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## CONFERENCE PRESENTATIONS/NON-REFEREED PUBLICATIONS 2013

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*The following are non-refereed publications and conference papers authored by CAER Staff. To see published articles in refereed/scholarly journals and books, select the "Refereed Publications" link.*

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Davis, B.H. "Fischer-Tropsch Synthesis: Comparison of Process Based On Fossil and Biomass Feedstock," 2013 AIChE Annual Meeting, Nov. 3-8, San Francisco, CA, 2013. **(2013 Nov/Dec)**

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Jacobs, G.; Pendyala, V.R.R.; Ma, W.; Gnanamani, M.K.; Davis, B.H. "Fischer-Tropsch Synthesis: Matching the Catalyst to the Feedstock and the Reactor," 2013 AIChE Annual Meeting, Nov. 3-8, San Francisco, CA, 2013. **(2013 Nov/Dec)**

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Liu, K.; Matin, N.; Huang, Q.; Martin, C.; Remias, J.; Liu, K. "Development of Fast and Thermally Stable Solvent system for CO<sub>2</sub> Capture from Post-Combustion Flue Gas.," 2013 AIChE Annual Meeting, Nov 3-8, San Francisco, CA, 2013. **(2013 Nov/Dec)**

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Matin, N.S.; Remias, J.; Neathery, J.; Liu, K. "Thermodynamic Modeling of Carbon Dioxide Solubility in Aqueous Morpholine Solutions," 2013 AIChE Annual Meeting, Nov 3-8, San Francisco, California, 2013. **(2013 Nov/Dec)**

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"NSF Opportunities," EPSCoR, Oct. 17, Shelbyville, KY, 2013. **(2013 Sept/Oct)**

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Belkin, H.E.; Hower, J.C.; O'Keefe, J.; Garrison, T.; Johnston, M.. "Cenozoic coals of Southeast Asia (Malaysia, Philippines, and Thailand): Petrology and Geochemistry," The Society for Organic Petrology, Sept 2-4, Sosnowiec, 2013. **(2013 Sept/Oct)**

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Choi, J.; Schwartz, V.; Santillan-Jimenez, E.; Crocker, M.; Lewis, S.; Connatser, R.; Meyer, H.; More, K. "Catalytic Performance of Mo<sub>2</sub>C in Aqueous-Phase Hydroprocessing of Model Bio-oils," Southeastern Catalysis Society 12th Annual Fall Symposium, September 29-30, Asheville, NC, 2013. **(2013 Sept/Oct)**

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Crocker, M.; Wilson, M.H.; Groppo, J.; Placido, A.; Graham, S.; Santillan-Jimenez, E.; Morgan, T.; Shoup, J.; Kim, D.; Mills, L.; Shin, H.Y.; Crofcheck, C. "CO<sub>2</sub> Recycling Using Microalgae for the Production of Liquid Fuels," 246th ACS National Meeting, September 8-12, Indianapolis, IN, 2013. **(2013 Sept/Oct)**

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Davis, B.H. "Carbon dioxide's real impact on climate change," The Catalyst Review, 1,5, 2013. **(2013 Sept/Oct)**

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Garrison, T.; Hower, J.C.; O'Keefe, J.; Stracher, G.; Blake, D.R. "Levels of variation in emissions of volatile organic hydrocarbons and aromatics from coal fires," Geological Society of America, Oct 27-30, Denver, CO, 2013. **(2013 Sept/Oct)**

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Geboy, N.J.; Engle, M.A.; Hower, J.C. "A mathematical solution to consistent interpretations of coal geochemical data regardless of reporting basis," Geological Society of America, Oct 27-30, Denver, CO, 2013. **(2013 Sept/Oct)**

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Hower, J.C. "Influence of engineering controls on fly ash chemistry: Examples from Kentucky power plants," International Conference on Coal Science & Technology, Sept 30-Oct 3, State College, PA, 2013. **(2013 Sept/Oct)**

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Hower, J.C. "History of coal rank theories with emphasis on Eastern US examples," Geological Society of America, Oct 27-30, Denver, CO, 2013. **(2013 Sept/Oct)**

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Jewell, B.; Oberlink, A.; Robl, T. "An Overview of Fluidized Bed Combustion Spent Bed Material Utilization in the U.S.," Coal Ash Asia 2013 Conference, Sept. 2-7, Shuozhou City, Shanxi Province, 2013. **(2013 Sept/Oct)**

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Johnston, M.; Hower, J.C.; Eble, C.; O'Keefe, J. "The characterization of maceral composition in the Leatherwood coal bed in eastern Kentucky," Geological Society of America, Oct 27-30, Denver, CO, 2013. **(2013 Sept/Oct)**

