



## Dear Colleague;

You may have noticed our new brand logo, which represents many new things to come from Doty Scientific. Stay tuned for more updates from us; new products inspired by our dedication to innovation. Meanwhile let us know how we can serve your needs.

We unfortunately missed the recent ISMAR conference due to a family emergency. Laura Holte hopes to see you at the upcoming EUROMAR conference in Greece and we hope to see you at the Alpine Conference on Solid-State NMR in France.

David and Judy Doty

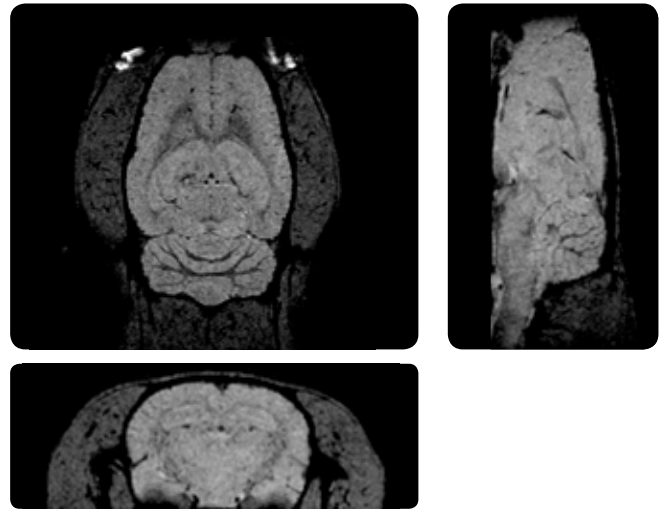
## Meet our Employees

**David McCree, BS/MS**

Mr. McCree joined Doty Scientific in 1996 and now serves as the Secretary/Treasurer and Business Manager.

Mr. McCree received his MS in Physics from the University of South Carolina in 2007.

His physics background is complimented by his experience in chemical and industrial engineering and accounting.



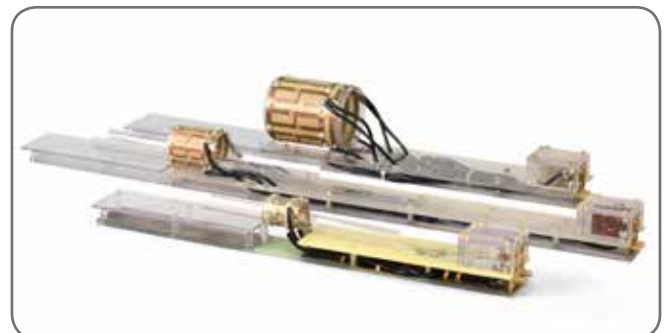
## User Spotlight:

DTI and 3D Gradient Echo Imaging at 9.4 T.

Courtesy of Matthew Budde, Ph.D.  
Medical College of Wisconsin

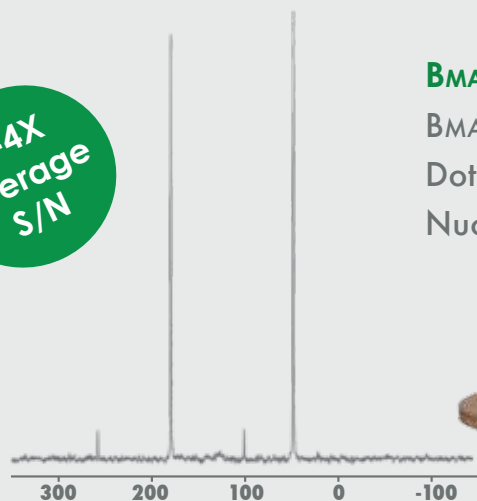
All images acquired with Doty 38x33 mm Litzcage volume coil on a Small Animal Imaging Platform. 3D Gradient Echo, Rat Brain. Resolution 156x156x156 microns. TR/TE = 30/12 ms. Imaging Time 7 minutes.

## Small Animal Platforms and Imaging Coils



Let us improve your MRI results with our open access Small Animal Imaging Platforms, our MRI rf Volume Coil Modules, and a wide variety of Surface Coils.

