Program for the 9th ICMRM in Aachen

Day	Time	Session (*Chair*)	Lecture
Mo	8:30 – 9:20 9:25 – 10:15	Educational Session I (*Blümich*)	-B. Blümich, RWTH Aachen University, *Introduction to NMR and imaging* - E. Fukushima, ABQMR Inc., Albuquerque, H*ardware Nuts and Bolts*
Mo	10:15 – 10:45	Coffee Break	
Mo	10:45 – 11:35 11:40 – 12:30	Educational Session II (*Blümich*)	-P. T. Callaghan, Victoria University of Wellington, *Diffusion and transport in NMR* - L. Xiao, China University of Petroleum, Beijing, *Some Important Issues for NMR Logging and Applications*
Mo	12:30 – 14:00	Lunch Break	
Mo	14:00 – 14:15 14:15 – 14:45 14:45 – 15:15 15:15 – 15:40 15:40 – 16:00	Opening Cultural Heritage (*Perlo*)	-B. Blümich, P. Blümler: *Welcome* -E. Del Federico, S. Centeno, A. Yamazaki-Kleps, A. Jerschow, Pratt Institute, Brooklyn, *Unilateral NMR studies of Lead White Pigment with protinaceus binders* -D. Capitani, N. Proietti, S. Cozzolino, A. Laura Segre, CNR Rome, *Unilateral NMR for Monitoring Cultural Heritage* -D. Mietchen, B. Manz and F. Volke, Fraunhofer-Institute for Biomedical Engineering, St. Ingbert, *Three-dimensional MR Microimaging of fossils across taxa.* -M. Baias, J. Perlo, F. Casanova, K. Münnemann, F. Rühli, B. Blümich, Universität Zürich, *Investigation of ancient mummies and bones by NMR and CT*
Mo	16:00 – 16:30	Coffee Break	

Mo	16:30 – 17:00	Methods (*Song*)	-P. Galvosas, M. Gratz, Y. Qiao, M. Schönhoff, and P. T. Callaghan, University of Leipzig *Experimental aspects of NMR diffusion excange and diffusion-relaxation correlation spectroscopy*
	17:00 – 17:20		-J. Perlo, F. Casanova, and B. Blümich, RWTH Aachen University, ***Ex situ** NMR in highly homogeneous fields: ^{1}H spectroscopy*
	17:20 – 17:35		-J. T. Schneider, C. Faber, University of Würzburg, *CRAZED Imaging with RARE-Acquisition at High Fields*
	17:35 – 17:55		- L.-S. Bouchard, V. Demas, J. Franck, J. L. Paulsen, N. Graziani, B. Blümich, and A. Pines, UC Berkeley, *Geometry of Low-Field NMR*
	17:55 – 18:15		-X. Ren, H. J. Cho, E. E. Sigmund, Yi-Qiao Song, Schlumberger Cambridge, *A rapid NMR method for measurements of a 3D flow velocity vector and a 3D diffusion tensor*
	18:15 – 18:30		-C. H. Arns, K. E. Washburn, M. Hunter, P. T. Callaghan, Australian National University, Canberra, *Xray-CT enhanced interpretation of T_2-D-DG_0^2 NMR correlation experiments*
Mo	18:30 – 21:00	Welcome Reception (*Bruker*)	
Tu	8:30 - 9:00	Hardware (*Fukushima*)	-P. J. Prado, L. Doraisamy, A. Bussandri, GE Security, San Diego, *Compact MR Sensors: Who Pays for the Development?*
	9:00 - 9:20		-H. Soltner, P. Blümler, FZ Jülich,' *The NMR-Cuff: Force free, hinged magnet arrangements for portable MRI and EPR*
	9:20 - 9:40		-P. J. McDonald, P. S. Aptaker, University of Surrey
	9:40 – 10:00		-S. Utsuzawa, E. Fukushima, New Mexico Resonance, Albuquerque, *Unilateral NMR apparatus with homogeneous B_0 field*
	10:00 – 10:15		-R. Dykstra, T. Southern, M. Van Der Werff, Massey University, Palmerston North, *A Low Power High Performance Digital Transceiver for Mobile NMR*
Tu	10:15 – 10:45	Coffee Break	

