

Investigation of porosity and morphology of Thin films by analyzing SEM images

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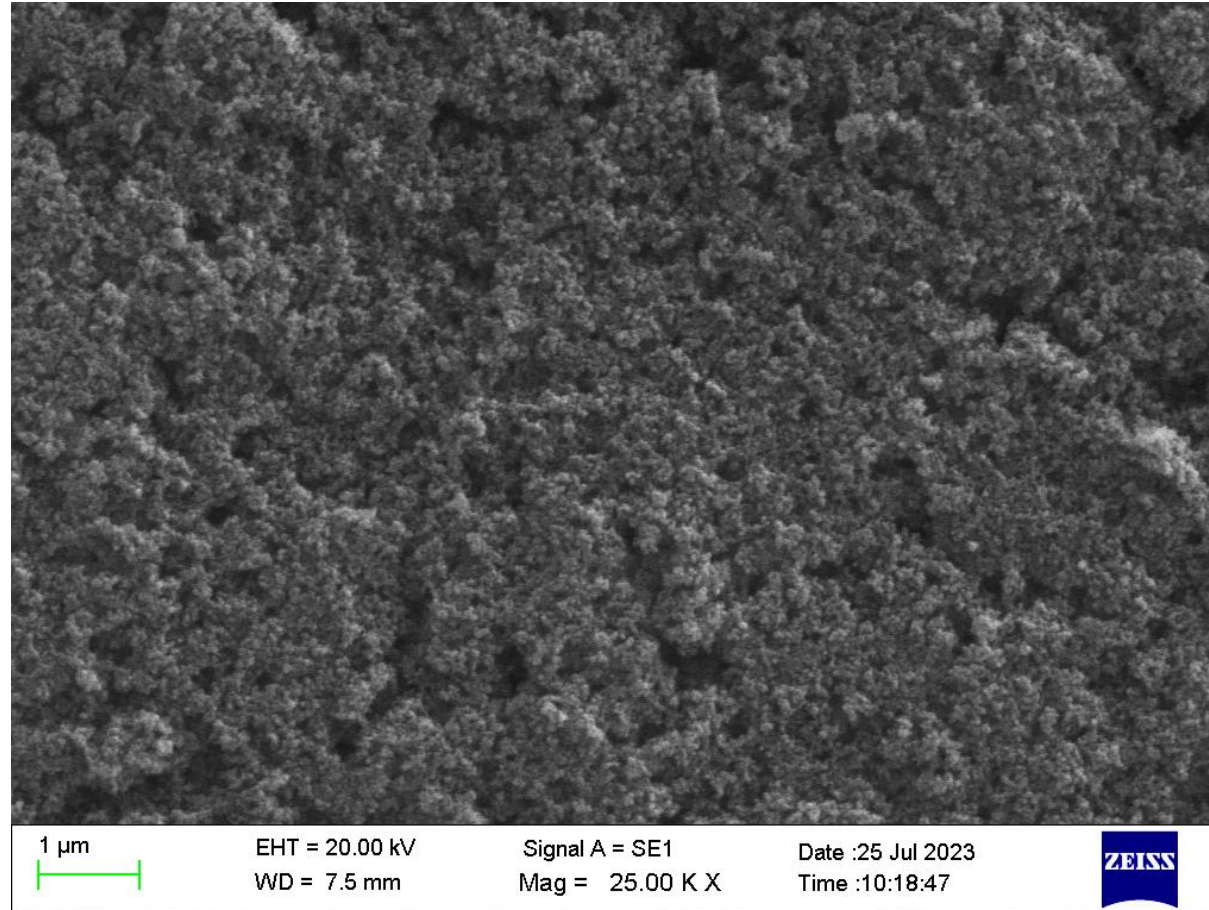
Introduction