3-4X  
average  
S/N

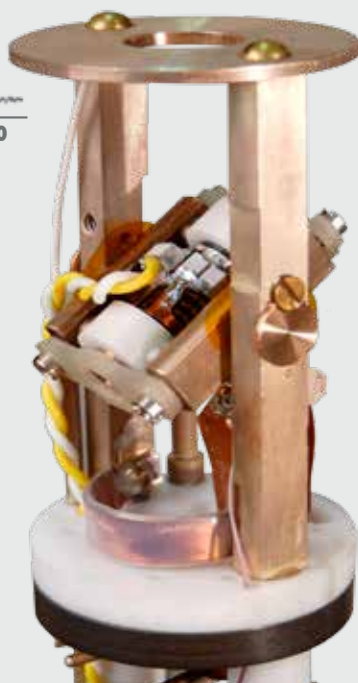


4 mm BMAX CP/MAS,  
Glycine  $^{13}\text{C}$  at 500 MHz  
H/C tuning, S/N=205:1

49.7 mg of  $\alpha$ -glycine,  
4 scans, 97.4 kHz TPPM  
 $^1\text{H}$  decoupling, 46  $\mu\text{L}$  sample,  
ramped-CP at 62 kHz for 7.5 ms,  
10 kHz MAS

## BMAX MAS Probes

BMAX series Magic Angle Spinning (MAS) Probes applies Doty Scientific's over 30 years of experience in the field of Nuclear Magnetic Resonance.



- Highest S/N – by a wide margin
- 4 mm: 205:1 on 50 mg of glycine,  $^{13}\text{C}$ , at 500 MHz
- 3 mm: 103:1 on 18 mg of HMB,  $^{13}\text{C}$ , at 500 MHz
- Highest RF field strengths on X/Y  
Compare: 1.3  $\mu\text{s}$   $\pi/2$  with only 640 W for  $^{13}\text{C}$ , DI-3 at 11.7 T, H/X
- H-F/X/Y broad-band tuning;  
tuning options from  $^{109}\text{Ag}$  to  $^{31}\text{P}$
- Three Year Limited Warranty!

## Important Facts When Purchasing a Solids Probe

1. Do you expect to be doing long acquisitions with high-power decoupling at over 400 MHz on lossy samples? If so, then you want a probe in which the  $^1\text{H}$  field is not generated by a solenoid. The DE coils on Doty BMAX probes work well for these applications.
2. Is proton efficiency or X/Y performance the most important for your experiments? Doty's new BMAX probe is optimized for X/Y performance, while still providing excellent decoupling.
3. How fast do you need to spin? The DI-3 spins 28 kHz, compared to 18 kHz for the DI-4, but the DI-4 may give you nearly twice the S/N.
4. Will you need two channels (H/X) or three (H/X/Y)?
5. What nuclides are of interest on the X/Y channels?
6. What temperature range do you need? (Doty sample-temperature options range from  $-170^\circ\text{C}$  to the Doty High Temp probe at  $+700^\circ\text{C}$ .)

## Did You Know?

- You can perform Extended VT MAS/NMR in a narrow bore magnet. Choose from three VT ranges with Doty's 3, 4, or 5 mm spinners:  
Standard NB VT range:  $-80^\circ\text{C}$  to  $+120^\circ\text{C}$   
Extended NB VT range:  $-150^\circ\text{C}$  to  $+150^\circ\text{C}$   
Low Extended NB VT range:  $-170^\circ\text{C}$  to  $+150^\circ\text{C}$
- State-of-the-art Doty probes have  $\text{Si}_3\text{N}_4$  and non-magnetic alloy construction. This provides for the lowest background signals. Minimal  $^{13}\text{C}$ ,  $^1\text{H}$ ,  $^{19}\text{F}$ ,  $^{27}\text{Al}$ ,  $^{29}\text{Si}$ ,  $^{11}\text{B}$ ,  $^{15}\text{N}$ ,  $^{23}\text{Na}$ ,  $^2\text{H}$ ,  $^{17}\text{O}$ , ...