BRUKER Optics

RAMSYS™

thinkforward

The ***RamSys***™ is a dedicated Raman system for analytical process control applications.

Process Control

- Ideal for in-line reaction monitoring and control of emulsions, viscous media and slurries.
- Special probes for hazardous environments.
- Full range of industry standard communication protocols and Ethernet connectivity.

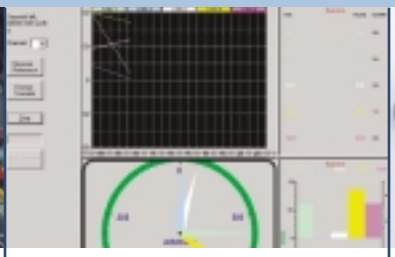
Rugged components such as hazardous environment protected Raman probes and hardened spectrometer parts makes the ***RAMSYS***™ ideal for use in the industrial environment.

Monitoring of chemical processes using "in situ" analyzers is becoming more popular. Spectroscopic techniques are of special interest because they provide precise information about the process at the molecular level. A better understanding of the process can improve efficiency, resulting in reactions that produce less waste, use less raw material, and yield better products. These methods are also becoming important for process optimization, as they enable precise monitoring of the process, which results in higher reliability.

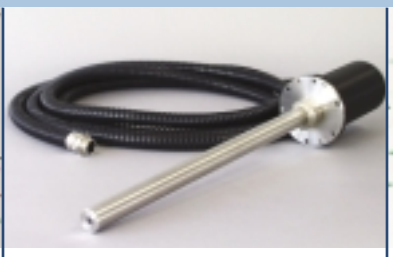
In many applications Raman combines the spectral simplicity of infrared spectroscopy with the ease of sampling of near infrared spectroscopy. The high content of spectral information and the use of fiber optics for product sampling makes Raman useful for process optimization and monitoring. In addition, Raman offers specific advantages for certain types of products and processes.

innovative, intuitive, intelligent

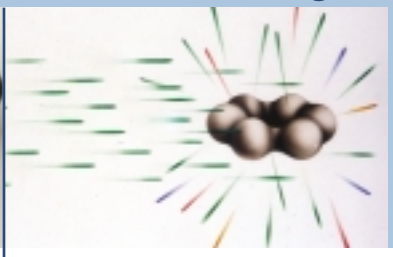
Bruker Optics offers process engineering expertise for plant integration.



OPUS/*Process* software features full integration, automation and ease of use.



Various FT-Raman probes are available with immersion and non-contact optics.



Bruker Optics' FT-Raman spectrometers offer fluorescence free measurements.

Raman Process Control

www.brukeroptics.com

RAMSYS™ for FT-Raman process control

RAMSYS™

FT-Raman Advantages:

FT-Raman has the advantage of its long wavelength excitation at 1064 nm. Thus fluorescence, which is often observed when using visible Raman systems, is significantly reduced. FT-Raman process analysis is especially useful in the following situations:

- Sample fluoresces when using visible excitation.
- Symmetrical or homomolecular nuclear groups are formed or consumed during the reaction.
- Strongly scattering mixtures (e.g. emulsions, slurries) are present.
- Chemometric methods cannot be used effectively (e.g. when reaction starting conditions often change)

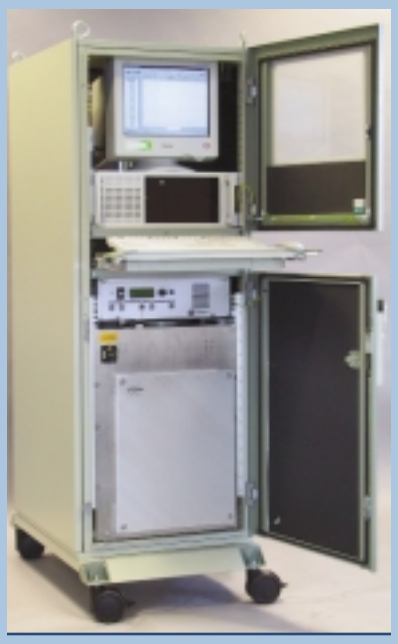
FT-Raman Probes:

RamProbe™ is a compact and robust industrial probe for Bruker Optics FT-Raman spectrometer ***RAMSYS***™. The stainless steel measuring head is available with different tube lengths. Optical technology is based on the ***RamProbe***™ lab version, which includes a built-in filter for removing the Raman signal-caused by the quartz material of the optical fibers.

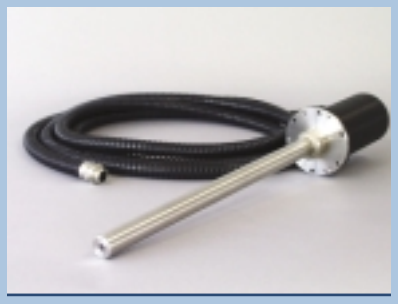
- NEMA 4 (IP(65)) rated
- Standard stainless steel probe head, other materials can be applied on request.
- Standard sapphire window
- Various tube and fiber lengths
- Various temperature and pressure specifications

IntegRam™ is a industrially hardened heavy-duty probe for Bruker Optics FT-Raman spectrometer ***RAMSYS***™. The Probe body as well as the fiber optic cables are protected for use in hazardous environments.

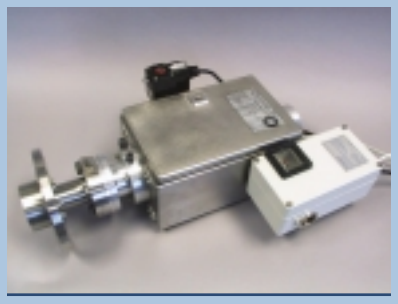
- Industrial version with active heat sink
- Redundant safety devices
- Hazardous environment protected EEx pII T4 (EN 50016) (For Europe)
- Built-in self check function



RAMSYS™



RamProbe™



IntegRam™

For more information contact us:

BRUKER Optics

North America
+ 1 978 439 9899
www.brukeroptics.com
optics@brukeroptics.com

Europe
+49 7243 504-600
www.bruker.de/optik
optik@bruker.de

Asia
+852-2796-6100
asiapacific@brukeroptics.com.hk