Tu	10:45 – 11:15 11:15 – 11:35 11:35 – 11:55 11:55 – 12:15 12:15 – 12:35	Small coils (*Stapf*)	-L. Ciobanu, Pfizer Inc, Ann Arbor, *Small scale NMR: Spectroscopic Studies and High Resolution Imaging Applications* -A. McDowell, ABQMR Inc., Albuquerque, *Toward a portable frequency-domain NMR spectrometer* -E. Harel, C. Hilty, E. E. McDonnell, V.-V. Telkki, K. Koen, J. Granwehr, S. Garcia, K. L. Pierce, S. Han, A. Pines, UC Berkeley, *Beating the NMR time scale by remote detection flow imaging* -J. H. Walton, A. G. Goloshevsky, Y. J. Choi, A. Roa, J. S. de Ropp, S. D. Collins, M. J. McCarthy, UC Davis, *A Small Planar Gradient Set for MRI Rheometry* -V. Demas, J. Herberg, V. Malba, A. Bernhardt, L. Evans, R. Maxwell, J. Franck, A. Pines, J. Reimer, Lawrence Livermore Laboratory, *Low Cost Ex Situ NMR with microcoils*
Tu	12:35 – 14:00	Lunch Break	-Lunch Meeting of the Ampere Division Committee
Tu	14:00 – 16:00	Poster Session I (*Van Dusschoten*)	
Tu	16:00 – 16:30	Coffee Break	
Tu	16:30 – 17:00 17:00 – 17:30 17:30 – 17:50 17:50 – 18:10 18:10 – 18:30	Porous media (*Callaghan*)	-Y.-Q. Song, L. Zielinski, Schlumberger-Doll Research, Cambridge, *Two-dimensional NMR of diffusion systems* - R. Kimmich, B. Buhai, Y. Li, Universität Ulm, *NMR mapping of ionic currents and electro-osmotic flow in microsystem channel networks* -R. Valiullin, M. Dvoyashkin, A. Khokhlov, J. Kärger, University of Leipzig, *Fluid distribution in mesoporous materials* -Z. Zhang, J. Martin, H. Wang, K. Promislow, B. J. Balcom, UNB Fredericton, *Magnetic Resonance Imaging of Water Content across the Nafion Membrane in Operational PEM Fuel Cells* -H. Adriaensen, M. Bencsik, S. Brewer, G. Mc Hale, Trent University, Nottingham, *Quantitative monitoring of liquid ingress in heterogeneous layered materials using a Mobile Universal Surface Explorer (MOUSE®)*

We	8:30 - 9:00 9:00 - 9:25 9:25 - 9:45 9:45 – 10:00 10:00 – 10:15	Materials and function (*Seymour*)	-J. A. Reimer, UC Berkeley, *NMR Assessment of Polymer Mechanical Properties: Portable NMR and elastomeric moduli?* - S. L. Codd, Montana State University, Bozeman, *Biopolymer and Water Dynamics in Microbial Biofilm Extracellular Polymeric Substance* - J. Leisen, H. W. Beckham, Georgia Institute of Technology, Atlanta, *Fluid Distribution and Transport in Engineered Fibrous Substrates* - M. L. Johns, J. D. Griffith, C. J. Davies, A. J. Sederman, University of Cambridge, *MR Studies of Industrial Micelle Solutions* - J. M. Bray, C. Petrone, M. Filiaggi, S. D. Beyea, Dalhousie University, Halifax, *MR Microscopy of Resorbable Polymeric Bioceramics*
We	10:15 – 10:45	Coffee Break	
We	10:45 – 11:05 11:05 – 11:30 11:30 – 11:50 11:50 – 12:10 12:10 – 12:30	Vendor Presentations (*Codd*)	-D. Gross, V. Lehmann, T. Oerther, K. Zick, Bruker Biospin GmbH, Germany, New Hardware and Software Development and Optimization for NMR Microscopy -M. Fey, D. Schmidig, S. Denoth, C. Massin, F. Vincent, M. Schenkel, M. Weigner, *NMR Microscopywith IsotropicResolution below 10 µm Using Dedicated Hardware and Optimized Methods* -A. Coy, R. Dykstra, C. D. Eccels, M. E. Halse, M. W. Hunter, B. Parkinson, P. T. Callaghan, Magritek, New Zealand Curioisties from Earth's field and Low field NMR -J. Kolz, J. Perlo, F. Casanova, B. Blümich, ACT, Germany, *The Profile NMR MOUSE: Methods and Applications* -A. Weisser, Rapid Biomedical GmbH, Germany, *Customized Coils*
We	12:30 – 14:00	Lunch Break	
We	14:00 – 16:00	Poster Session II (*Van Dusschoten*)	
We	16:00 – 16:30	Coffee Break	

