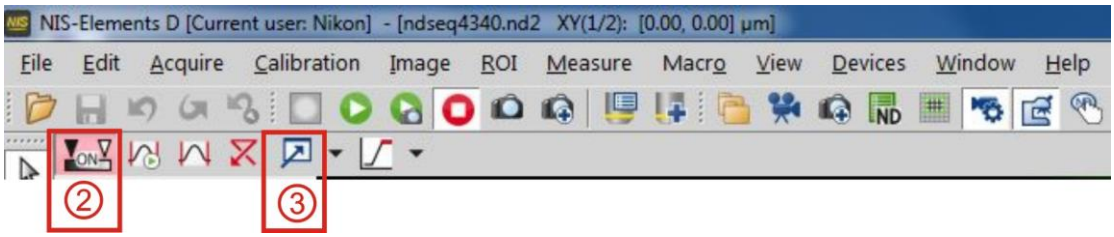
## Appendix A. Operating procedures described by individual software

### 1. Nikon NIS-Elements D (version 5.02)

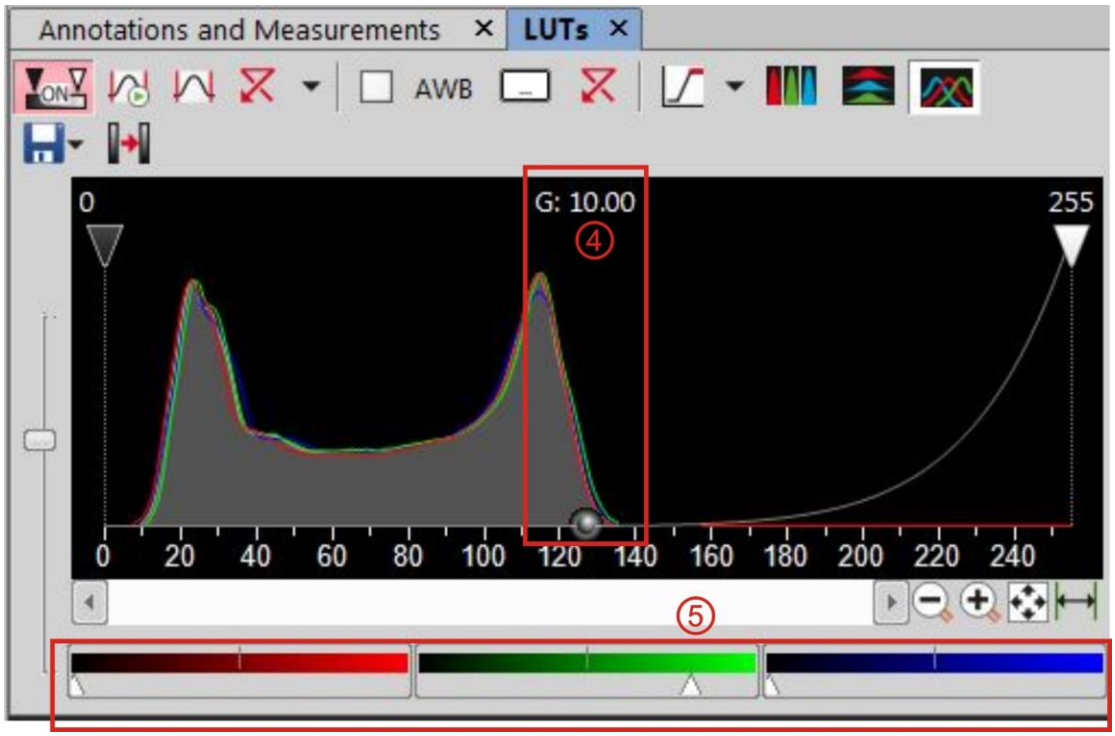
① Snap an image under reflected light;

② Active Look-Up Tables (LUTs) function in the image toolbar from the top left of the main window;




③ Use the show LUTs window button in the image toolbar to open the LUTs window in right corner of the main window;

