

CT Data Collection Checklist For Filtration Analysis

1. On what length scale are you investigating filtration: complete filter (mm – m), filter elements (mm), or filter media (nm – mm)?

2. Select an appropriate X-ray energy that is suitable for your filter media material.

3. What magnification will you need to resolve your filter media material?

4. What voxel resolution do you need to resolve filter materials/fiber media to ensure your fiber diameter covers at 5 or more voxels?

5. What is the porosity and fiber diameter for your filter media?

Further reading:

[Wiegmann, A., Wagner, C., Azimian, M., Becker, J., Cheng, L., Linden, S., n.d. "The benefits of designing filter media using pore scale computer modelling" 42.](#)

[Wiegmann, A., Rief, S., Latz, A., Iliev, O., 2009. "Toward Predicting Filtration and Separation: Progress & Challenges" 16.](#)

TOOLS & RESOURCES

- [Deep Dive Workshop Series – Filtration Analysis](#)
- [GeoDict – The digital material laboratory by Math2Market](#)
- [Filtration Simulation with GeoDict 2022 by Dr. Medhi Azimian \(GeoDict User Meeting 2021 presentation recording\)](#)
- [Workshop: Simulation for Filtration Applications \(parts 1-3\) using GeoDict 2022](#)
- [Blog article: How to Improve the Signal-to-noise Ratio of X-ray CT Images](#)
- [Blog article: How to Improve the Resolution of X-Ray CT Images](#)

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imaging@rigaku.com

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