

The referenced two files contain code written for Matlab (v9.0.0) (Mathworks, USA) to take raw scattering data exported from the Mastersizer3000 (Malvern, England) software and compute the fractal dimension of aggregates being investigated. Minimal manipulation is required from the exported data. A more detailed discussion of fractal dimension calculations and an example of use can be found in Farner Budarz et al. Langmuir 2017.

Two codes are presented. Though the underlying calculations for both are identical, the first calculates the fractal dimension at each data point for all samples, while the second calculates the fractal dimension of a single measurement timepoint. For the latter, this is specified in the code as “c”, which must be designated prior to running the code.

It is our hope that these files will be of use to individuals using the Mastersizer3000 to calculate fractal dimension as automated calculation greatly reduces data processing time for large sample sets.

Files:

FractalDimensionFromMastersizer.m
FractalDimensionFromMastersizerSingle.m

Reference / Cite:

Farner Budarz, J., Turolla, A., Piasecki, A. F., Bottero, J. Y., Antonelli, M., & Wiesner, M. R. The influence of aqueous inorganic anions on the reactivity of nanoparticles in TiO₂ photocatalysis. Langmuir, 2017
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