Journal of Magnetic Resonance 205 (2010) 180

Contents lists available at ScienceDirect

Journal of Magnetic Resonance

journal homepage: www.elsevier.com/locate/jmr

Corrigendum

Corrigendum to "Proton NMR Studies of the $NaAlH_4$ Structure" [J. Magn. Reson. 200 (2009) 280–284]

L.E. Valiente-Banuet [a], G. Majer [a,*], K. Müller [b,c,d,**]

[a] Max-Planck-Institut für Metallforschung, Heisenbergstr. 3, D-70569 Stuttgart, Germany
[b] Institut für Physikalische Chemie, Universität Stuttgart, Pfaffenwaldring 55, D-70569, Stuttgart, Germany
[c] Dipartimento di Ingegneria dei Materiali e Tecnologie Industriali, Universitá degli Studi di Trento, via Mesiano 77, I-38100, Trento, Italy
[d] INSTM, UdR Trento, via Mesiano 77, 1-38100, Trento, Italy

After publication of the manuscript, we realized an error in the description of the data analysis. That is, the effective evolution time of the spin system during the magic echo sandwich pulse is only 2τ, and not 4τ as stated in the original publication.

Thereupon, the original experimental data have been reinspected which showed an inconsistency. At present, it is believed that this is caused by additional paramagnetic effects due to the admixed Ti catalyst in the $NaAlH_4$ sample of the original work.

For this reason, we have redone the same experiments with a new, freshly prepared sample which was only ball-milled, and which did not contain any catalyst. The obtained experimental data points for the FID, magic echo and magic Hahn echo decays are shown in Fig. 1. From the given regression curves second moments $M_{2,\text{total}} = (125.0 \pm 3.0)\cdot 10^8\ \text{Hz}^2$, $M_{2,\text{homo}} = (66.5 \pm 8.0)\cdot 10^8\ \text{Hz}^2$ and $M_{2,\text{hetero}} = (58.5 \pm 5.0)\cdot 10^8\ \text{Hz}^2$ were derived. These values are consistent with those calculated for the 0° configuration, obtained by neutron scattering on $NaAlD_4$ [1,2].

Further work on the aforementioned paramagnetic effects is under way. The results will be published elsewhere [3].

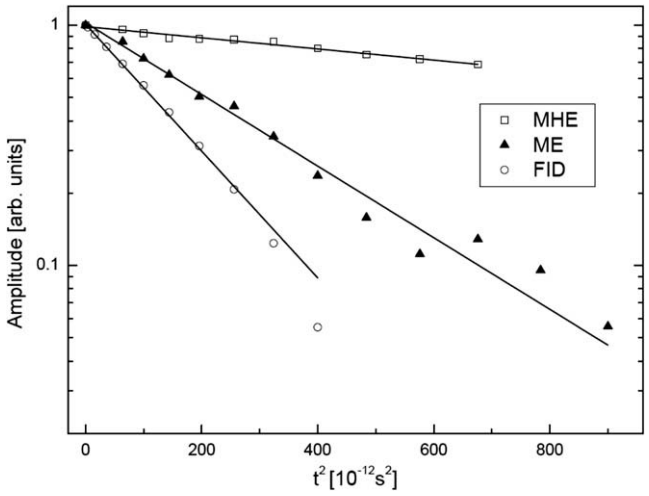

Fig. 1. Time evolution of NMR signals plotted as a function of t^2. The circles represent the time development of the second half of the magic Hahn echo, which decays due to both homo- and heteronuclear dipolar interactions. The triangles and squares show the decay of the amplitude of the magic echo (ME) and the magic Hahn echo (MHE), respectively. Here, the time t denotes 2 times τ, which is the effective time for spin evolution under dipolar interaction. The fitting curves were used to determine $M_{2,\text{homo}}$ and $M_{2,\text{hetero}}$.

Acknowledgments

The authors acknowledge the support by M. Abele during the experimental work. Valuable comments by Dr. M. Conradi are also highly appreciated.

References

[1] B.C. Hauback, H.W. Brinks, C.M. Jensen, K. Murphy, A.J. Maeland, J. Alloys Compd. 358 (2003) 142.
[2] V. Ozolins, E.H. Majzoub, T.J. Udovic, J. Alloys Compd. 375 (2004) 1.
[3] M. Abele, G. Majer, K. Müller, in preparation.

DOI of original article: 10.1016/j.jmr.2009.07.011.
* Corresponding author. Fax: +49 711 689 3612.
** Corresponding author at: Institut für Physikalische Chemie, Universität Stuttgart, Pfaffenwaldring 55, D-70569, Stuttgart, Germany. Fax: +39 0461 882439.
E-mail addresses: majer@mf.mpg.de (G. Majer), k.mueller@ipc.uni-stuttgart.de, klaus.mueller@ing.unitn.it (K. Müller).

1090-7807/$ - see front matter
doi:10.1016/j.jmr.2010.03.017