

Fiber Industry

- Quality Control Solutions for Manufacturing of Fibers and Non-Woven Fabrics

Benefits for the Fiber Industry

● Fast and Reliable Quality Control

Bruker offers fast and reliable solutions to measure Spin Finish directly on fibers. Spin Finish avoids static electricity, guarantees sufficient lubrication and improves the cohesion of filaments. Thus, the properly coated fiber runs more smoothly through the spinning machines, allowing faster and more reliable operation. Even non-woven fabrics benefit from the Spin Finish for its improvement of handling and functional properties. Bruker's versatile TD-NMR method is capable of determining the amount of Spin Finish. The remarkable accuracy, reproducibility and repeatability of Bruker's minispec further allows for studying of the distribution for the Spin Finish content on the fibers, especially for very low Spin Finish concentrations (<0.1%).

The Range of Applications

Spin Finish determination, also known as Oil Pickup (OPU), Finish on Fiber (FOF), or Finish on Yarn (FOY), can be determined for practically all combinations of fibers and spin finishes. Based on long-term experience, it is suited for

- technical textile and high performance fibers
- multi-filament, monofilament, staple fibers, non-woven fabrics as well as texturized samples
- polyester, polyamide, polypropylene, polyethylene, polyacrylonitrile fibers and yarns

The Spin Finish Applications

Bruker offers both weighing and non-weighing methods:

Non-Weighing Spin Finish Method
(medium to high Spin Finish levels)

- High sample throughput
- Fastest sample preparation

Weighing Spin Finish Method

(very low to high Spin Finish levels)

- Highest accuracy and repeatability
- Special application: Check that Fibers are Spin Finish Free (very low Spin Finish levels for applications where Spin Finish is unwanted)
- Monitoring of fiber washing

Beyond Spin Finish Application

DIP (Polymer Coating) on Fibers

For specific high performance applications, polymer coatings, so-called DIP, are added to the fibers, e.g. for high performance car tires.

- Polymer quantification
- Polymer coating thickness evaluation

The Key Advantages

Bruker's minispec offers many advantages over competing analytical methods like wet chemical analyses, gravimetry and near infrared (NIR).

Fast and accurate

The analysis delivers reliable results in less than 60 seconds. It is 2-3 times more accurate than any classical wet chemical method. The system offers the highest repeatability and ultimate reproducibility, especially compared to wet chemical approaches and NIR.

Measurement of the sample *as is*

The analysis requires simple, minimal sample preparation. Moreover, it is color and surface independent and all of the sample volume is measured.

Fast and convenient calibration

The system runs with a minimum of calibration efforts. Only 3 to 5 samples are required to set up a calibration in form of a linear regression.

Safe and efficient

The TD-NMR analysis provides workplace safety as well as reduced labor costs. It avoids the use of solvents which is beneficial for the operator's health and the environment.



Fiber use is very broad. For example, they are utilized in the textile industry for clothes and carpets. They are also found in a broad variety of everyday products like toothbrushes, car tires, car seats, air bags etc.

Features and Benefits

Spin Finish Analyzer

- Excellent magnet and temperature stability for high reproducibility and repeatability
- One unit, all integrated (excluding PC)
- Closed cabinet, filter-free, no forced air exchange
- Economic, power consumption during steady state < 40 W
- Silent, acoustic noise < 39 dB(A)

The minispec Plus Software

- Daily instrument validation using Bruker daily check sample
- Multi languages m+ software (9 languages) with fully traceable data

Validation Samples

- Set of Bruker calibration transfer and validation samples provided (weighing method)

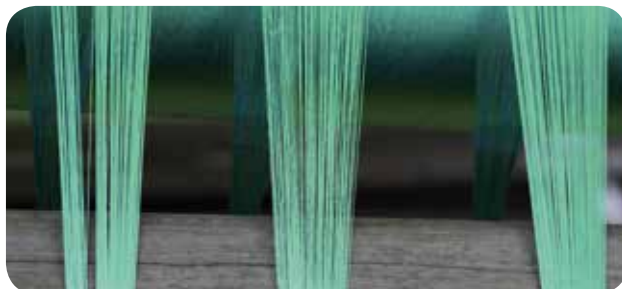
Customized Solutions for Quality Control

Barcode reader

Samples can be tracked by using the barcode reader.

Database

The results can be automatically stored into databases and visualized in clearly arranged tables.



The Bruker Commitment



We provide worldwide expert system support.

Application Consulting

Bruker's minispec application groups are located in key sites around the world to provide expert system support, method development, and application improvement. The corporate philosophy and commitment guarantee customers a long-term, reliable partnership and

- application training courses
- direct support through telephone and electronic communication



We offer our customers regular training courses.

Training

Individual training sessions can be arranged directly at Bruker facilities around the world. A visit to one of the company's demo facilities allows the customers to see all minispec configurations and the full range of accessories.



We provide competent service to ensure reliable operation.

Service

Bruker instruments are designed to provide many years of trouble-free operation. However, should a problem occur, a network of Bruker companies and representatives around the world are ready to respond fast and competently to customer needs. Professional installations and a high standard of post delivery service are main commitments to Bruker customers.