++){
                selectWindow(titles[j]);
                filename = subDirs[j] + File.separator + titles[j] + "_C" + (j + 1) + ".ome.tiff";
                print("Saving " + filename);
                run("Bio-Formats Exporter", "save=[" + filename + "] use compression=Uncompressed"); // save image
                close();
            }
        } else {
            print("\nFile " + file + " is not a recognised format - skipping.");
        }
    close("*");
    }

    print("\nFinished");
    showStatus("Finished.");
    setBatchMode(false);
}
```