Objective

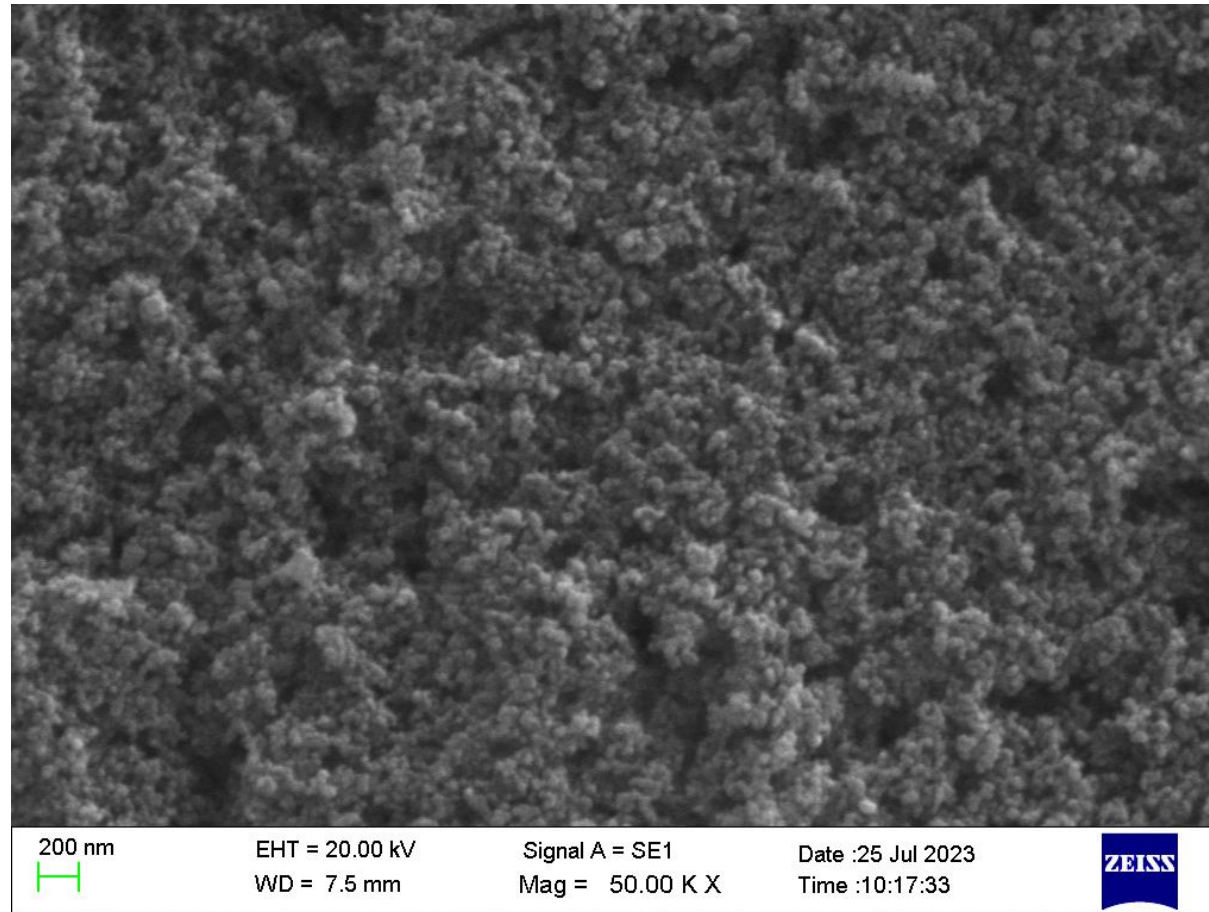
Procedure

- Sample Preparation
- Scanning Electron Microscopy was conducted to capture high-resolution images of the thin film surfaces.
- SEM images were processed to generate 3D depth surfaces using specialized software.

