

i-Raman® Prime for Process Analytical Technology

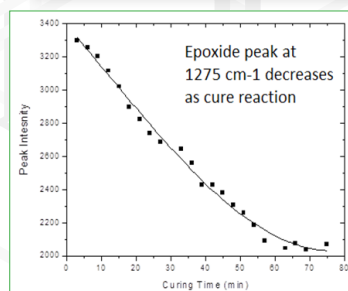
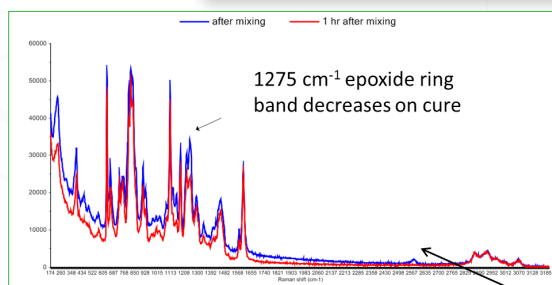
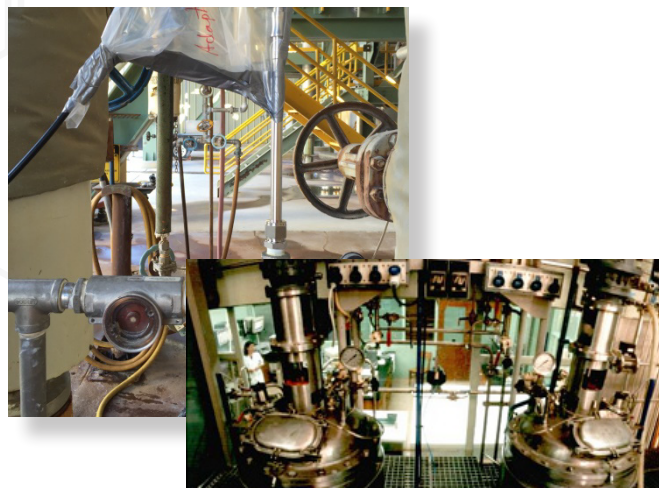
Raman spectroscopy used for rapid off-line, at-line, on-line or in-line analysis has the benefit of:

- Faster (real-time or near real-time) analysis
- Data collected more often
- High precision data
- Providing the pulse of a process

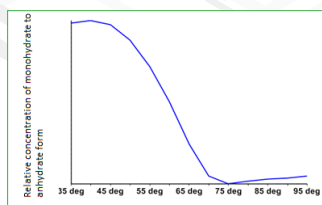
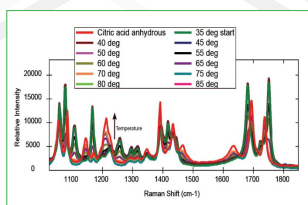
Process analytical technology (PAT) for real-time analysis in the pharmaceutical, petrochemical, chemical and food industries can be used for controlling processes including:

- Chemical reactions
- Crystallization processes
- Blending operations
- Coating processes
- Polymorphic transitions
- And many more

Examples of the real-time trends of processes including epoxy curing, and a polymorphic transition measured using Raman spectroscopy are illustrated in the plots shown here.



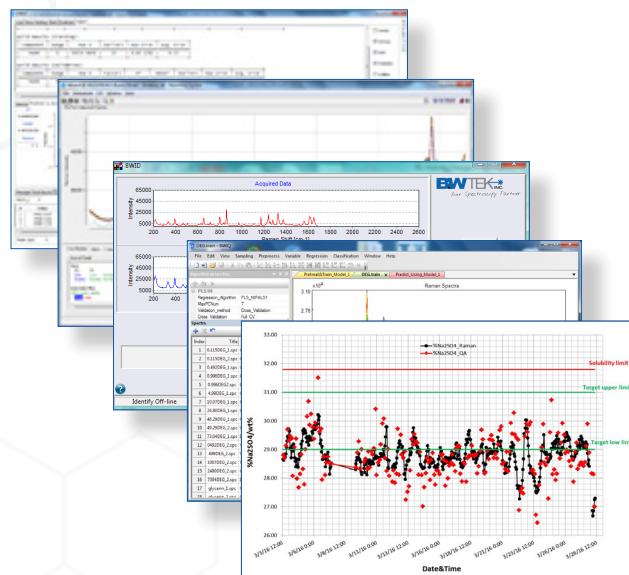
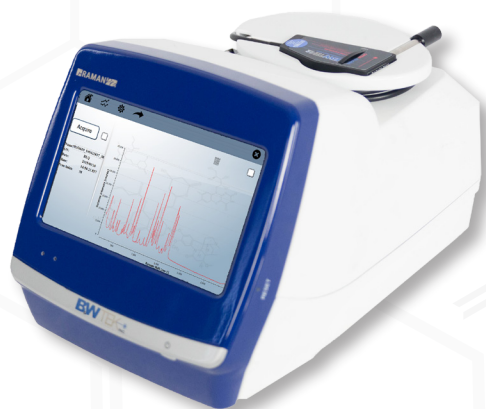
Hardener consumed on reaction; peak at 2580 cm^{-1} disappears



Key Advantages of the i-Raman Prime:

1. Multiple laser excitation options available to best fit your needs
2. Small size and portable high-throughput system for ease of use, from development lab to process
3. Industry-certified enclosure for harsh working environments
4. Customizable industrial-grade Raman probe options for various sampling conditions
5. Regulatory compliant software/SDK package for real-time monitoring, from simple peak trending to qualitative identification or quantitative prediction of components
6. Comprehensive project support, including feasibility analysis and chemometric model development

i-Raman® Prime Set-Up for Process Analytical Technology Applications



To perform high quality measurements for these applications, we offer:

- High-throughput i-Raman Prime
- Real-time monitoring and chemometric software: BWIQ, BWID, BWQT, and other 3rd party process monitoring platforms
- Flow cells and other optional accessories, including long-working distance probes, to measure through glass reactor walls
- Raman spectral libraries for easy identification (optional)

Contact your local B&W Tek representative today or visit us at bwtek.com