

PROCESS RAMAN

Using process Raman as a POLYMERIZATION PROCESS measurement package

WHAT IS RAMAN?

Raman spectroscopy is an optical analysis technique. It relies on the measurement of the vibrational properties of molecules. Raman has revolutionized process analysis with its high-resolution compositional data, linear response to concentration, non-destructive nature, ability to measure samples in real-time, and NO sampling system

WHY RAMAN?

The highly viscous polymer industry has relied on a traditional laboratory analyzer package to measure polymer/solvent speciation and polymerization reaction progress.

A MarqMetrix® Raman spectrometer can be used as a field process analyzer installation for a real-time measurement data package. It offers superior analysis and requires NO calibration – ever. With Raman, the reactor batch turnover time schedule can be optimized, and continuous reactor reaction progress can be measured with <6SEC offset from real-time.



REQUEST A DEMO

MarqMetrix® All-In-One Raman System

RAMAN VS. GAS CHROMATOGRAPHY

	RAMAN SPECTROSCOPY	ULTRAVIOLET SPECTROSCOPY
Analysis Time	Seconds	Minutes
Ease of Use	Yes	No
Calibration	No; Factory-calibrated	Yes; Weekly maintenance
Setup Time	15 mins	Days
Scientist Required	No	Yes
Molecular Identification	Very specific: molecular fingerprint	Lacks specificity

TAKEAWAYS

- A Raman spectrometer is easy to install: NO sophisticated sample cell or consumables required
- Life cycle cost is dramatically reduced
 - NO analyzer calibrations
 - NO sample cell maintenance
 - NO sample source maintenance
- Improved process control
 - Superior analysis data every 6 seconds
 - More accurate data than laboratory services
- Zero ongoing operating expenses:
 - NO yearly planned maintenance by the vendor
 - NO weekly/monthly/quarterly/yearly maintenance by an analyzer technician
 - Ultra-stable solid-state device with NO moving parts

For more information contact:

206-971-3625



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RAMAN IN ACTION: POLYMERIZATION PROCESS MEASUREMENT PACKAGE APPLICATION NOTE

A manufacturer is currently using a MarqMetrix All-In-One (AIO) Raman System as a primary process (field) analytical measurement package for polymer/solvent speciation and polymerization reaction progress measurements with <6SEC offset from real-time.

Requirements:

- Replace the existing sample extraction probe with a simple MarqMetrix process BallProbe® immersion optic
- Replace existing sample transfer tubing with flexible armored weather-resistant fiber-optic signal transfer cable
- Remove the heated sample cell and calibration system (neither are required for the MarqMetrix AIO Raman System)
- Remove the UV light source module and the UV detector module

Solution:

A single MarqMetrix AIO Raman spectrometer [mounted inside of a NEMA 4X welded 304 SS enclosure (24in x 24in x 16in), heated and cooled with thermostatic-control, certified to ANSI/ISA-12.12.01-2000 for use in Hazardous (Classified) Locations Class I Groups A - D Div. 2 (outdoor)] can provide field composition and reaction progress measurements for your viscous polymer reaction processes.



MarqMetrix All-In-One Raman System in SS Enclosure
NO Sample Cell



LEARN MORE ABOUT THE ALL-IN-ONE >



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