

User instructions to software “Nanoporous Template Analyzer 1”:

This software was developed to quickly analyze Scanning Electron Microscopy (SEM) images of nanoporous template filled with magnetic materials by Leonardo Tomiatti in September 2024. It is licensed under the [Apache License, Version 2.0](#). So, any changes must be documented and distributions need to include the original copyright notice.

Before of your first use of this tool it is necessary to install some dependencies if these aren't installed. To do this follow the links and details specified on “readme.txt” file. After this, run the “nanoporous_template_analyzer_1.py” file (to Windows operating systems is necessary only double click to open).

The main idea behind the software is do two strategic cuts in the grayscale to divide your SEM image in three different colors, respectively, red, green and blue. Each one has one different meaning to the program: the first one means empty pore; the second, interstitial region; and, finally, the third, filled pore. To one intuitive perspective about this, check Fig. 1 bellow.

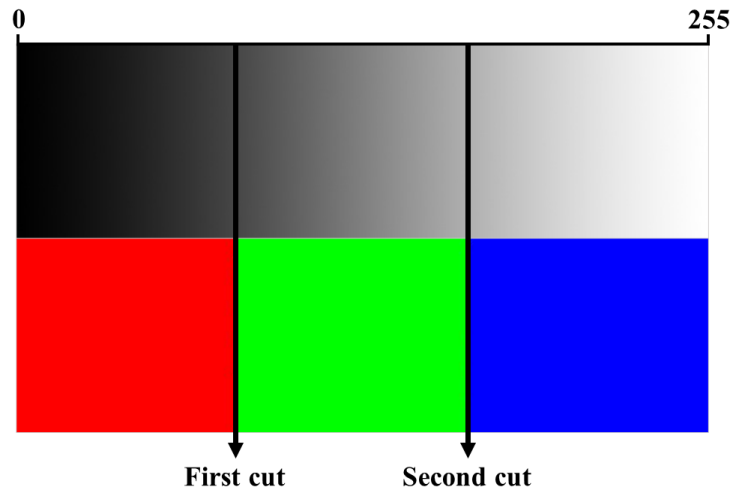


Figure 1: Grayscale cut scheme.

To find the best parameters to analyze your SEM image, you need repeat the adjustments until you reach the best visual fit between your cropped image and your RGB standard colors image. After this step, the program will request and calculate some interesting quantities about your sample and exhibit this before exit the execution. If you aren't interested in this, you can put any values, the pixels calculations don't is affected by these values.

To next versions are planned the automation of the search by the best parameters to analyze the SEM images.

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