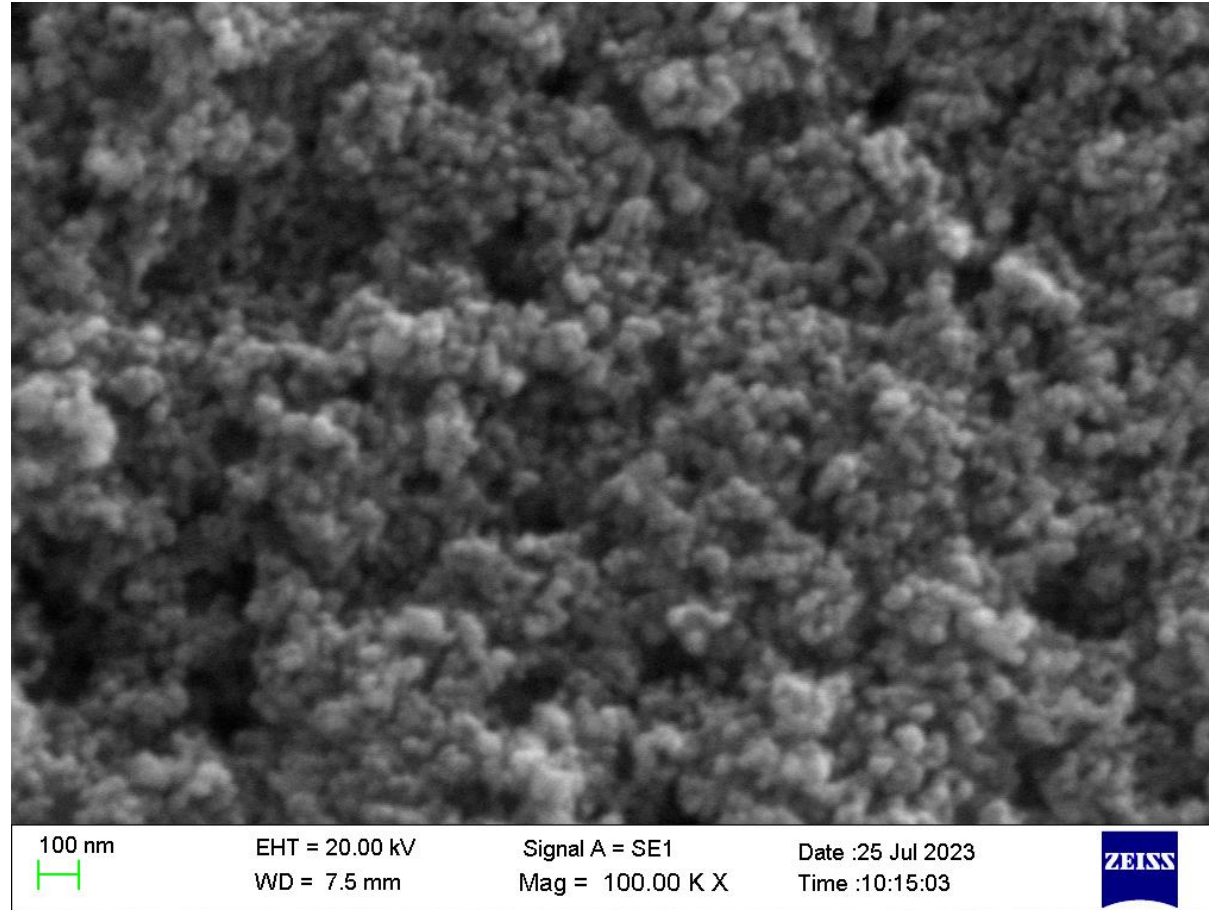
SEM Imaging



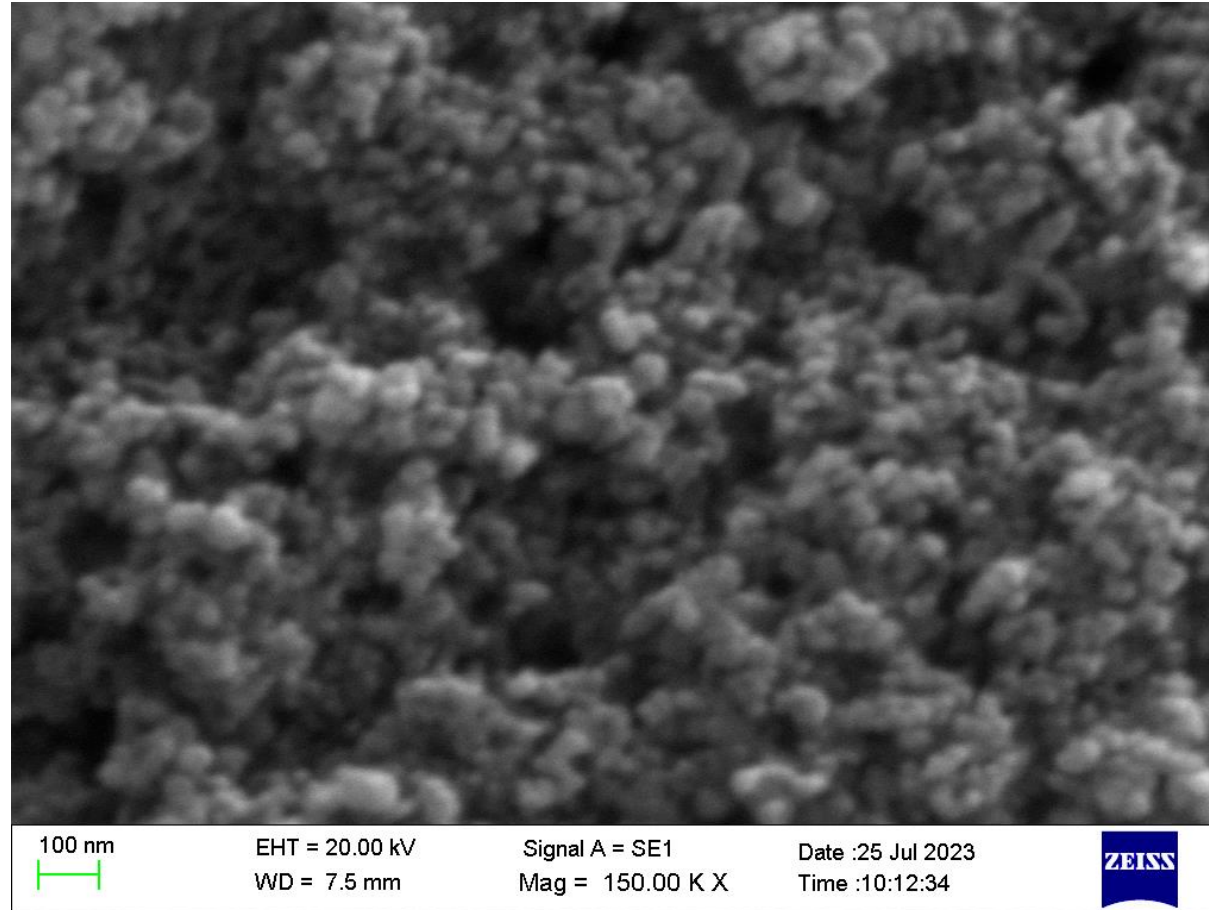
SEM Imaging



