

# Publication List – Franziska Hammerath

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## Publications - Refereed Journals

1. S.-H. Baek, L. M. Reinold, M. Graczyk-Zajac, R. Riedel, **F. Hammerath**, B. Büchner, and H.-J. Grafe, *Lithium dynamics in carbon-rich polymer-derived SiCN ceramics probed by nuclear magnetic resonance*, [Journal of Power Sources](#), **253**, 342 (2014).
2. **F. Hammerath**, U. Gräfe, T. Kühne, H. Kühne, P. L. Kuhns, A. P. Reyes, G. Lang, S. Wurmehl, B. Büchner, P. Carretta, and H.-J. Grafe, *Progressive slowing down of spin fluctuations in underdoped LaFeAsO<sub>1-x</sub>F<sub>x</sub>*, [Phys. Rev. B](#) **88**, 104503 (2013).
3. S.-H. Baek, H.-J. Grafe, **F. Hammerath**, M. Fuchs, C. Rudisch, L. Harnagea, S. Aswartham, S. Wurmehl, J. van den Brink, and B. Büchner, *<sup>75</sup>As NMR-NQR study in superconducting LiFeAs*, [Europ. J. Phys. B](#). **85**, 159 (2012).
4. V. Grinenko, K. Kikoin, S.-L. Drechsler, G. Fuchs, K. Nenkov, S. Wurmehl, **F. Hammerath**, G. Lang, H.-J. Grafe, B. Holzapfel, J. van den Brink, B. Büchner, and L. Schultz, *As-vacancies, local moments, and Pauli-limiting in LaFeAs<sub>1-δ</sub>O<sub>0.9</sub>F<sub>0.1</sub> superconductors*, [Phys. Rev. B](#) **84**, 134516 (2011).
5. **F. Hammerath**, S. Nishimoto, H.-J. Grafe, A.U.B. Wolter, V. Kataev, P. Ribeiro, C. Hess, S.-L. Drechsler, and B. Büchner, *Spin Gap in the Zigzag Spin-1/2 Chain Cuprate Sr<sub>0.9</sub>Ca<sub>0.1</sub>CuO<sub>2</sub>*, [Phys. Rev. Lett.](#) **107**, 017203 (2011).
6. **F. Hammerath**, S.-L. Drechsler, H.-J. Grafe, G. Lang, G. Fuchs, G. Behr, I. Eremin, M. M. Korshunov, and B. Büchner, *Unusual disorder effects in superconducting LaFeAs<sub>1-δ</sub>O<sub>0.9</sub>F<sub>0.1</sub> as revealed by <sup>75</sup>As NMR spectroscopy*, [Phys. Rev. B](#) **81**, 140504(R) (2010).
7. G. Lang, H.-J. Grafe, D. Paar, **F. Hammerath**, K. Manthey, G. Behr, J. Werner, and B. Büchner, *Nanoscale Electronic Order in Iron Pnictides*, [Phys. Rev. Lett.](#) **104**, 097001 (2010).
8. R. Klingeler, N. Leps, I. Hellmann, A. Popa, U. Stockert, C. Hess, V. Kataev, H.-J. Grafe, **F. Hammerath**, G. Lang, S. Wurmehl, G. Behr, L. Harnagea, S. Singh, and B. Büchner, *Local antiferromagnetic correlations in the iron pnictide superconductors LaFeAsO<sub>1-x</sub>F<sub>x</sub> and Ca(Fe<sub>1-x</sub>Co<sub>x</sub>)<sub>2</sub>As<sub>2</sub> as seen via normal-state susceptibility*, [Phys. Rev B](#) **81**, 024506 (2010).

9. H.-J. Grafe, G. Lang, **F. Hammerath**, D. Paar, K. Manthey, K. Koch, H. Rosner, N. J. Curro, G. Behr, J. Werner, N. Leps, R. Klingeler, H.-H. Klauss, F. J. Litterst, and B. Büchner, *Electronic properties of  $LaO_{1-x}F_xFeAs$  in the normal state probed by NMR/NQR*, [New J. Phys. \*\*11\*\*, 035002 \(2009\)](#).
10. H.-J. Grafe, **F. Hammerath**, A. Vyalikh, G. Urbanik, V. Kataev, Th. Wolf, G. Khaliullin, and B. Büchner, *Contrasting spin dynamics in Zn- and Ni-doped  $NdBa_2Cu_3O_{6+y}$  single crystals from Cu nuclear quadrupole resonance: Evidence for correlations between antiferromagnetism and pseudogap effects*, [Phys. Rev. B \*\*77\*\*, 014522 \(2008\)](#).

