

**51<sup>ST</sup> Rocky Mountain Conference on Analytical Chemistry**  
**32<sup>nd</sup> International EPR Symposium**  
**Poster Presentations**

**Monday, July 20: 7:30-9:30 p.m. (Poster Session A)**

**Tuesday, July 21: 7:45-9:45 p.m. (Poster Session B)**

A	<b>Orientation Selective DEER Measurements on Vinculin Tail at X-band Frequencies: A Tool to Determine Spin Label Orientations in Proteins.</b> <u>Christoph Abé</u> , Daniel Klose and Heinz-Jürgen Steinhoff University of Osnabrück
B	<b>Role of the Myosin Relay Helix in Interdomain Coupling Studied by DEER.</b> <u>Roman Agafonov</u> , Sarah E. Blakely, Margaret A. Titus, David D. Thomas, Yuri E. Nesmelov, University of Minnesota
A	<b>Following Sources and Dynamics of Free Radicals in Aging Mouse Brain by EPR Spectroscopy.</b> <u>Sameh S. Ali</u> , Jacinta Lucero and Laura L. Dugan, University of California San Diego
B	<b>Identification of a Free Radical Generated From the Catalytic Reaction of Oxalate Decarboxylase Studied by EPR Spin Trapping.</b> Christopher P. Centonze, Witcha Imaram, Mario Moral, Nigel G.J. Richards and <u>Alexander Angerhofer</u> , University of Florida
A	<b>Solute Effects on Spin Label Mobility and Distance Distribution Profiles for Aqueous Exposed Sites on HIV-1 Protease.</b> <u>Blackburn, M.E.</u> , Galiano, L., Veloro, A.M., Harris, J.H. II and Fanucci, G.E., University of Florida
B	<b>A Quasioptical Dual Source FM-Chirp EPR Spectrometer Operating at 223-233 GHz.</b> Ryan M. Kerick and <u>David E. Budil</u> , Northeastern University; Jeffrey Hesler, Virginia Diodes, Inc.
A	<b>Adaptive Signal Averaging Technique for Enhancing the Sensitivity of Continuous Wave Magnetic Resonance Experiments.</b> <u>C.J. Cochrane</u> and P. M. Lenahan Pennsylvania State University
B	<b>Distance Measurement of Photoinduced Charge Separation in Donor-Acceptor Systems for Artificial Photosynthesis.</b> <u>Raanan Carmieli</u> , Joseph E. Bullock, Qixi Mi, Annie Butler Ricks, Emilie M. Giacobbe, Sarah M. Mickley, Josh Vura-Weis and Michael R. Wasielewski, Northwestern University
A	<b>Multifrequency ESR Study of Spin Labeled Molecules in Inclusion Compounds With Cyclodextrins.</b> <u>Boris Dzikovski</u> <sup>1</sup> , Dmitriy Tipikin and Jack Freed, Cornell University; Vsevolod Livshits, Russian Academy of Sciences; Keith Earle, University of Albany
B	<b>EPR Spectra, Parameter Estimation and Intrinsic Geometry.</b> <u>Keith A. Earle</u> , University at Albany; David J. Schneider, Cornell University
A	<b>ENDOR and DFT Study of 9'-cis Neoxanthin Carotenoid Radicals, a Carotenoid in LHC II.</b> <u>A. Ligia Focsan</u> and Lowell Kispert, University of Alabama; József Deli and Péter Molnar, University of Pécs
B	<b>New Dielectric Multi-Sample EPR Resonators.</b> <u>I.N. Geifman</u> , Quality Engineering Education, Inc.; I.S. Golovina and S.P. Kolesnik, Institute of Semiconductor Physics of NASU
A	<b>Incorporating EPR Structural Restraints in Computational Modeling of EmrE.</b> <u>Stephanie J. Hirst</u> , Nathan S. Alexander, Hassane S. Mchaourab and Jens Meiler, Vanderbilt University

