

## The Solution to Process Understanding

Designed for the analysis of chemical processes by NMR, InsightMR is the ideal solution for both industrial and academic scientists studying or optimizing organic reactions.

InsightMR consists of two components, a flow tube and dedicated software, for online monitoring of chemical reactions in real-time under real process conditions.

Insights into the mechanism and kinetics of chemical reactions are now at your fingertips!

### InsightMR Software v.1.0.5 New Features at a Glance

The new 'flow tube ready' version of the InsightMR software enables straightforward monitoring of reactions in non-deuterated solvents. Select the solvent, a WET experiment, the number of peaks to suppress and let the software do the rest:

- Lock off
- Shimming on proton
- Solvent finding and suppression
- Spectra referencing
- On-the-fly peak tracking
- On-the-fly fitting
- Real-time kinetic profiles



Fig. 2 Laboratory setup. Top: InsightMR flow unit, spectrometer, pump, vessel and bath. Bottom: Simultaneous online NMR and in-situ IR monitoring.

### InsightMR Flow Tube Features at a Glance

A custom designed flow tube enables online reaction monitoring by NMR, in real-time under real laboratory conditions.

- Temperature controlled transfer lines
- Tested to withstand pressures over 10 bar
- Interchangeable glass tube
- Proven robustness - industry tested
- Simultaneous data acquisition using different analytical techniques: NMR, IR, pH, MS...
- Samples closer to the start of the reaction

### Summary

- Combined hardware and software solution for process understanding and optimization.
- Provides answers to key chemical questions: reaction yield, mechanistic insights and reaction kinetics.
- Harness NMR data to make strategic process chemistry decisions, ultimately leading to cost savings.

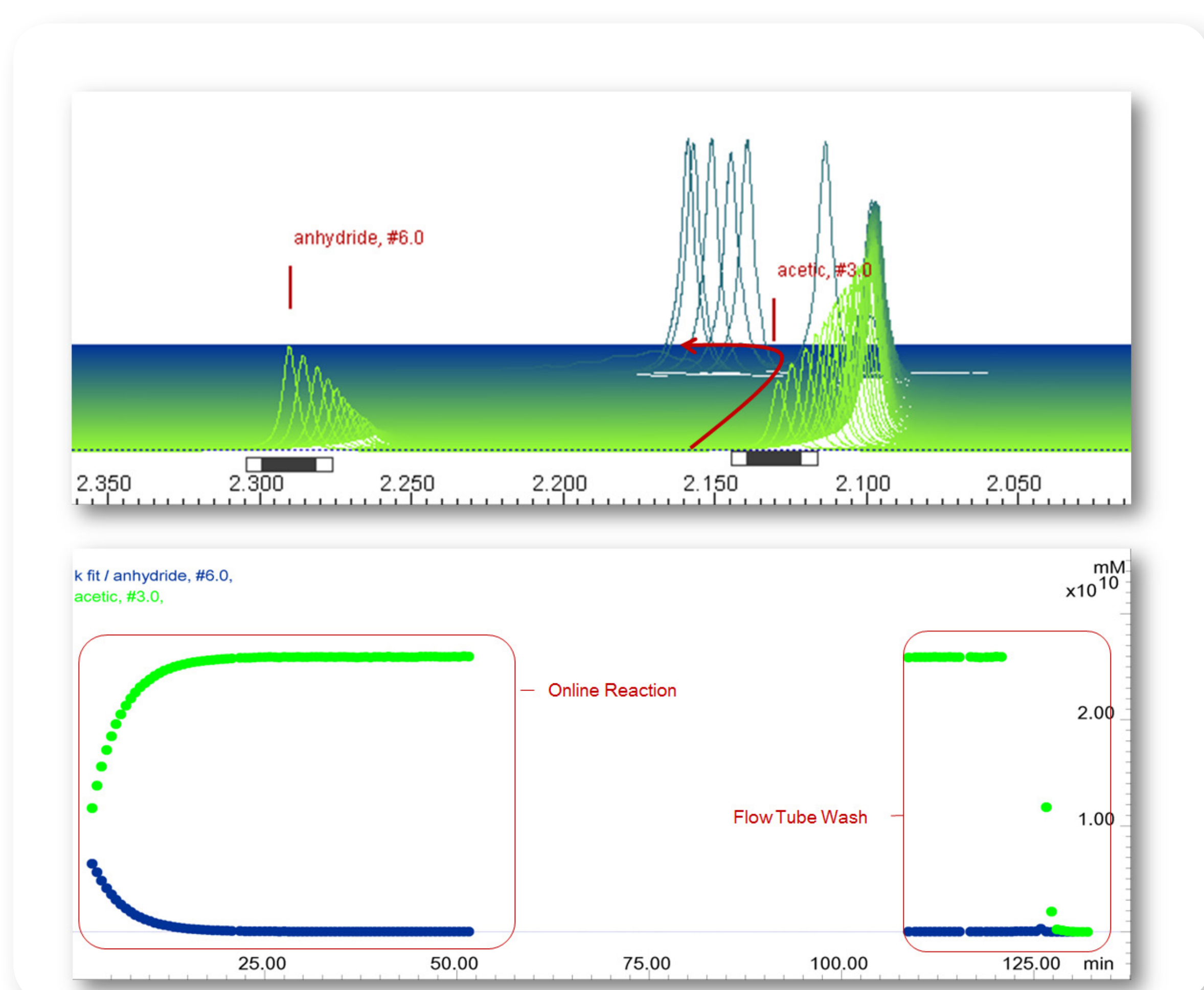


Fig. 1 Acetic anhydride hydrolysis at 35 °C. Waterfall plot (top) showing the automatic tracking of the peaks. Time course data (bottom) during the reaction (left) and while flushing the flow tube (right).

