

Agilent BioStatic Probes

Specifically designed for protein samples

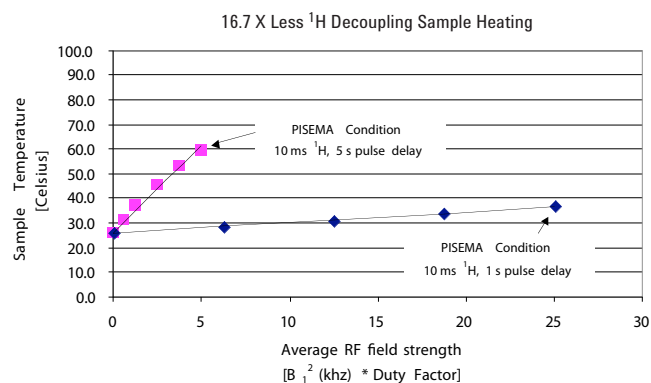
Technical Overview

Benefits

- Ultimate performance for static Bio-Solids experiments
- Ultra-low E-field coil for minimal sample heating
- Increased productivity by acquiring data five times faster

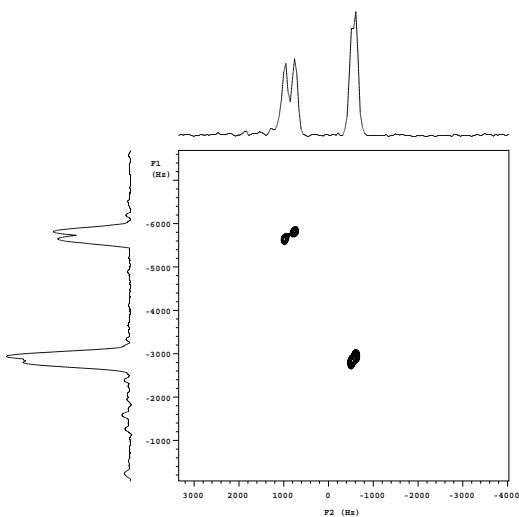
Applications

Sample temperature measured by observation of the ^1H resonance shift of 20 mM TmDOTP/70 mM NaCl/ D_2O . The VT set point was 26 °C. Each experiment is comprised of 8 minutes of equilibration with 2.5, 5, 7.5, or 10 ms of ^1H presat every second for the 600 MHz Triple Resonance HXY BioStatic probe and every 5 s for the standard Wideline probe. The final eight scans include a 90 degree pulse/acquire 20 ms after the presat pulse.



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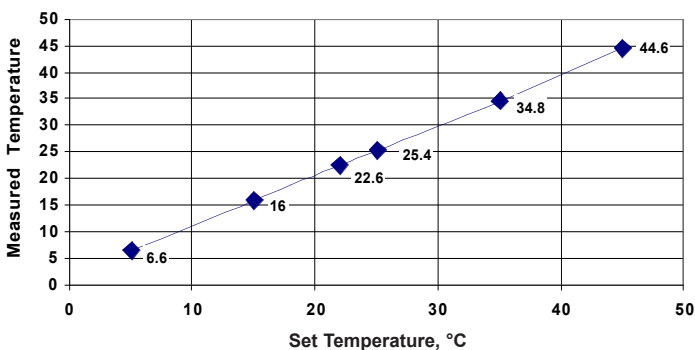
A 600 MHz ^1H PISEMA spectrum of U^{13}C - ^{15}N labeled *N*-Acetyl-L-valine (NAV) single crystal, arbitrary orientation. 96 rows, 2 scans per row, recycle delay 2 s, ^{15}N at 50 kHz for CP and PISEMA, TPPM ^1H decoupling at 50 kHz, sample temperature 5 °C.

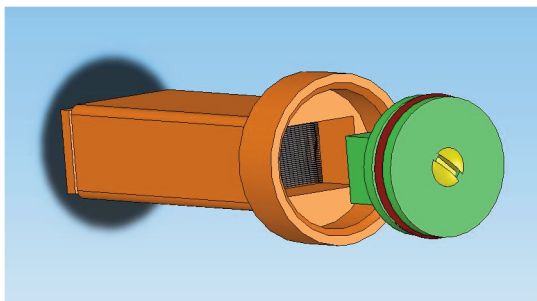


Features

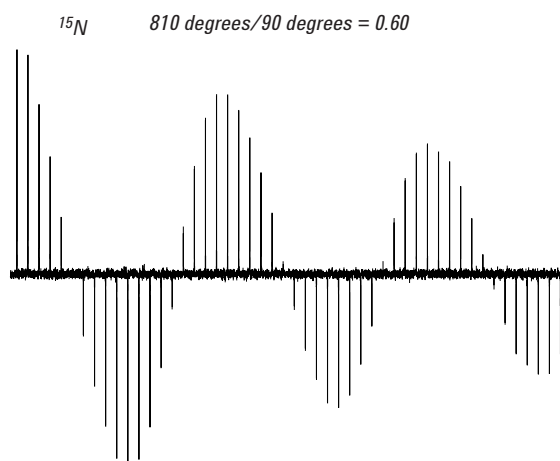
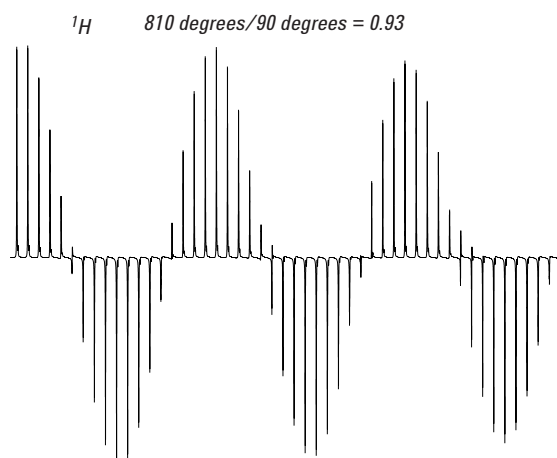
The improved heating performance of the BioStatic coil structure has a dramatic impact on the overall throughput and sample lifetime. The throughput is increased at least a factor of 5 over typical PISEMA experiments, by the simple reduction of pulse delay from 5 s to 1 s. Depending on the T_1 and thermal stability of the sample, further improvements are possible. Even at the 5 times faster acquisition rate, the temperature rise of the sample will be $\sim 1/3$ that experienced in a typical solenoid based PISEMA probe.

Actual vs Set Sample Temperature





Reusable sealed PISEMA sample holder for both glass plate and bicell aligned samples.



Impressive RF homogeneity measured over the active sample volume (9.2 mm × 5.9 mm × 3.9 mm) of a 600 MHz Triple Resonance HXY BioStatic probe.

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