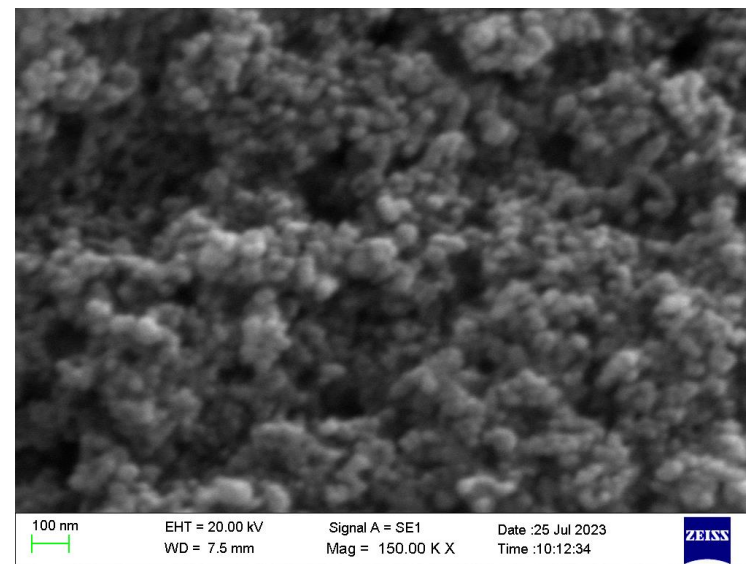
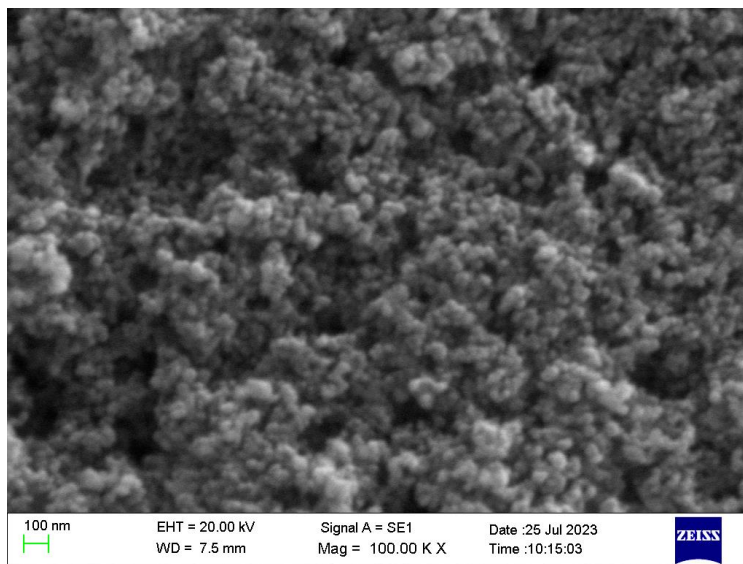
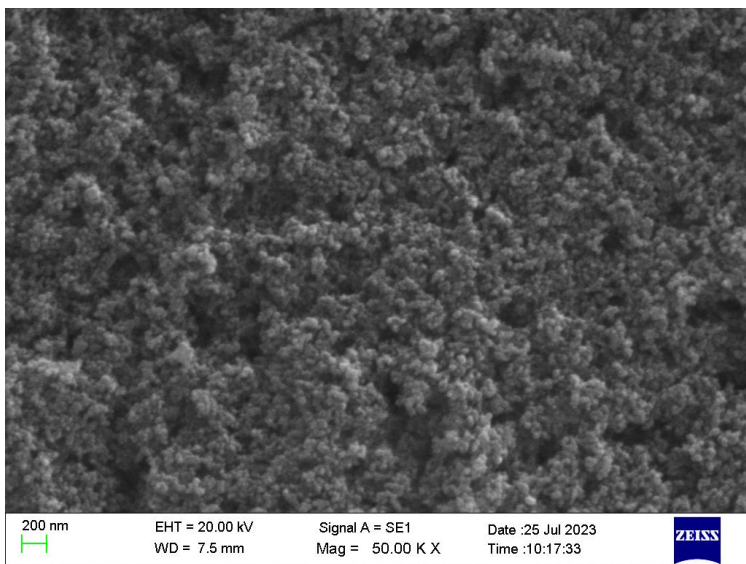
SEM Imaging