### Publications - Conference Proceedings

11. G. Lang, H.-J. Grafe, **F. Hammerath**, K. Manthey, D. Paar, G. Behr, J. Werner, J. Hamann-Borrero, and B. Büchner, *Probing of the charge distribution in iron pnictides*, [Physica C \*\*470\*\*, S454 - S455 \(2010\)](#).
12. G. Fuchs, S.-L. Drechsler, N. Kozlova, M. Bartkowiak, G. Behr, K. Nenkov, H.-H. Klauss, J. Freudenberger, M. Knupfer, **F. Hammerath**, G. Lang, H.-J. Grafe, B. Büchner, and L. Schultz, *Evidence for Pauli-limiting behaviour at high fields and enhanced upper critical fields near  $T_c$  in several disordered FeAs based Superconductors*, [Physica C \*\*470\*\*, S288 - S290 \(2010\)](#).
13. D. Paar, H.-J. Grafe, G. Lang, **F. Hammerath**, K. Manthey, G. Behr, J. Werner, and B. Büchner, *NMR study of the electronic properties of superconducting  $LaO_{0.9}F_{0.1}FeAs$* , [Physica C \*\*470\*\*, S468 - S469 \(2010\)](#).
14. H.-J. Grafe, **F. Hammerath**, Th. Wolf, and B. Büchner, *Cu nuclear quadrupole resonance study of  $NdBa_2(Cu,Zn,Ni)_3O_{7-\delta}$* , [Physica C \*\*460 - 462\*\*, 896-897 \(2007\)](#).

### Publications - Books

1. **F. Hammerath**, *Magnetism and Superconductivity in Iron-based Superconductors as Probed by Nuclear Magnetic Resonance*, complete reprint of the Ph.D. thesis, [Springer, Wiesbaden \(2012\)](#).

## Invited Talks

1. *The poisoning effect of Mn in  $\text{LaFe}_{1-x}\text{Mn}_x\text{AsO}_{0.89}\text{F}_{0.11}$  – a combined  $\mu\text{SR}$  and NMR Study*, Invited Talk for the IFF Department Seminar, IFW Dresden, 30.09. 2013, Dresden, Germany.
2. *Impurity Effects in  $S=1/2$  Heisenberg Spin Chains as Probed by  $^{63}\text{Cu}$  Nuclear Magnetic Resonance*, Invited Talk at the LOTHERM workshop "Advances in Quantum Magnets - Dynamics", September 2013, Kolymbari, Crete.
3. *Unusual NMR Line Broadening and Spin Gap in the Zigzag  $S=1/2$  Spin Chain Compound  $\text{Sr}_{0.9}\text{Ca}_{0.1}\text{CuO}_2$* , Invited Talk at the Department of Physics of the University of Zagreb, November 2011, Zagreb, Croatia.

## Conference Contributions - Talks

3. *Magnetic and Superconducting Phases in RE-doped Chrysenes*, spring meeting of the condensed matter division of the DPG (German Physical Society), March 2013, Regensburg, Germany.
4. *NMR investigations of spin fluctuations in underdoped  $\text{LaO}_{1-x}\text{F}_x\text{FeAs}$* , spring meeting of the condensed matter division of the DPG (German Physical Society), March 2012, Berlin, Germany.
5. *Spin Gap in the  $S=1/2$  Spin Chain Compound  $\text{Sr}_{0.9}\text{Ca}_{0.1}\text{CuO}_2$* , 2<sup>nd</sup> International Workshop "Recent advances in broad-band solid-state NMR of correlated electronic systems", September 2011, Trogir, Croatia.
6. *Evidence for the opening of a spin gap in the Ca-doped  $\text{SrCuO}_2$  probed by NMR*, spring meeting of the condensed matter division of the DPG (German Physical Society), March 2011, Dresden, Germany.
7. *Unusual disorder effects in  $\text{LaO}_{0.9}\text{F}_{0.1}\text{FeAs}_{1-\delta}$  as revealed by NMR spectroscopy*, spring meeting of the condensed matter division of the DPG (German Physical Society), March 2010, Regensburg, Germany.
8. *Electronic properties of iron pnictides in the normal state as seen by NMR*, spring meeting of the condensed matter division of the DPG (German Physical Society), March 2009, Dresden, Germany.

### Conference Contributions - Poster

1. *Magnetic and Superconducting Phases in RE-doped Chrysene*, Magnet 2013: 3<sup>rd</sup> National Magnetism Conference of the Italian Magnetism Society (AIMagn), February 2013, Naples, Italy.
2. *Nuclear Magnetic Resonance Studies on the New Iron Arenide Superconductors*, 1<sup>st</sup> International Workshop "Recent advances in broad-band solid-state NMR of correlated electronic systems", September 2010, Trogir, Croatia.
3. *Nuclear Magnetic Resonance Studies on the New Iron Arenide Superconductors*, 9<sup>th</sup> PSI Summer School on Condensed Matter Research: "Magnetic Phenomena", August 2010, Zouz, Switzerland.
4. *Evidence for the opening of a spin gap in the Ca-doped  $S=1/2$  spin chain compound  $SrCuO_2$  probed by NMR*, Korrelationstage MPI-PKS, March 2009, Dresden, Germany.
5. *Cu NMR studies of Ca doped  $SrCuO_2$  spin chain compound*, spring meeting of the condensed matter division of the DPG (German Physical Society), March 2008, Berlin, Germany.
6. *Cu NQR wipeout effect vs charge pseudogap in Zn/Ni doped  $NdBa_2Cu_3O_{6+y}$* , I2CAM Cargese Summer School: "50th anniversary of BCS: From BCS to Exotic Superconductivity", July 2007, Cargese, France.