④ Adjust the gamma parameter, enter an exact value to the G field at the top of the graph area or drag the gamma slider near the bottom of the graph area;

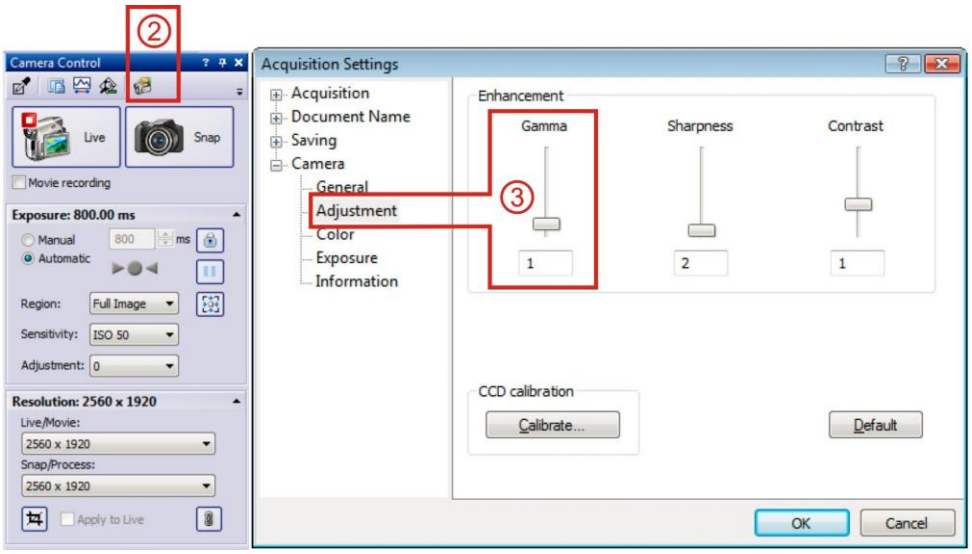



⑤ Adjust the color channel values by dragging the triangle slider below the color bar to get clear a gamma-enhanced image.

## 2. Olympus DP2-BSW (version 2.1)

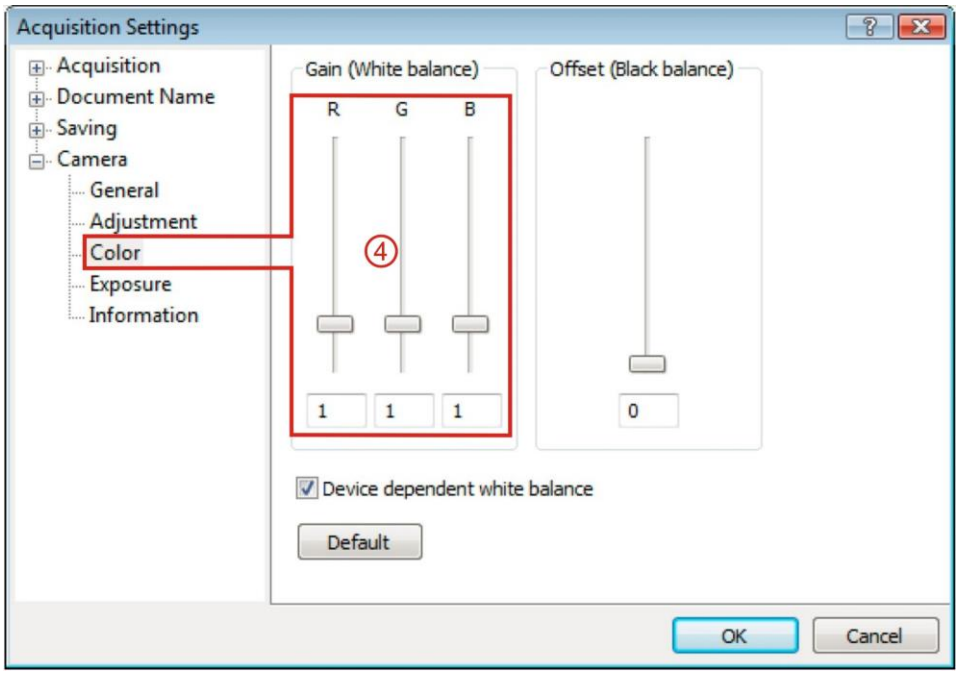
① Snap an image under reflected light;