SEM Imaging



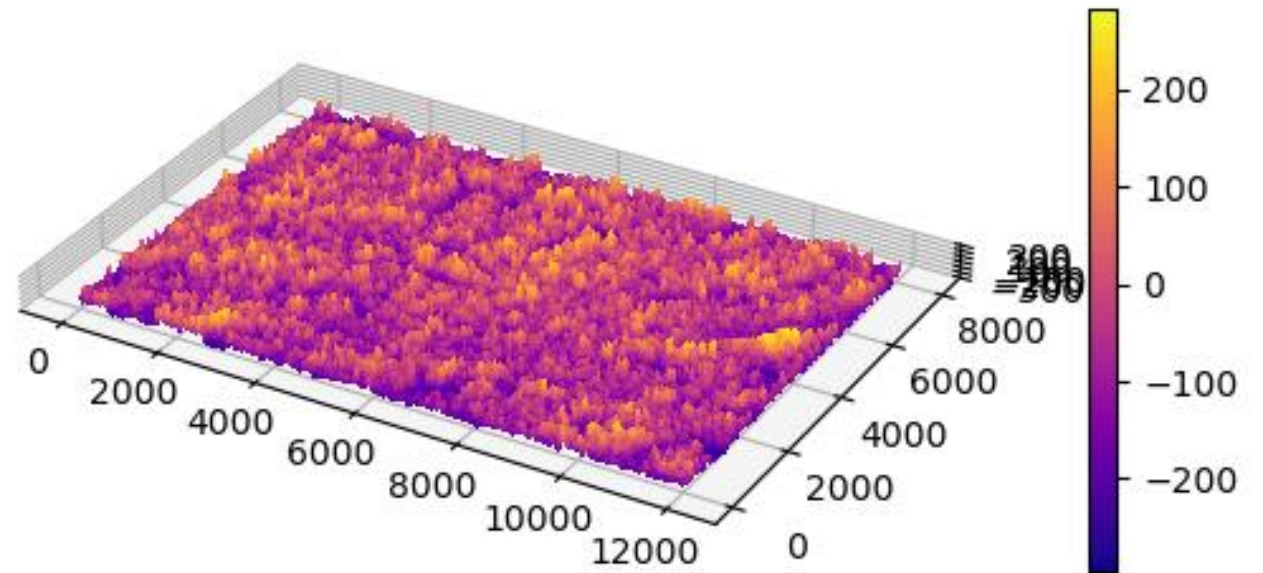
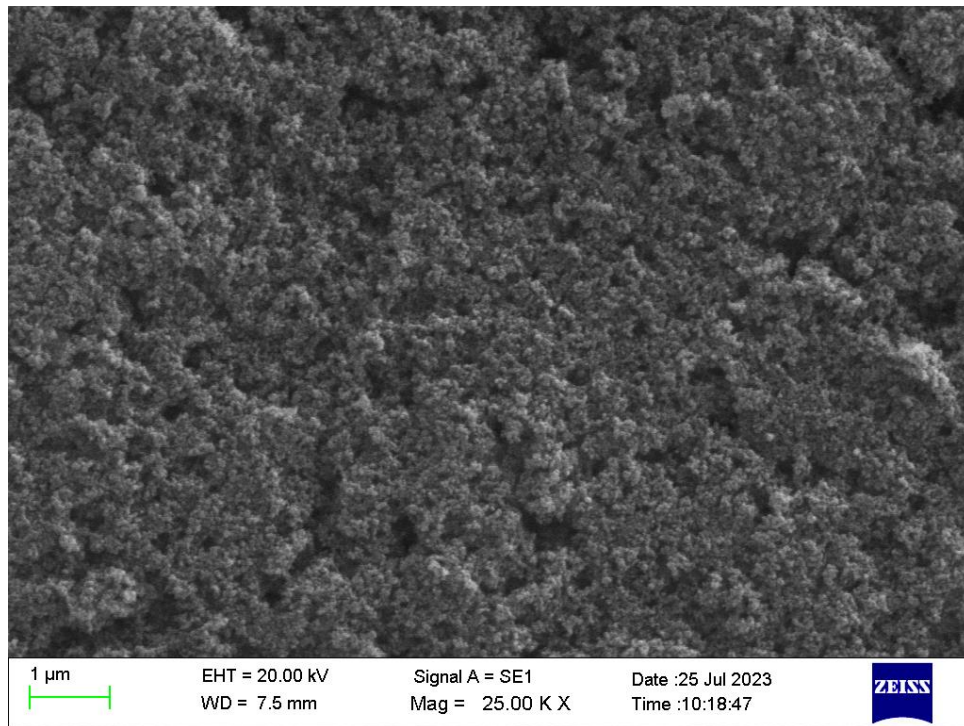
SEM Imaging