B	<b>Investigation of the Unstructured-to-Structured Transition of the Intrinsically Disordered Protein, IA<sub>3</sub> by SDSL-EPR.</b> <u>Natasha L. Hurst</u> and Gail E. Fanucci, University of Florida
A	<b>Calculation of the EPR Spectrum of a Small Nitroxide from Molecular Dynamics Simulations.</b> Kelly N. Kazmier, Christopher W. Moth, Terry P. Lybrand and <u>Eric J. Hustedt</u> , Vanderbilt University
B	<b>Structural Dynamics Of The Phospholamban-SERCA Complex By Site-Directed EPR Spectroscopy.</b> <u>Zachary M. James</u> , Kurt D. Torgersen, Christine Karim and David D. Thomas, University of Minnesota
A	<b>Human Serum Albumin: A Biological Model System for DEER.</b> <u>Matthias J.N. Junk</u> , Hans W. Spiess and Dariush Hinderberger, Max Planck Institute for Polymer Research
B	<b>Spin Echo Dephasing Rates for Organic Radicals in a Rigid Matrix Between 25 and 375.</b> <u>Velavan Kathirvelu</u> , Sandra S. Eaton and Gareth R. Eaton, University of Denver
A	<b>Site-directed Spin Labeling EPR Studies of HIV-1 Protease Subtypes F and CRF01_AE.</b> <u>Jamie L. Kear</u> , Mandy E. Blackburn and Gail E. Fanucci, University of Florida
B	<b>EPR and ENDOR Characterization of a Mo(III)-Hydride Formed by Reaction of a N<sub>2</sub>-Reducing Complex With Dihydrogen.</b> <u>R. Adam Kinney</u> and Brian M. Hoffman, Northwestern University; Dennis Hettterscheidt and Richard R. Schrock, Massachusetts Institute of Technology
A	<b>Pulsed EPR Study of Photoinduced Electron Transfer Between Carotenoid Complexes With Arabinogalactan and TiO<sub>2</sub> Nanoparticles.</b> Nikolay E. Polyakov and Tatyana V. Leshina, Institute of Chemical Kinetics & Combustion; Tatyana A. Konovalova and <u>Lowell D. Kispert</u> , University of Alabama
B	<b>Improved Temperature Stability for Long Acquisition Times in Low Frequency EPR (1-3 GHz) of Copper (II) Complexes.</b> <u>Aaron W. Kittell</u> , Jason Kowalski, Patrick Pennington, James R. Anderson, and James S. Hyde, Medical College of Wisconsin
A	<b>Structure and Function of the tRNA Modifying MnmE/GidA Complex Studied With DEER Spectroscopy.</b> S. Boehme, H.-J. Steinhoff and <u>J. P. Klare</u> , University of Osnabrueck; Simon Meyer and A. Wittinghofer, MPI for Molecular Physiology
B	<b>Electron Spin Echo Envelope Modulation Spectroscopy of the Non-heme Ferrous Active Site of Tyrosine Hydroxylase.</b> <u>Matthew D. Krzyaniak</u> and John L. McCracken, Michigan State University; Bekir E. Eser and Paul F. Fitzpatrick, Texas A&M University
A	<b>ENDOR Crystallography: ENDOR Spectroscopy Shows That Guanine N1 Binds to [4Fe-4S] Cluster II of the S-Adenosylmethionine-Dependent Enzyme MoeA.</b> <u>Nicholas S. Lees</u> and Brian M. Hoffman, Northwestern University; Petra Hänzelmann and Hermann Schindelin, University of Würzburg; Heather L. Hernandez, Sowmya Subramanian and Michael K. Johnson, University of Georgia
B	<b>PELDOR Reveals Dynamic of Short DNA Molecules.</b> <u>A. Marko</u> , D. Margraf, V. P. Denysenkov and T. F. Prisner, Goethe-University; P. Cekan and S. Th. Sigurdsson, University of Iceland; O. Schiemann, University of St. Andrews
A	<b>Accuracy of the Calculation of the g Tensor Components: A Comparative Study of the Sum Overstates and Coupled Perturbed Configuration Interaction Methods.</b> <u>Saba M. Mattar</u> , University of New Brunswick
B	<b>Comparing and Contrasting the Structural Topology of Two Model Membrane Peptides: Magainin-2 and the M2δ Domain of The Acetylcholine Receptor Utilizing EPR Spectroscopy.</b> <u>Daniel J. Mayo</u> , Nidhi Subbaraman and Gary A. Lorigan, Miami University
A	<b>Significantly Improved Sensitivity of PELDOR/DEER Experiments Conducted at Q-band at the Ohio Advanced EPR Laboratory.</b> Harishchandra Ghimire, <u>Robert M. McCarrick</u> and Gary A. Lorigan, Miami University; David E. Budil, Northeastern University

