

Supporting Information

Local Structure of the B-site in BNT-xBT Investigated by $^{47,49}\text{Ti}$ NMR: Effect of Barium Content

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ESI1. ECHODEPTH pulse sequence

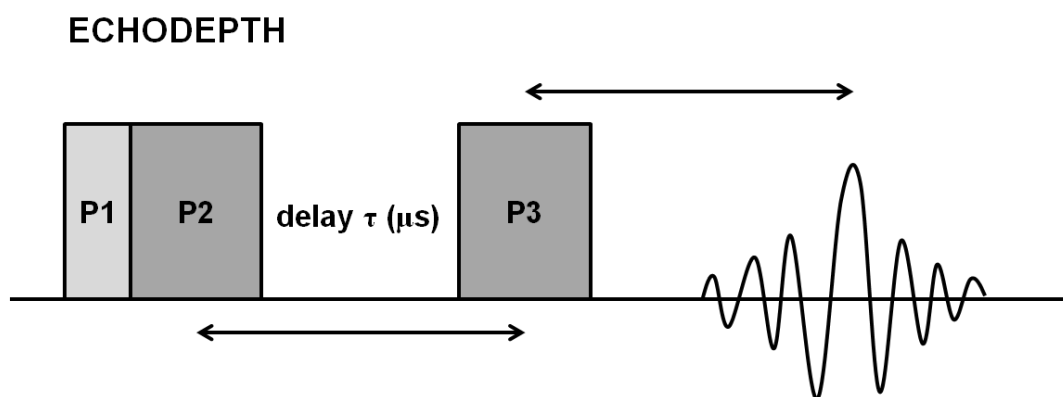


Figure 1ESI: ECHODEPTH sequence. One $\pi/2$ pulse (P1) is followed by two π pulses (P2 and P3). A delay is added between P2 and P3 in order to generate an echo (rotorsynchronized for MAS experiments). Phase cycling employed follows below^[1].

Phase cycling:

```
pulse_1 = 0,180,270, 90,180, 0, 90,270, 0,180,270, 90,180, 0, 90,270;  
pulse_2 = 0,180,270, 90,270, 90,180, 0,180, 0, 90,270, 90,270, 0,180;  
pulse_3 = 0,270, 90, 0,270, 0, 0, 90, 0,270, 90, 0,270, 0, 0, 90;  
receiver = 0, 0, 3, 3, 2, 2, 1, 1, 0, 0, 3, 3, 2, 2, 1, 1;
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ESI2: Effect of MAS in ^{47}Ti NMR spectra.

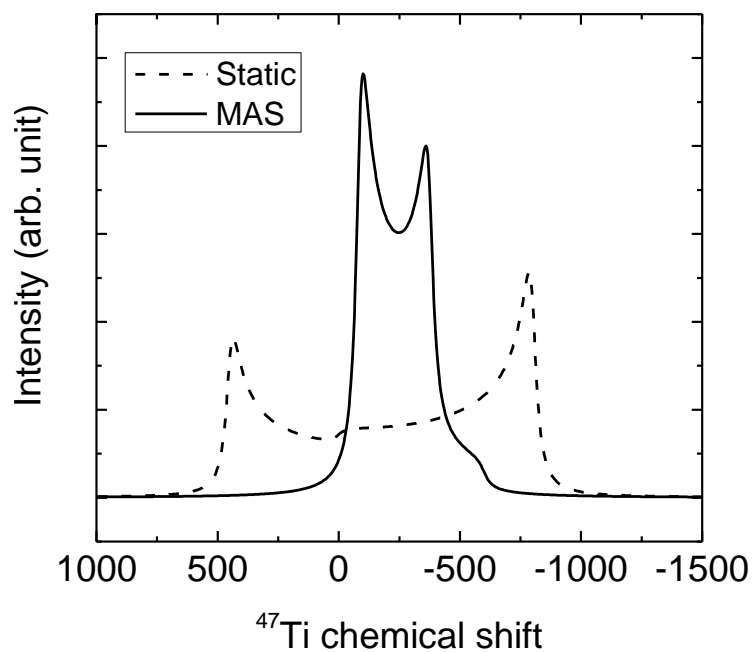


Figure 2ESI: comparison between simulated ^{47}Ti NMR spectra under MAS (solid line) and static conditions (dashed line). The fwhm of the signal under MAS is 3.9 times narrower than the static line. Simulation performed with an arbitrary C_Q value.

Bibliography

- [1] D. G. Cory, W. M. Ritchey, *Journal of Magnetic Resonance* (1969) **1988**, *80*, 128.

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