MULTI-INSTRUMENT MANAGER (MIM™) SOFTWARE—BUILDING PARTICLE SIZE DISTRIBUTIONS FROM SMPS™, NANOSCAN SMPS, AND OPS DATA

Description

Software designed to collect and merge data from Scanning Mobility Particle Sizer™ (SMPS™) spectrometers and Optical Particle Sizers (OPS) to compile a single data set describing the particle size distribution from a few nanometers to several micrometers. This software is compatible with 3936 and 3938 SMPS spectrometers, 3910 NanoScan SMPS, and 3330 OPS.

Free download from TSI website: www.tsi.com/MIM2.

Applications

- Curve fit distribution(s) from nano- and micrometer sizers—up to three modes of lognormal distribution
- Merge and curve fit two distributions to combine measurements from nano- and micrometer sizers
- The following list shows example instrument configurations for various applications:

Application	Instrument 1	Instrument 2
Wide size range (≤10 nm to 10 µm)	SMPS Spectrometer or NanoScan SMPS	OPS
Wide SMPS Spectrometer size range	SMPS Spectrometer with 3085 nano DMA or NanoScan SMPS	SMPS Spectrometer with 3081 long DMA
High Resolution OPS data	OPS	OPS
Determine refractive index of aerosol	SMPS Spectrometer or NanoScan SMPS	OPS

Features

- User-friendly tool for data merging

- Allows three merge and curve fit options:

  - *No Correction*—Merges two distributions with no correction

  - *Minimum Gap*—Minimizes the gap between NanoScan SMPS or SMPS data and OPS data by refractive index adjustment

Figure 1: Example NanoScan SMPS and OPS merged curve fit

  - *Calibration Data*—Include custom OPS calibration based on reference particle sizes using a SMPS Spectrometer (3936 or 3938)

- Allows for synchronized data collection from multiple instruments:

  - Can be used to collect data from NanoScan SMPS, and OPS simultaneously

  - Can be used to schedule automated data collection

- Determines effective refractive index when merging SMPS Spectrometer or NanoScan SMPS data with OPS data

- View and export data as number-, surface-, or mass-weighted distributions

- Supports multiple data file formats:

  - 3910 NanoScan SMPS—*.N10 (NanoScan SMPS Manager) and *.csv (instrument's internal database)

  - 3936 and 3938 SMPS Spectrometer—*.s80, *.s82 (Aerosol Instrument Manager® software)

  - 3330 OPS—*.O30 (Aerosol Instrument Manager software) and *.csv (instrument's internal database)

  - MIM Software files—*.mat (Multi-Instrument Manager Native file: merged 3936 and 3938 SMPS Spectrometer, NanoScan SMPS, and OPS files or simultaneously collected NanoScan SMPS and OPS data files)

- Compatible with Windows® XP (32-bit only) and Windows® 7 (32-bit and 64-bit) operating systems
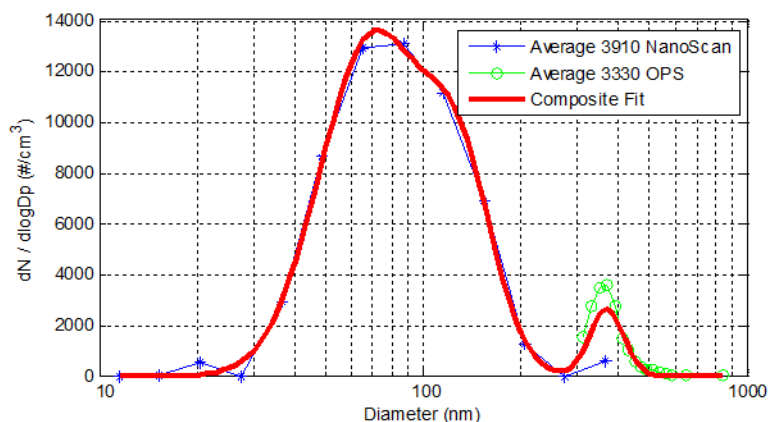
References

Tritscher, Koched, Han, et al, "Multi-Instrument Manager Tool for Data Acquisition and Merging of Optical and Electrical Mobility Size Distributions," *Journal of Physics*, Conference Series **617** (2015)

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Kenelec Scientific Pty Ltd
1300 73 22 33
sales@kenelec.com.au
www.kenelec.com.au

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