

## DEAR COLLEAGUE:

ENC (April 24-29) and ISMRM (May 7-12) are fast approaching. We are excited to attend these conferences in person. It seems so long since we met face to face.

For those coming to the **ENC**, come by *Suite Magnolia C* Sunday through Wednesday evening from 7:00 to 11:00 PM. (And yes, there will be ice cream, including one non-dairy sorbet.)

For those attending **ISMRM** in London, come by and see us in **Booth D32**.

Our new JEOL 500MHz ECZ NMR console was installed last year and has enabled more NMR progress. There are also exciting new developments in dual-frequency MRI RF coils.

Last year, we published a paper in JMRO, "*New Insights from Broadband Simulations into Small Over-moded Smooth and Corrugated Terahertz Waveguides and Transitions for NMR-DNP*", <https://doi.org/10.1016/j.jmro.2020.100009>.

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Standard VT or Low Temperature Model  
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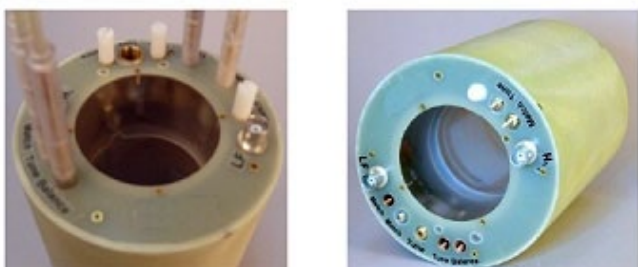
Also, Paul Ellis has recently written a paper "*A Brief Note Describing Artifact Suppression in NMR Experiments*" This paper is on our website and can be found [here](#).

With masks and vaccinations we are ready to travel. Hope to see you soon.

David and Judy Doty

## Dual Frequency MRI Coils $^1\text{H}/\text{X}$ and $^1\text{H}/^{19}\text{F}$

Dual-frequency MR Coils enable MR spectroscopy and imaging techniques, including hyperpolarized nuclei. Detailed full-wave simulations ensure the highest sensitivity, homogeneity, and isolation between channels. B1 field maps and SAR maps included with each coil. Flexible design can be customized for your application and MR system.



65 x 52 mm  $^1\text{H}/\text{X}$  Dual Frequency Coils

- Efficient, easy to tune and match over a broad range of sample loadings.
- Each channel for TxRx.
- For observe / decouple – with both channels simultaneously.
- For interleaved acquisitions - with each channel used sequentially.
- Robust design, mechanical stability.

Examples of recent dual-frequency coils we have supplied (*ID x RF length*):

- 65 x 52 mm,  $^1\text{H}/\text{X}$   $\{^{13}\text{C}, ^{15}\text{N}\}$   
@ 3 T; 1.5 T; 1 T; 0.5 T; and 0.3 T.
- 45 x 36 mm,  $^1\text{H}/\text{X}$   $\{^{31}\text{P}, ^{13}\text{C}\}$ , @ 7 T.
- 38 x 34 mm,  $^1\text{H}/\text{X}$ ,  $\{^{31}\text{P}, ^{13}\text{C}\}$ , @ 9.4 T.
- 25 x 22 mm,  $^1\text{H}/\text{X}$ ,  $\{^{31}\text{P}, ^{13}\text{C}\}$ , @ 9.4 T.
- 25 x 22 mm,  $^1\text{H}/^{13}\text{C}$ , @ **14.1 T**.
- **200 x 160 mm**,  $^1\text{H}/^{23}\text{Na}$ , @ 4.7 T.
- 38 x 55 mm,  $^1\text{H}/^{19}\text{F}$ , @ 7 T.
- Surface Coil 16 mm,  $^1\text{H}/^{15}\text{N}$ , @ 7 T.

## Wide Bore Ultra-Range MAS Probes

- For WB Magnets Only, 300 to 700 MHz
- Broad Tuning Range  
with tuning inserts  $^{31}\text{P}$  to  $^{103}\text{Rh}$
- Double-Tuned  $^1\text{H}/\text{X}$  or Triple-Tuned  $^1\text{H}/\text{X}/\text{Y}$   
Note: the  $^1\text{H}/\text{X}/\text{Y}$  triple-tuned probe can be converted to double-tuned  $^1\text{H}/\text{X}$  by disconnecting the third channel.
- Broad Range of standard VT and XVT Spinner  
Options: 3, 4, 5, or 7 mm
- Low Thermal Gradients,  $< 4\text{ }^\circ\text{C}$  Over Sample length

### WB Ultra-Range Standard Temperature or Low Temperature (LT)



- Broad Temperature Ranges  
Standard VT:  $-140\text{ }^\circ\text{C}$  to  $+170\text{ }^\circ\text{C}$   
Low Temperature:  $-180\text{ }^\circ\text{C}$  to  $+170\text{ }^\circ\text{C}$ , 3 mm only

### WB Ultra-Range High Temperature (HT)



- Broad Temperature Ranges  
Extended VT (XVT):  $-140\text{ }^\circ\text{C}$  to  $+260\text{ }^\circ\text{C}$   
Highest HT:  $-100\text{ }^\circ\text{C}$  to  $+500\text{ }^\circ\text{C}$ , 5 mm only