B	<b>Conformational Motion of the ABC Transporter MsbA in Liposomes.</b> Ping Zou and Hassane S. Mchaourab, Vanderbilt University
A	<b>Multi-frequency Electron Paramagnetic Resonance and Magnetization of Cr<sub>2</sub>C<sub>8</sub>O<sub>16</sub>H<sub>14</sub>.</b> James McNeely, Anthony Mihovilovich, Kim Davis and Brant Cage, Illinois Institute of Technology; Tijana Rajh, Argonne National Laboratory
B	<b>X-Band 2-Loop-1-Gap LGR and Long-Slot Iris for Reduced Frequency Pulling.</b> Richard R. Mett, Jason W. Sidabras and James S. Hyde, Medical College of Wisconsin
A	<b>Use of Oversize Rectangular WR-28 Waveguide at W-band for Low-Loss and Increased Signal-to-Noise Ratio.</b> Richard R. Mett, Jason W. Sidabras and James S. Hyde, Medical College of Wisconsin
B	<b>Calculation of Double-Quantum-Coherence Two-Dimensional Spectra: Distance Measurements and Orientational Correlations.</b> Sushil K. Misra, Concordia University; Peter P. Borbat and Jack H. Freed, Cornell University
A	<b>Can Dipolar and Exchange Interactions be Separated?</b> Mirna Peric, Jagnandan Kaur, Barney L. Bales and Miroslav Peric, California State University at Northridge
B	<b>Measurement of Dose Using Alanine Dosimetry System at the Shihoro Potato Irradiation Facility .</b> Makoto Miyahara, National Institute of Health Sciences; Takayuki Hironiwa, Japan Radioisotope Association; Tosiki Masimizu, Sojyo University; Hideyuki Hara, Bruker Biospin; Kazutosi Okano, Electron Optic Laboratory; Tetuya Takekawa, Nuclear Fuel Industry; Hiromi Sunaga, Radiation Application Development Association
A	<b>Development of a Control System for Pulsed-Electron Spin Resonance Spectrometers.</b> Yukio Mizuta and Shunji Kazama, JEOL Ltd; Yasunori Ohba, Tohoku University; Yuhei Shimoyama, Muroran Institute of Technology
B	<b>Steppingstone Magnetic Resonance Training (SMART) Center Implementation.</b> Reef Morse and Kiyo A. Morse, Steppingstone Center for Gifted Education and Steppingstone Magnetic Resonance Training (SMART) Center; Arthur Heiss, Bruker BioSpin Corporation
A	<b>Potential of Tunable High-Frequency EPR Spectroscopy in the Identification of Impurity Cr<sup>3+</sup> Ions in Synthetic Forsterite.</b> Aleksei A. Konovalov, Valery F. Tarasov and Laila V. Mosina, Kazan Physical-Technical Institute, Russian Academy of Sciences
B	<b>Line Width Factors Affecting Distance Determination for Low Frequency EPR.</b> Patrick M. Pennington, Aaron W. Kittell and James S. Hyde, Medical College of Wisconsin
A	<b>Ligand Binding Model of GM2 Activator Protein Revealed by EPR.</b> Yong Ran and Gail E. Fanucci, University of Florida
B	<b>Defect Energy Level Resolution through Spin Dependent Tunneling Spectroscopy in 1.2nm Dielectrics.</b> Jason T. Ryan and Patrick M. Lenahan, Penn State University; Anand T. Krishnan and Srikanth Krishnan, Texas Instruments
A	<b>Counter-rotating Current Microwave Resonator for in Vivo EPR Spectroscopy.</b> Jason W. Sidabras, Richard R. Mett and James S. Hyde, Medical College of Wisconsin; Piotr N. Lesniewski and Harold M. Swartz, Dartmouth Medical School
B	<b>Extracting the Signature of Controlled Entanglement of P Donors in <sup>28</sup>Si.</b> Stephanie Simmons, Richard Brown, Andrew Briggs, John J.L. Morton and Arzhang Ardavan, Oxford University; Shinichi Tojo and Kohei M. Itoh, Keio University; M.L.W. Thewalt, Simon Fraser University
A	<b>The HIPER Project - 94GHz kW Nanosecond Pulse EPR With Very Low Deadtime.</b> P.A.S.Cruickshank, D.Bolton, D.A.Robertson and G.M.Smith, St. Andrews University; R.Wylde, Thomas Keating Ltd.
B	<b>Spin Label Studies of the HIV RNA/DNA NCp7 Chaperone Complex.</b> Yan Sun, William K. Myers, Vladimir M. Grigoryants and Charles P. Scholes, University at Albany; Peter P. Borbat and Jack H. Freed, Cornell University