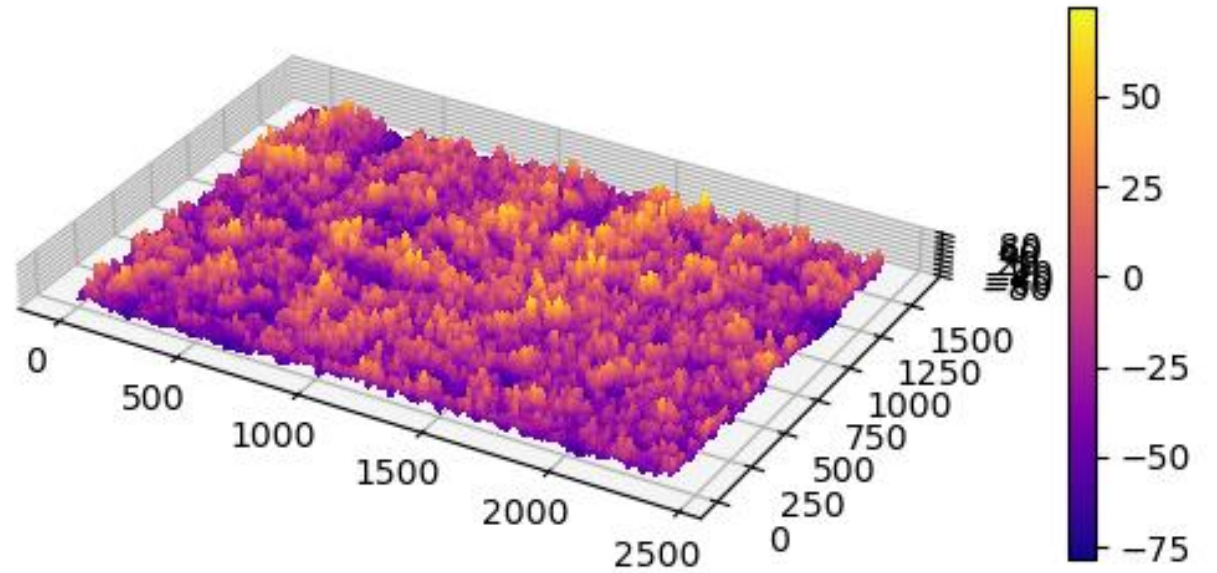
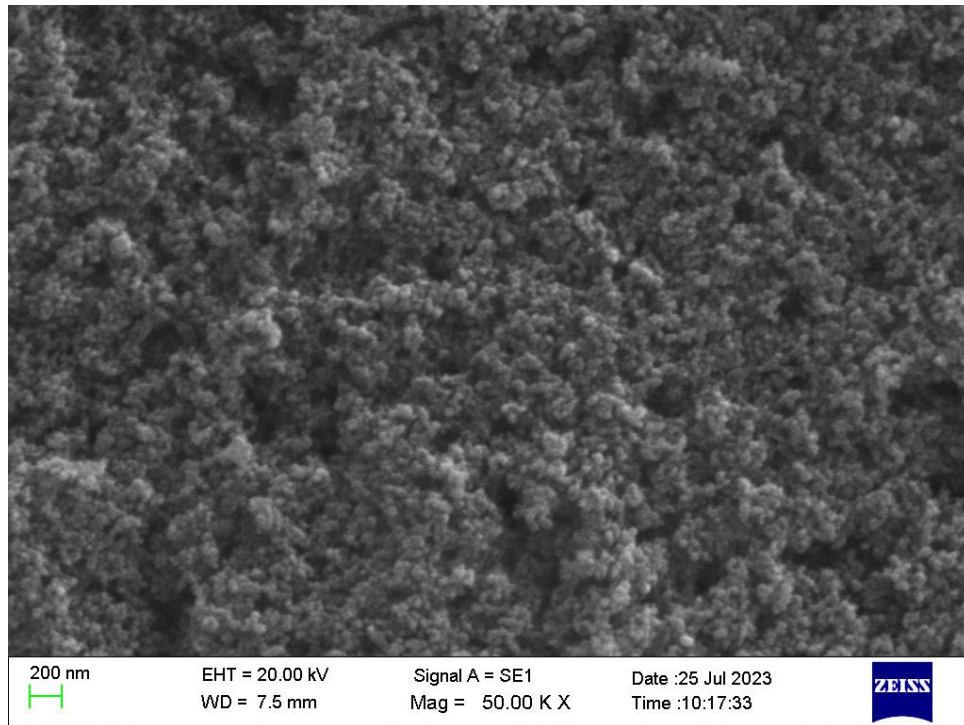
Analysis

- Used Python libraries like NumPy, Matplotlib to load and process SEM images.
- The intensity of darkness observed in scanning electron microscopy (SEM) images serves as a qualitative indicator of depth.
- <https://github.com/IsiraUdaththa/3D-representation-of-a-SEM-images>

