Raman Probes®

... FOR RAMAN MEASUREMENTS OF LIQUIDS IN PROCESS AND LAB APPLICATIONS

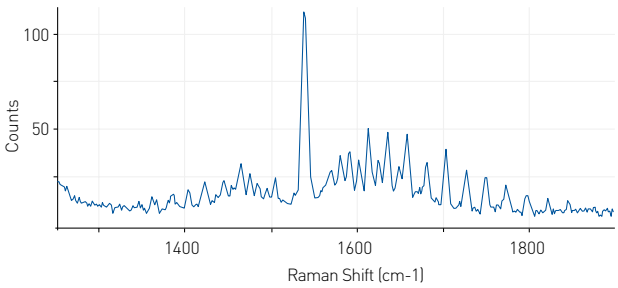
Functional Principle

Raman spectroscopy is a spectroscopic technique used for chemical analysis of solid, liquid or gaseous samples. It relies on inelastic scattering, or Raman scattering, of monochromatic laser light. The laser light interacts with molecular vibrations, resulting in the energy of the laser photons being shifted up or down. The shift gives information about the nature of the analysed samples.

Differentiation to Mid-IR

Raman spectroscopy blends some of the advantages of both Mid-IR and Near-IR spectroscopy. As in the case of Mid-IR, the molecular bands observable by means of Raman scattering correspond to fundamental molecular vibrations, providing a one-to-one correspondence between Raman spectral features and molecular functional groups.

Raman has a major advantage over Mid-IR in that it can employ the robust fused silica and sapphire optics commonly used in the Near-IR and UV-Visible regions.



Multipass Spectrum of Methane

Advantages and benefits:

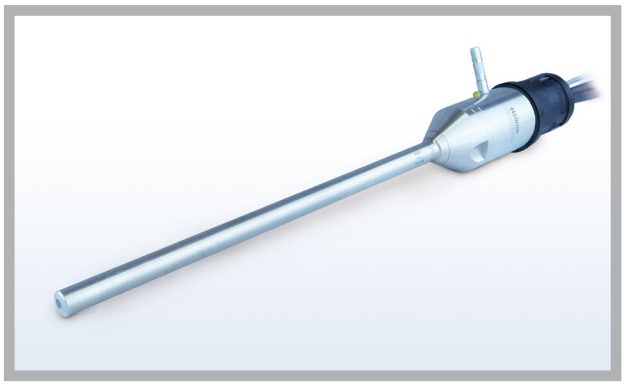
Ideal for Instrument manufacturers (OEM), as it can be adapted to specific application requirements.
Options include:
// Size and material
// Optics and connectors
// Excitation wavelength and filters

Fields of application:

// Process & PAT
// Chemical
// Pharmaceutical
// Forensics
// Petrochemical
// Life Science

WHY HELLMA:
AS LEADER IN OPTICAL IMMERSION PROBES HELLMA OFFERS A WIDE VARIETY OF PROBES FOR MOLECULAR SPECTROSCOPY RANGING FROM UV/VIS, NIR TO MID-IR, COMPLEMENTED BY RAMAN SPECTROSCOPY.

WITH A STRONG AND COMPETENT INTERNATIONAL TEAM SUPPORTING THE PROBES, HELLMA CAN PROVIDE THE SUITABLE SOLUTION TO YOUR SPECIFIC REQUIREMENTS.



TIDUS RAMAN IMMERSION PROBE

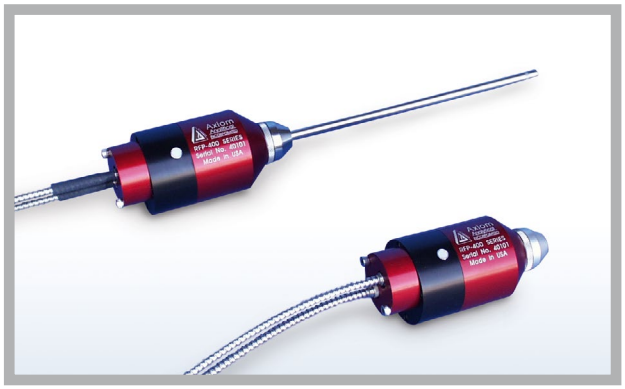
For Raman measurements of liquids in process and lab applications

The Tidus Raman probe is suitable for laboratory and process sampling. This fiber-optically coupled probe has a modular construction which maximizes sample opportunities. Non-contact optics can be used to measure through windows, bottles, or simply at a convenient distance from a sample. Process optics are available, which also provide an interlock for safe operation of the Laser.

RFP-500 PROCESS RAMAN PROBES

Robust probes for even the most demanding applications

The RFP-500 Series has been developed specifically to meet the need for Raman probes capable of performing reliably under the harsh conditions common to most process environments. The probes in this series combine robust optical designs with Hellma Axiom's proprietary welded metal window sealing technique.



RFP-400 RAMAN PROBES AND FLOW CELLS

Modular probes for research and process development applications

RFP-400 Series Raman probes have been designed to provide the same high performance as the RFP-500 probes but in a highly flexible package intended for laboratory and process development applications. The key to the design is a standardized optical head combined with interchangeable filter modules and objective lens/immersion assemblies. Flow cells for gas phase or NeSSI compatible cells for online applications are also available.

Do you have any questions?
Your contact person:
Dr. Oliver Mandal, Product Manager
Fiber Optical Systems

Hellma GmbH & Co. KG
Klosterrunsstraße 5 // 79379 Müllheim/Germany
phone: +49 7631 182-1020 // fax: +40 7631 182 1011
e-mail: info.de@hellma.com

www.hellma-analytics.com
Subject to chance without notice.
064-505-PB04-725//GB//04//2016