A	<b>DEER Distance Measurement Between a Spin Label and a Native FAD Seniquinone in Electron-Transferring Flavoprotein .</b> <u>Michael A. Swanson</u> , Velavan Kathirvelu, Gareth R. Eaton and Sandra S. Eaton, University of Denver; Frank E. Frerman, University of Colorado School of Medicine
B	<b>Spin Decoherence in S=10 Single-Molecule Magnets.</b> <u>S. Takahashi</u> and M. S. Sherwin, University of California Santa Barbara; J. van Tol and L.-C. Brunel, National High Magnetic Field Laboratory; C. C. Beedle and D. N. Hendrickson, University of California San Diego
A	<b>The First Few Steps to Implementation of Scalable Molecular-Spin Based QC/QIP: Molecular Designs for Electron Spin-Qubits and Pulsed Electron Magnetic Resonance Spin Technology.</b> Kazunobu Sato, Shigeaki Nakazawa, Shinsuke Nishida, Tomoaki Ise, Nobuaki Mori, Kazuo Toyota Daisuke Shiomi and <u>Takeji Takui</u> , Osaka City University; Robabeh Rahimi and Mikio Nakahara, Kinki University; Yumi Yakiyama and Yasushi Morita, Osaka University; Masahiro Kitagawa, Core Research for Evolutional Science and Technology (CREST); Hideyuki Hara, Bruker BioSpin K. K.; Patrick Carl and Peter Höfer, Bruker BioSpin GmbH
B	<b>Combining the Absorption and Dispersion Signals to Improve Signal-to-Noise for Rapid Scan EPR Imaging.</b> <u>Mark Tseitlin</u> , Richard W. Quine, George A. Rinard, Sandra S. Eaton and Gareth R. Eaton, University of Denver
A	<b>Power Saturation EPR on the Novel Surfactant Protein-B Peptide Mimic KL<sub>4</sub> Using Both Spin-labeled Peptide and Spin-labeled Lipid in DPPC and POPC Enriched Vesicles.</b> <u>Austin L. Turner</u> , Joanna Long and Gail E. Fanucci, University of Florida
B	<b>Two-Component Magnetic Structure of Iron Oxide Nanoparticles Mineralized in Listeria Innocua Protein Cages.</b> <u>RJ Usselman</u> , S Russek and R Goldfarb, National Institute of Standards and Technology; MT Klem, M. Young, T. Douglas and DJ Singel, Montana State University
A	<b>Flaps Distance Determination of Subtype B HIV-1 Protease.</b> <u>Angelo M. Veloro</u> , Mandy E. Blackburn and Gail E. Fanucci, University of Florida
B	<b>Monitoring Copper (II) Binding Modes in the Prion Protein Using EPR and the Relevance to Fibril Formation.</b> <u>Micah P. Visconte</u> , Eric D. Walter, Madhuri Chattopadhyay, Dan Stevens and Glenn Millhauser, University of California Santa Cruz
A	<b>Copper Induced Formation of Structure in the Prion Protein.</b> <u>Eric D. Walter</u> , Micah P. Visconte, Ann R. Spevacek, Eric G. Evans, Alex J. McDonald and Glenn L. Millhauser, University of California Santa Cruz
B	<b>Insights On The Copper Coordination and Reactivity of Restriction Endonuclease EcoRI by ESR Spectroscopy and Modeling.</b> <u>Zhongyu Yang</u> , Ming Ji, Preeti Mehta, Linda Jen-Jacobson and Sunil Saxena, University of Pittsburgh
A	<b>Mapping the Global Structure of the phi29 Packaging RNA Using DEER Distance Constraints.</b> <u>Xiaojun Zhang</u> , Mamoon Hatmal, Glenna Z Sowa, Eric A Price, Ian Haworth and Peter Z Qin, University of Southern California
B	<b>Proton-Coupled Electron Transfer Reactions: The Radicals Behind the Ru(bpy)<sub>3</sub>.</b> <u>Malcolm D.E. Forbes</u> , Natalia V. Lebedeva, Javier J. Concepcion and Thomas J. Meyer, University of North Carolina
A	<b>Structure of the CDB3 - ankD34 Complex From Site-Directed Spin-Labeling Studies.</b> Sunghoon Kim, <u>Eric J. Hustedt</u> , Suzanne Brandon, Charles E. Cobb and Albert H. Beth, Vanderbilt University
B	<b>Vitrification, Relaxation and Free Volume in Glycerol-Water Binary Liquid Mixtures: Spin Probe ESR Studies.</b> Debamalya Banerjee and <u>S.V. Bhat</u> , Indian Institute of Science