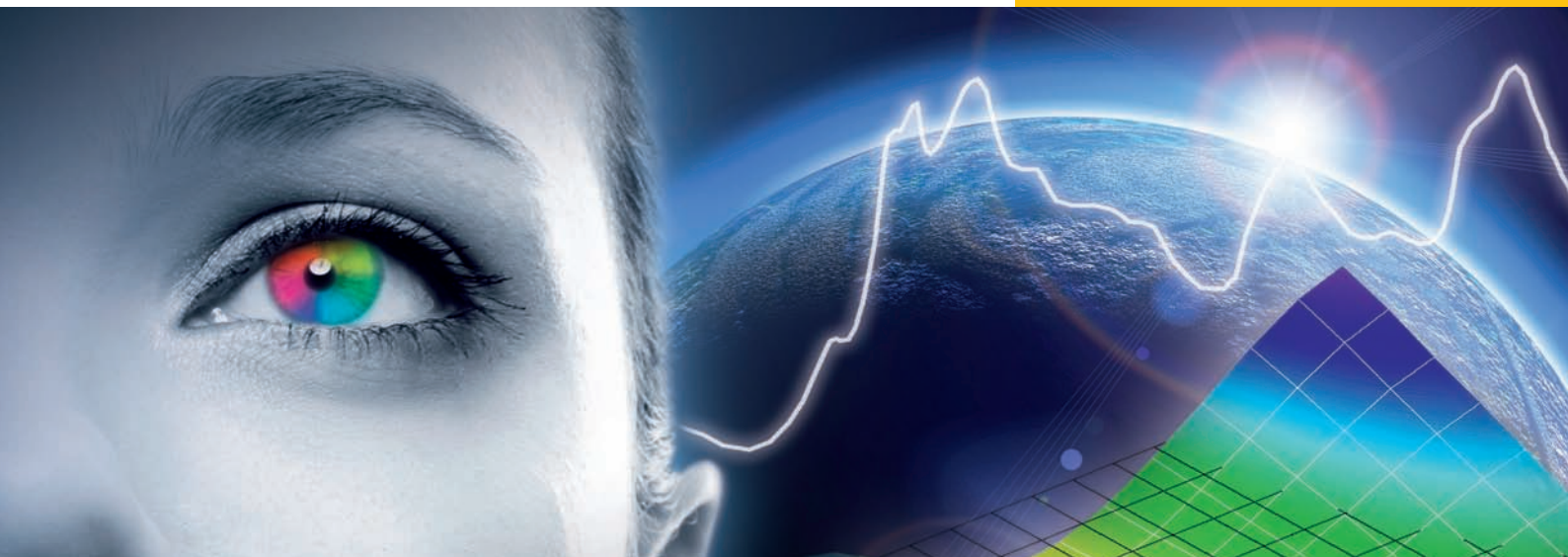
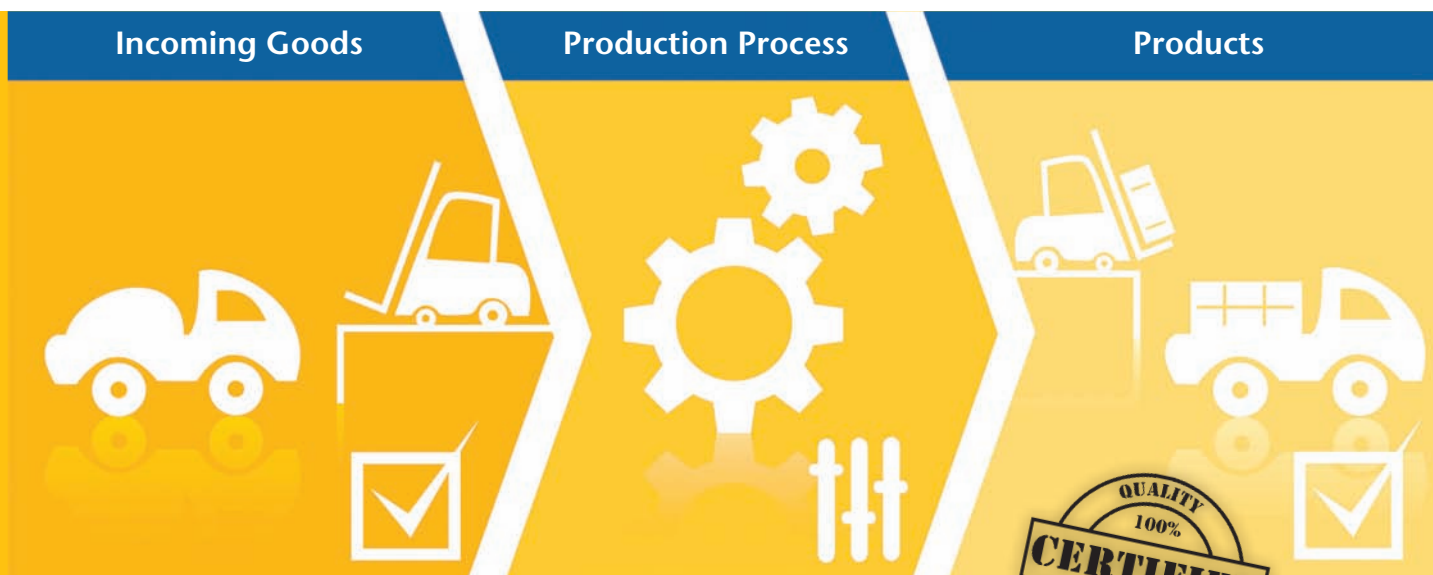