② Open the acquisition settings in the Camera Control in the top right corner of the main window;




③ Select Camera -> Adjustment under the Acquisition Settings dialog box to set gamma value, enter an exact value or drag the gamma slider;

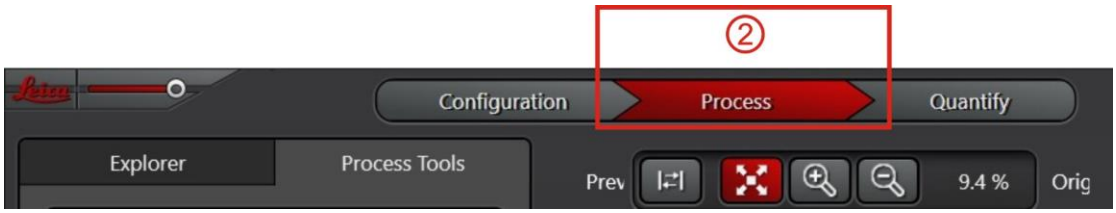
④ Select Camera -> Color under the Acquisition Settings dialog box to set color channel and gray scale value to get a clear gamma-enhanced image.



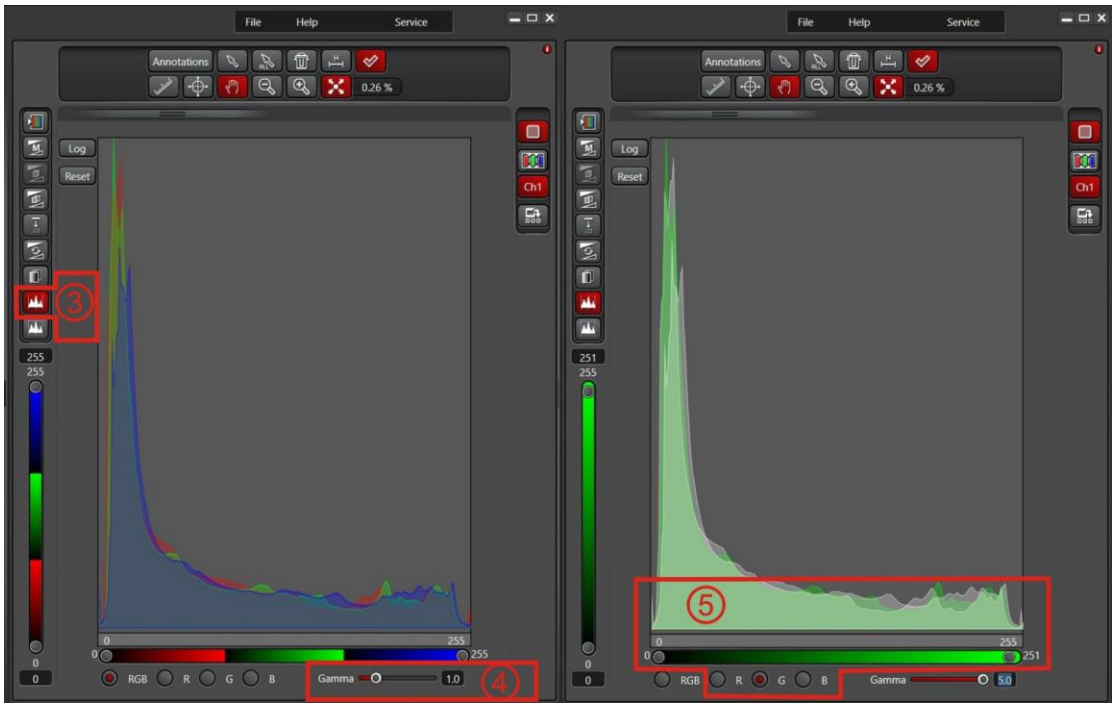
### 3. Leica Application Suite X (version 3.7.1)