We	16:30 – 16:50	Young investigators (*Blümler*)	-N. Homan, E. Gerkema, F. J. Vergeldt, H. Van As, Wageningen NMR Centre, *MRI of axial and radial hydraulic conductivity in (woody) plants*
	16:50 – 17:10		-J. R. Brown, J. D. Seymour, S. L. Codd, E. O. Fridjonsson, G. R. Cokelet, M. Nydén, Montana State University Bozeman, *NMR measurement of irreversibility and particle migration in dilute sheared Brownian suspensions*
	17:10 – 17:30		-M. W. Hunter, A. N. Jackson, P. T. Callaghan, Victoria University of Wellington, *Measurement and simulation of the non-local dispersion tensor in porous media*
	17:30 – 17:50		-P. P. Zänker, J. Schmidt, R. H. Acosta, L. Agulles-Pedrós, J. Schmiedeskamp, H. W. Spiess, Max Planck Institute for Polymer Research, Mainz, *Spin echoes and intermolecular double-quantum coherences in gases in the fast diffusion regime*
	17:50 – 18:10		-M. E. Halse, P. T. Callaghan, Victoria University of Wellington, *Novel Approaches to High-Resolution NMR Spectroscopy in Low and Ultra-low Fields*
	18:10 – 18:30		-S. Handa, K. Kose, T. Haishi, University of Tsukuba, *Development of compact MRI systems for specific diseases*
We	18:30 - 19:00	Ampere Division	-Meeting of the Ampere Division: Next Meetings, Elections
Th	8:30 - 8:55	Biomedicine (*Jakob/Haase)*	-K. Kose, T. Haishi, S. Handa, University of Tsukuba, *Compact MRI applications*
	8:55 - 9:15		-L. L. Wald, G. C. Wiggins, Y. A. N. Other, MGH, Boston, *Highly Parallel Array Detection for MRI*
	9:15 - 9:35		- -T. Niendorf, RWTH Aachen University, *Merits and Challenges of Clinical Cardiovascular MRI at 3.0 Tesla*
	9:35 – 9:55		- -O. Speck, Otto-von-Guericke-University, Magdeburg, *Highfield MRI: Human Applications at 7T*
	9:55 – 10:15		-P. Jakob, University of Würzburg, *Molecular and cellular MRI*
Th	10:15 – 10:45	Coffee Break	