# PSS Spectrometer Systems for Process Analytics

fast, precise, reliable



# Process Analytics: Universal and Efficient



Polytec Spectrometer Systems open up numerous possibilities for economic improvements in production environments: from incoming materials inspection to final product control.

The decisive advantage of process analytics is the automated real-time control of production processes. In addition to ensuring a consistent product quality, the production process itself can be monitored and optimized.

Process analytics enables high-quality, cost-effective, and convenient solutions that provide a fast ROI. The method can be applied at several levels of the production chain: incoming goods inspection, process control and 100% end

product classification. Many relevant parameters can be derived from a single measurement. For example, qualitative and quantitative chemical analysis, particle size or layer thickness measurements are typical applications.



## NIR Spectroscopy

Near infrared (NIR) spectroscopy is one of the most important and widely used methods in process analytics. Especially when based on diode array technology, it provides reliable results even at high measurement rates.

## Advantages of NIR Process Analytics:

- Real-time process monitoring and control
- Non-destructive, non-invasive
- No sample preparation and wastage
- Increased efficiency and cost reduction e.g. by reducing rejects
- Suitable for statistical process management
- Proven technology

# The System Concept: Modular for any Demand



As a manufacturer of high-quality optical measurement equipment, Polytec offers configurable spectrometer systems allowing optimized solutions for any individual application.

## Modular Spectrometer Systems: Designed for Flexibility and Precision

Polytec Spectrometer Systems (PSS) are designed for flexibility and provide

optimum solutions for various applications. This is achieved by combining the best suited sensor heads with spectrometers and process software packages. The components are highly standardized in order to ensure uncompromised

high precision and ease of use during process integration. The PSS systems are based on well-proven technology and offer application-specific solutions that are nevertheless safe and easy to integrate.



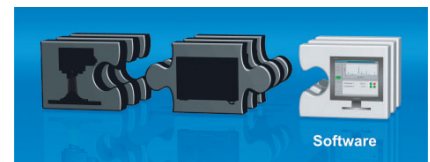
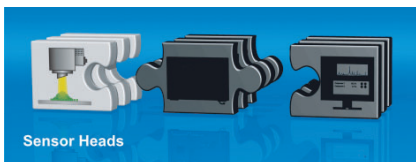
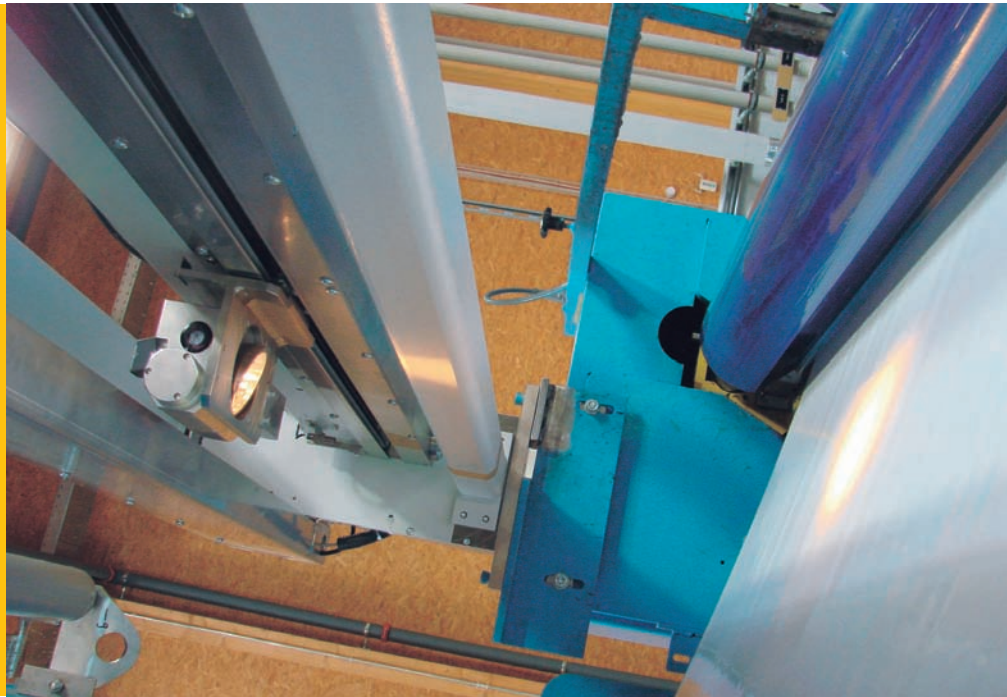
## Benefits of the Modular System Concept:

Standardized equipment and software providing

- High flexibility
- Easy integration
- Simplified operation

# The Basis: High-Quality Components

Polytec Spectrometer Systems are manufactured using optical and electronic components specifically developed and manufactured in-house. We know our products down to the smallest screw. Everything is precisely coordinated to achieve high reliability with prompt and highly competent customer support.



## Watchful Eyes: The Sensor Heads

Appropriate sample presentation is the key to successful system operation. A variety of specialized sensor heads are available to address different sample properties and installation situations.



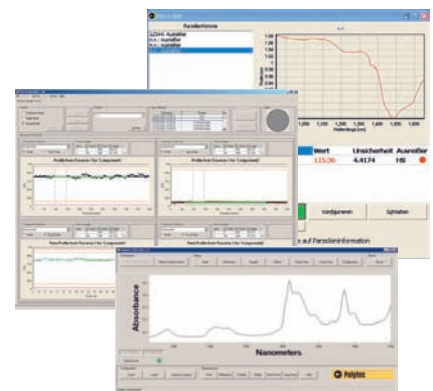
## Efficient Measurement and Control: The Spectrometer

Diode array technology combined with a superior transmission grating design enables the PSS spectrometers to be used for fast and reliable data acquisition. Various spectral ranges and power supply options are available.



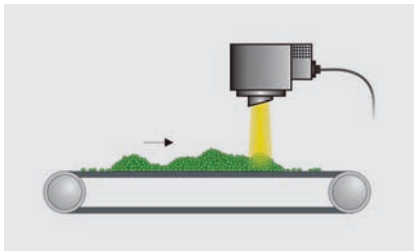
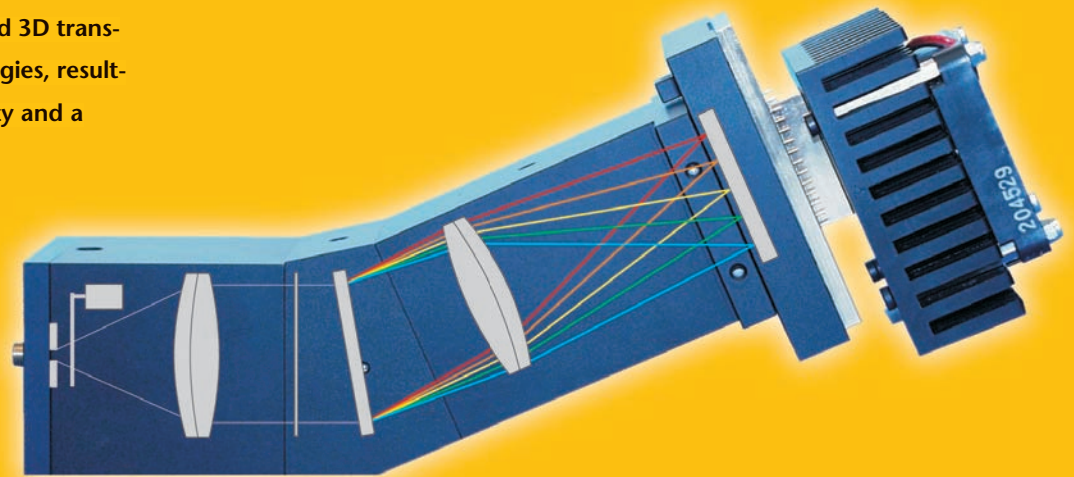
## From Signal to the Measured Values: Polytec PSS Software

Depending on the specific application, dedicated software solutions are available for laboratory data acquisition, multivariate data analysis, and process control.