① Snap an image under reflected light;

② Choose Process function on the top of the main window;




③ Select histogram function in the display window from the middle part of the main window to show the gray scale values of current image;



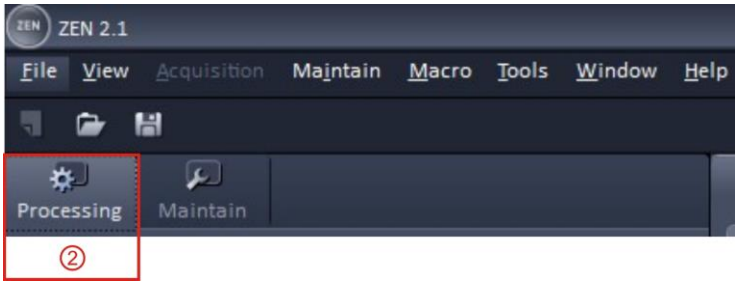

④ Input gamma value or drag the gamma slider;

⑤ Choose color channel and set the gray scale value by dragging the slider to get a clear gamma-enhanced image.

**4. ZESS ZEN (version 2.1)**

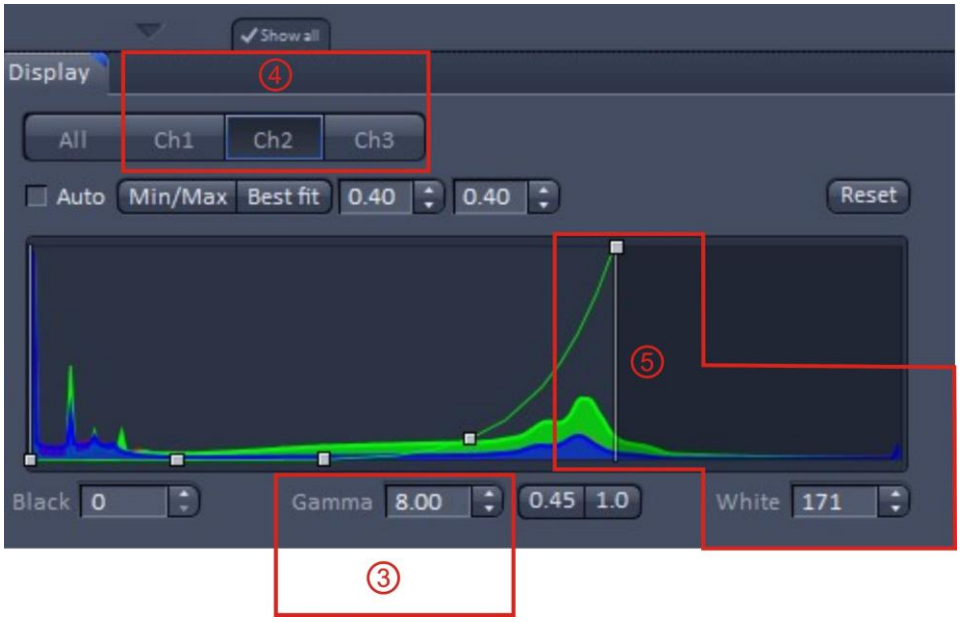
① Snap an image under reflected light;

② Select the Processing menu from left top of the main window;




③ Input the gamma value or drag the gamma slider in the Display dialog box at the bottom of the main window;

④ Select the color channel (Ch1=red; Ch2=green; Ch3=Blue);




⑤ Input gray value of the color channel or drag the channel value slider to get a clear gamma enhanced image.

**Note**: different sorts of software will have different values for constant C and gamma range, thus the same gamma value may not produce comparable enhancements. Some sorts of software may even use the equation $s = C \cdot r^{1/\gamma}$, which would lead to an opposite enhancement effect since we use the equation $s = C \cdot r^{\gamma}$ in the present study.