

New Features

Fibr izr™

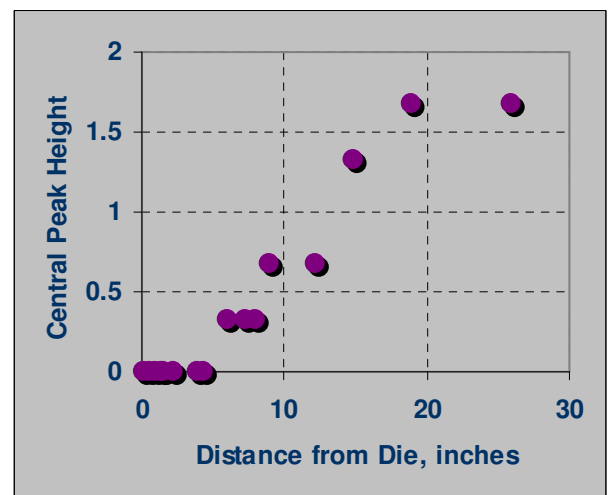
FibrSizr™ was introduced in the marketplace by Powerscope™ in 2003 to address the need of an online real-time fiber sizing technique.

Recognizing the fast changing needs of the fiber industry, Powerscope™ has gone on with new developments of the technology. Following are some of the new features:

- **Mean fiber size as small as 0.7 μm can be measured.** The smallest fiber size is reduced by incorporating shorter wavelength laser.
- **Thinner fiber suspensions can be measured.** Light transmission as high as 99.7% (only 0.3% of the laser light contributes to the scattering signal) generates meaningful signals, as opposed to the original requirement of at least 1% light attenuation (99% maximum transmission).
- **More flexibility with the working distance.** FibrSizr™ gives an accurate measurement of size regardless of fiber location and orientation, as long as fibers are within a certain ‘working distance’ from the receiving optics. Hardware and software modifications are incorporated to increase the working distance. Fibers spread out as far as 0.5 m can be measured.
- **Monitors the status of fiber solidification and crystallization.** FibrSizr™ signal is shown to have information about the status of solidification and crystallization of the fiber material at the measurement location. This information can be used to optimize the process. It is also valuable in developing realistic simulation models of the fiberizing processes.

“Central Peak Height” is a measure of radial refractive index profile that evolves within the fibers as a result of solidification.

This figure shows how fibers solidify as they move away from a meltblown die



Relevant Technical Papers:

- E. M. Moore, R. L. Shambaugh & D. V. Papavassiliou, "Ensemble Laser Diffraction for Online Measurement of Fiber Diameter Distribution During the Melt Blowing Process", International Nonwovens Journal, Summer 2004, pp. 42–47
- C. W. Fandrey and A. A. Naqwi, "Ensemble Diffraction for On- And Off-Line Sizing of Nonwoven Fibers", INTC03: International Nonwovens Technical Conference, Baltimore, Maryland, Sept. 15–18, 2003
- C. W. Fandrey and A. A. Naqwi, "A Laser Instrument for On- and Off-line Sizing of Nonwoven Fibers", 13th TANDEC International Nonwovens Conference, November 18-20, 2003, Knoxville, Tennessee
- C. W. Fandrey and A. A. Naqwi, "Recent Enhancements to Ensemble Laser Diffraction Technique for On-Line and Off-Line Sizing Of Fibers", INTC04: International Nonwovens Technical Conference, Toronto, Ontario, Sept. 20–23, 2004
- C. W. Fandrey and A. A. Naqwi, "Recent Developments and Applications of Ensemble Laser Diffraction Technology for Diagnostics of Nonwovens", 14th TANDEC International Nonwovens Conference, November 9-11, 2004, Knoxville, Tennessee

FibrSizr™ is available for purchase, lease or contract measurement. Contact:

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