

A Flexible NIR-System



From Lab to Process

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- Process Analytics today: Motivation and Objectives
- Tools: NIR-Spectroscopy

Solutions

- Process Implementation: Concept and general aspects (modular design etc.)
- Example Biodiesel

Summary

Closing Remarks



Process Analytics Today





Process Analytics Today





Process Analytics Today

	Laboratory	Process
Process Step A: Sampling	manually —	automated feeding
Process Step B: Measurement	in the laboratory	→ at the production line
Process Step C: Data Evaluation	appraisal by lab staff —	→ by computer based algorithms
Process Step D: Feed Back	via personal	automatically to PLC



Tools





Tools





Sampling

Sensor Heads







Contact

Non-contact (e.g. Conveyor belt)

Compact

Immersible Probes Transmission Reflection





Measurement

Spectrometer





Measurement

Spectrometer

Spectral Range

PSS-172X: 850 – 1.650 nm PSS-212X: 1.100 – 2.100 nm

Housing:

1/2 19"-Housing: PSS-1721 and PSS-2121 19"-Housing: PSS-1720 and PSS-2120

Power Supplies

PSS-P-005: 110 – 240 V PSS-P-012: 12 – 24V







Interpretation

Software

- Free configurable User interface and functionality
- Data acquisition and system control
- Definition of measuring task
- Implementation of chemometric models
- Variable Interface to PLC

- ...





Feedback

Interface



- Software for Configuration
- **4-20mA**
- Profibus
- Etc.

- ...







Example Biodiesel

Objective





Example Biodiesel

Approach





Example Biodiesel

Benefits



- One System for Lab and Process
- Rugged Design
- Non destructive measurements within milliseconds
- Up to four measuring channels (upgradeable)
- Low Maintenance
- Great Distances

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Summary



Concluding Remarks

- Process Analytics
 - Growing Increase
 - Process Optimization
 - Product Optimization



- NIR Spectroscopy
- Flexibility (Fiber Coupled Probes)
- Multi-Channel-Applicability (Fiber Optic Switch)
- Fully Automated Operation (Integrated Reference)
- Standard Process Software (Data Acquisition, Prediction, Communication)

Exhibition Booth J34-K35 (Hall 6.3)