Th	10:45 – 11:10	Structure and function relations in food and plants	-J. van Duynhoven, W. Weglarz, C. Windt, P. R. Cabrer, A. Mohoric, H. van As, Unilever, Vlaardingen, *Non-invasive Assessment of Moisture migration in Food Products by MRI*
	11:10 – 11:35	(*Van As*)	- M. D. Hürlimann, Schlumberger, Schlumberger – Doll Research, Cambridge, *Encoding information in the CPMG echo shape*
	11:35 – 12:00		- D. van Dusschoten, F. J.Vergeldt, H. Van As, FZ Jülich, *Fitting Intrinsic Parameters to diffusion-relaxation data*
	12:00 – 12:15		-R. Milczarek, M. McCarthy, UC Davis, *Seed Detection in Mandarin Oranges Using Multivariate Analysis of MR Image Data*
	12:15 – 12:30		-G. Melkus, L. Borisjuk, H. Rolletschek, M. Flentje, P. M. Jakob, University of Würzburg, *Localized ^{1}H NMR and ^{1}H Spectroscopic Imaging on wild type and mutant pea*
Th	12:30 – 14:00	Lunch Break	
Th	14:00 – 14:30	Chemical engineering (*Casanova*)	-L. F. Gladden, L. D. Anadon, C. P. Dunckley, D. J. Holland, Z. Huang, M. D. Mantle, C. Müller, T. Nguyen, A. J. Sederman, University of Cambridge, *Developments in Imaging Multi-Phase Reactors*
	14:30 – 14:50		- S. Stapf, TU Ilmenau, *MRI in Chemical Engineering – facts and promises*
	14:50 – 15:10		- M.M. Britton, University of Birmingam, *Probing and Controlling Chemical Waves Using Magnetic Resonance Imaging*
	15:10 – 15:30		-J. Stepišnik, S. Lasič, A. Mohorič, I. Serša, G. Planinšič, University of Ljubljana, *Granular micro-dynamics by CPMG spin echo*
	15:30 – 15:45		-I. Mastikhin, B. Newling, University of New Brunswick, *Dynamics of gas and liquid during cavitation*
	15:45 – 16:00		-K. V. Kovtunov, M. S. Anwar, S. R. Burt, I. V. Koptyug, L.-S. Bouchard, R. Z. Sagdeev, A. Pines, International Tomography Center, Novosibirsk, *Observation of parahydrogen induced polarization in heterogeneous hydrogenation reaction and its MRT application*
Th	16:00 – 19:00	Activities	-Excursion
	19:00 – 21:30	(*Fattah, Van Dusschoten*)	-Conference Dinner Poster Prizes (*Reimer*) Art Image Prizes (*Xia*)

Fr	8:30 - 9:00 9:00 - 9:30 9:30 - 9:55 9:55 – 10:15	Polarization Enhancement (Demas)	-S. Han, E. McCarney, B. Armstrong, M. Lingwood, UC Santa Barbara, *Contrast and Sensitivity Enhanced Magnetic Resonance by Dynamic Nuclear Polarization* - R. W. Mair, L. L. Tsai, R. Scheidegger, C.-H. Li, M. J. Barlow, M. S. Rosen, S. Patz, R. L. Walsworth, Harvard University, Cambridge, *Improving ^{3}He polarization for human lung imaging in subjects in horizontal and vertical orientations, 25 min* - I. V. Koptyug, A. A. Lysova, K. V. Kovtunov, V. V. Zhivonitko, and A. V. Khomichev, International Tomography Center, Novosibirsk, *Bridging the gap between NMR Imaging and Catalysis* -L. A. Pedrós, R. H. Acosta, P. Blümler, J. Schmiedeskamp, H. W. Spiess, Max-Planck Institute Mainz, *Study of diffusion coefficient of hyperpolarized gases and their use as a contrast agent in MRI*
Fr	10:15 – 10:45	Coffee Break	
Fr	10:45 – 11:15 11:15 – 11:35 11:35 – 11:55 11:55 – 12:15 12:15 – 12:30	Ultra-Low Fields (*Han*)	-J. Clarke, UC Berkeley, *SQUID-detected NMR and MRI in Microtesla Fields* - S. Xu, C. Crawford, D. Michalak, D. Budker, A. Pines, UC Berkeley, *Laser-detected magnetic resonance imaging in the Earth's field* - A. N. Matlashov, V. S. Zotev, P. L. Volegov, M. A. Espy, J. C. Mosher, R. H. Kraus, Jr., Los Alamos National Laboratory, *Multi-channel MRI at ultra-low fields compatible with MEG* - S. Appelt, F. W. Häsing, H. Kühn, U. Sieling, FZ Jülich, *Long living spin states in the Earth's magnetic field* -P. T. Callaghan, Victoria University of Wellington, *The Antartic experience with Earth field NMR*
Fr	12:30 – 12:35	Farewell (*Seymour*)	