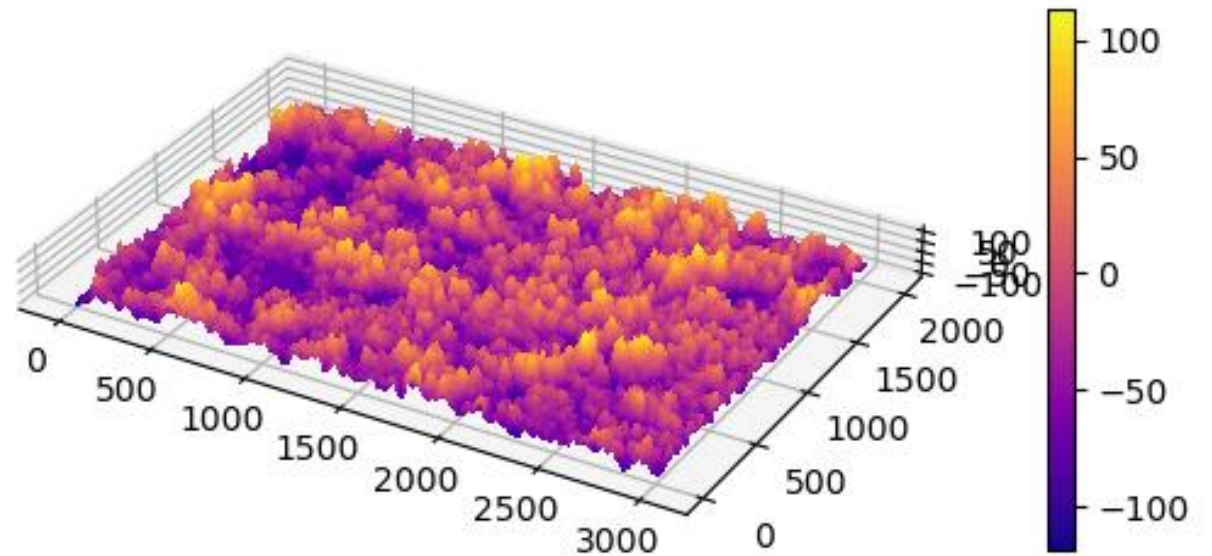
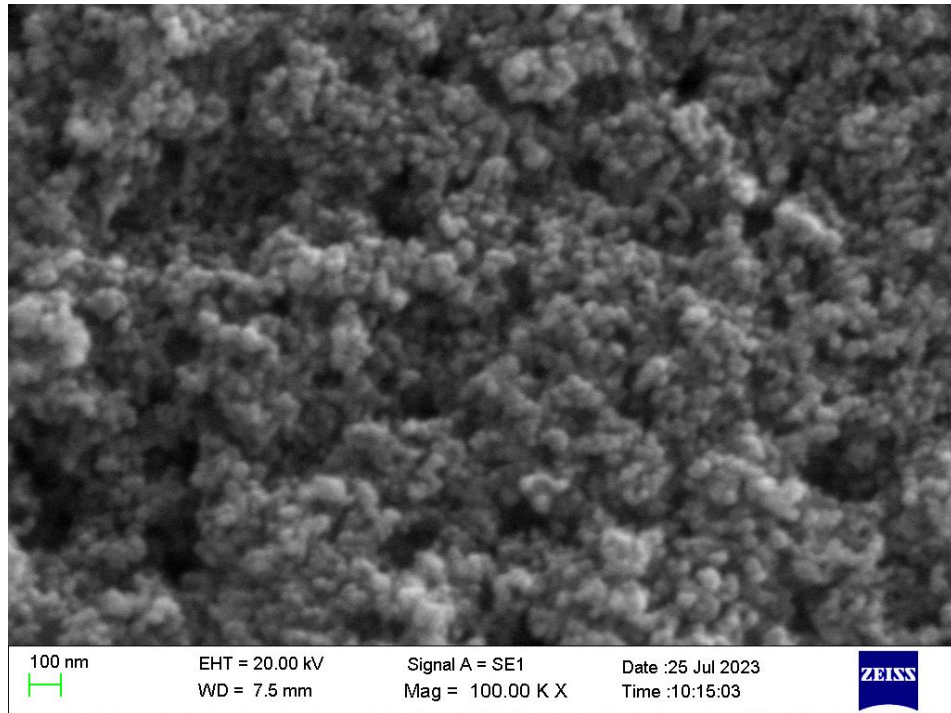
3D Depth Surfaces



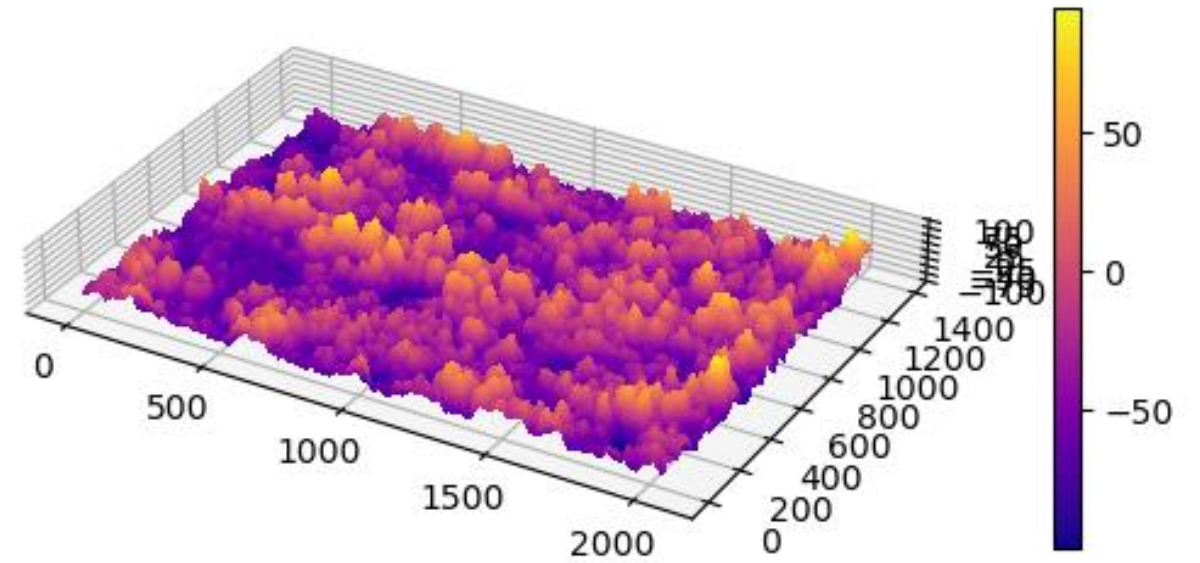
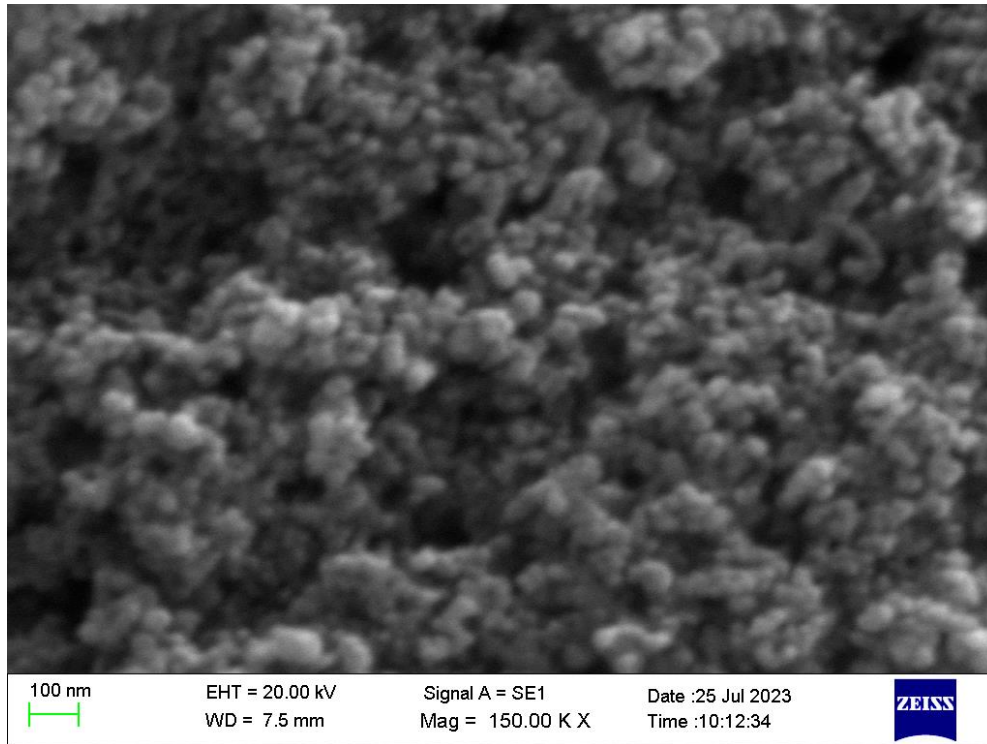
3D Depth Surfaces



