



## 2.2 Surface Rendering

It is well established visualization technique for 3D imaging of sectional image data. Surface rendering is used to determine the border surface from a rendered 2D image or extract a single object from a label image to display the surface. The geometrical constraints are possible only if satisfy the detection and extraction of border surface. Algorithms are used to extract the border surface and should be prepared before rendering. Then only rendered surface will become visible unless some particular methods are implemented.

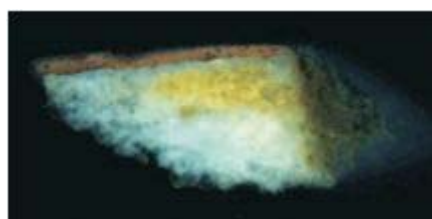
## 3. Material Analysis of Artwork

A report is generated for each painting material analysis when inform us about the artwork as well as descriptions and results of the analysis. These reports act as database which could give a knowledge base for restoration cases. Based on these results, new micro analytical methods can be formed. We have to work on pigments in color layers. Based on these pigments, we can distinguish part of the painting profile. For color layer identification, infrared reflectography method is being used but this is not applicable for stratigraphy.

With the help of scanning electron microscopy (SEM), stratigraphy can be studied in visible spectrum (VS) fig 2(a) and in ultraviolet spectrum (US). Due to the changing conditions, input data can be disordered. So, these differences in between VS and US images, method is given in proposed system. So, for further segmentation, two segmentation layers were implemented: color layer segmentation and grains segmentation.



(a)



(b)

**Figure 1.2:** The images of artwork (a) top and ultraviolet spectrum (b) bottom and visible spectrum [3]

## 3.1 Image Processing

Image processing can be defined as a technique in which we get an image as input and output can be produced either as image or specification of an image. In digital image processing, we aim on developing the algorithms to get the desired results by using imagery data.

In material analysis of image processing, stratigraphy technique can be used to identify the pigments in the color layers of materials in the US and VS spectrum. Based on the experience of experts and image data of US and VS, the final estimate of color layer border is formed. By using the technique of Scanning Electron Microscopy (SEM), we can acquire more precise information about the layer structure of materials. SEM can be used to analyze the composition of distinct pigment layers in a random sampling of images. From these samples, we can acquire the required data about the pigment particles.

## 4. Conclusion

In this paper, I present a review on analysis of materials using digital image processing. This paper aims on developing the micro analytical methods of image processing for materials to identify the organic and inorganic compounds. In this paper, the method of stratigraphy have been defined using micro analytical methods and also explained the concept of visualization and art work of material analysis.

## References

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