# NIR Spectroscopy: Versatile and Robust

The core component of our NIR Spectrometer System is the PSS Polychromator. This assembly combines advanced diode array and 3D transmission grating technologies, resulting in high optical quality and a robust design.



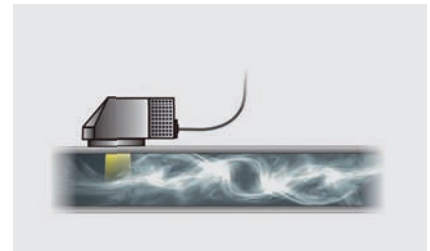
## Process Analytics on Solids

Online control during the production of solid materials such as bulk goods or paper and textile webs can be performed efficiently and cost effectively.



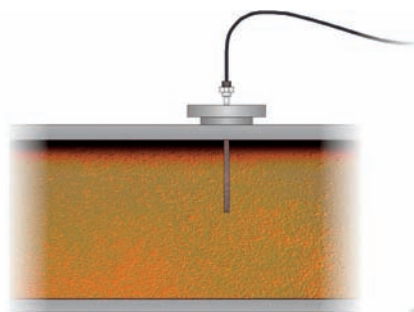
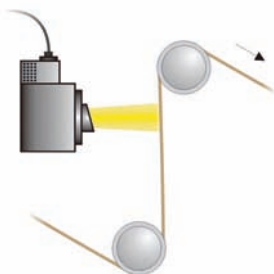
## Process Analytics on Fluids

Polytec Spectrometer Systems are used in process control of various fluid materials such as liquids, suspensions, dispersions, or paste-like media.



## Process Analytics on Gases

Also established are online measurements performed on gases, aerosols, and fumes. In particular, the quantitative analysis of multi-component systems is addressed.



# Certified Quality - Made in Germany



Polytec has provided high-technology optical-based measurement solutions to researchers and engineers for over four decades. We are committed to supplying the most precise and reliable instruments and sensors available anywhere for non-contact measurements.

Polytec has been ISO-certified to DIN EN ISO 9001:2008 since 1994. Our spectrometer systems are developed and manufactured at the Polytec headquarters in Waldbronn, where only the highest quality and stringently tested components are used.



## More Info:

### **Polytec GmbH (Germany)**

Polytec-Platz 1-7  
76337 Waldbronn

Business Unit Analytics  
Tel. +49 7243 604-160  
st@polytec.de

[www.analytics-online.com](http://www.analytics-online.com)

### **Polytec GmbH (Germany)**

Polytec-Platz 1-7  
76337 Waldbronn  
Tel. +49 7243 604-0  
Fax +49 7243 69944  
[info@polytec.de](mailto:info@polytec.de)

### **Polytec France S.A.S.**

Bâtiment Orion – 1<sup>er</sup> étage  
39, rue Louveau  
92320 Châtillon  
Tel. +33 1 496569-00  
Fax +33 1 57214068  
[info@polytec.fr](mailto:info@polytec.fr)

### **Lambda Photometrics Ltd. (Great Britain)**

Lambda House, Batford Mill  
Harpenden Hertfordshire  
AL5 5BZ  
Tel. +44 1582 76 43 34  
Fax +44 1582 71 20 84  
[info@lambdaphoto.co.uk](mailto:info@lambdaphoto.co.uk)

### **Polytec Japan**

Arena Tower, 13<sup>th</sup> floor  
3-1-9, Shinyokohama,  
Kohoku-ku, Yokohama-shi,  
Kanagawa, 222-0033  
Tel. +81 45 478-6980  
Fax +81 45 478-6981  
[info@polytec.co.jp](mailto:info@polytec.co.jp)

### **Polytec, Inc. (USA)**

North American Headquarters  
16400 Bake Parkway  
Irvine, CA 92618  
Tel. +1 949 943-3033  
Fax +1 949 679-0463  
[info@polytec.com](mailto:info@polytec.com)