3D Depth Surfaces

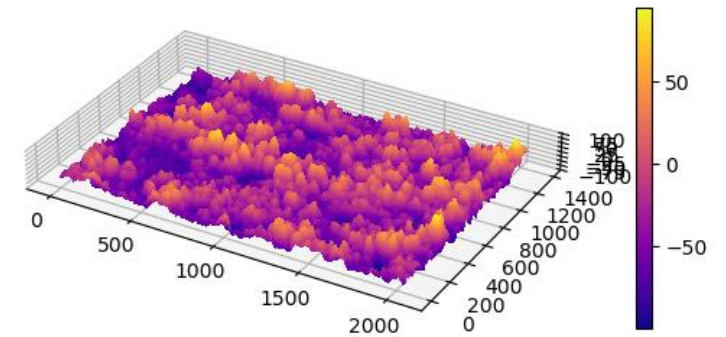
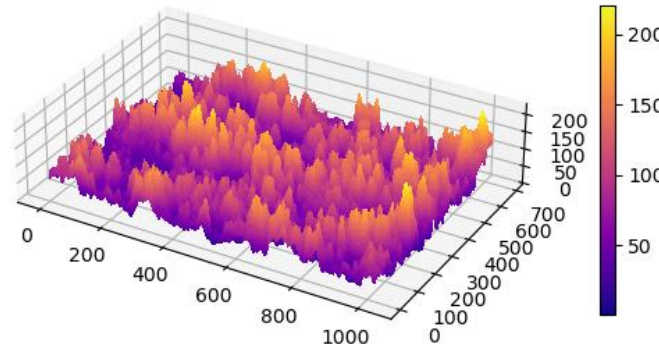
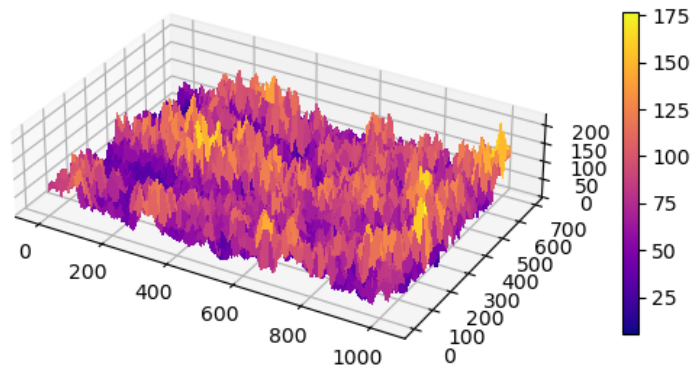


3D Depth Surfaces



3D Depth Surfaces

- The visualization varies depending on our depth estimation.
- Currently, there is no algorithm available to determine it.



Acknowledgments

- Thank any collaborators, advisors, or funding sources.

Q&A

Thank You!