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Kronbauer, M.A.; Izqueirido, M.; Dai, S.; Waanders, F.B.; Wagner, N.J.; Mastalerz, M.; Hower, J.C.; Oliviera, M.L.S.; Silva, L.F.O. "Geochemistry of ultra-fine and nano-compounds in coal gasification ash," International Conference on Coal Science & Technology, Sept 30 - Oct 3, State College, PA, 2013. **(2013 Sept/Oct)**

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Landon, J.; Gao, X.; Neathery, J.; Liu, K. "Carbon Enrichment of Amine Solutions for Advanced Carbon Capture Systems," CERC ACTC Joint Meeting and Midpoint Review, Oct 1-4, Jackson Hole, WY, 2013. **(2013 Sept/Oct)**

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Lippert, C.; Remias, J.; Liu, K. "Catalyst Development for Rate Enhanced Acid Gas (CO<sub>2</sub>) Scrubbing," 30th Annual International Pittsburgh Coal Conference, Sept 15-18, Beijing, China, 4, 3275-3278, 2013. **(2013 Sept/Oct)**

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Lippert, C.; Sarma, M.; Remias, J.; Liu, K. "CO<sub>2</sub> Absorption Enhancement Using Homogeneous Catalysts," CERC ACTC Joint Meeting and Midpoint Review, Oct 1-4, Jackson Hole, Wyoming, 2013. **(2013 Sept/Oct)**

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Matin, N.; Remias, J.; Neathery, J.; Liu, K. "Thermodynamic Modeling of Carbon Dioxide Solubility in Aqueous Morpholine Solutions," 2013 AIChE Annual Meeting, Nov 6-9, San Francisco, CA, 2013. **(2013 Sept/Oct)**

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O'Keefe, J.M.K.; Johnston, M.; Dutton, K.R.; Layne, A.R.; Howard, M.B.; Hower, J.C. "Fungal distributions as indicators of mire type and preservation, upper Mississippi Embayment, USA," American Association of Stratigraphic Palynologists, 22 October, San Francisco, CA, 2013. **(2013 Sept/Oct)**

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O'Keefe, J.M.K.; Johnston, M.; Dutton, K.R.; Layne, A.R.; Howard, M.B.; Hower, J.C. "Variations in depositional environment and paleoecology among lignites in the Upper Mississippi embayment," Geological Society of America, Oct 27-30, Denver, CO, 2013. **(2013 Sept/Oct)**

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Santillan-Jimenez, E.; Morgan, T.; Crocker, M. "Conversion of Triglycerides and Fatty Acids to Fuel-Like Hydrocarbons over Supported Nickel Catalysts," 246th ACS National Meeting, September 8-12, Indianapolis, IN, 2013. **(2013 Sept/Oct)**

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Wilson, M.H.; Groppo, J.; Placido, A.; Crocker, M.; Shea, A.; Crofcheck, C. "From Flue Gas to Fungible Fuels: Demonstration of an Algae Based System for CO<sub>2</sub> Mitigation from Coal Fired Power Plants," 7th Annual Algae Biomass Summit, Oct. 30-Nov. 3, Orlando, FL, 2013. **(2013 Sept/Oct)**

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Wilson, M.H.; Groppo, J.; Placido, A.J.; Crocker, M.; Jimenez, E.; Shea, A.; Crofcheck, C.; Durst, D. "From Flue Gas to Fungible Fuels: Demonstration of an Algae Based System for CO<sub>2</sub> Mitigation from Coal Fired Power Plants," International Pittsburgh Coal Conference, Sept 9-20, Beijing, 2013. **(2013 Sept/Oct)**

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Crocker, M. "CO<sub>2</sub> Recycling Using Microalgae for the Production of Biofuels," 3rd KACST (King Abdulaziz City for Science & Technology) August 12-15, Oxford, 2013. **(2013 July/Aug)**

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Liu, K. "Application of a Heat Integrated Post-combustion CO<sub>2</sub> Capture System with Hitachi Advanced Solvent into Existing Coal-Fired Power Plant," 2013 NETL CO<sub>2</sub> Capture Technology Meeting, July 8-11, Pittsburgh, PA, 2013. **(2013 July/Aug)**

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Morris, A.; Weisenberger, M.; Billiter, S. "Electrically Conductive Carbon Nanotube-Filled Acrylic Fiber in Multifilament Continuous Tows," 2013 American Carbon Society International Conference, July 13-19, Rio de Janeiro, 2013. **(2013 July/Aug)**

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Andrews, R. "Energy Storage Options," KAM Energy Conference, May 14, Lexington, KY, 2013. **(2013 May/June)**

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Choi, J.-S.; Schwartz, V.; Santillan-Jimenez, E.; Crocker, M.; Lewis, S.A.; Meyer III, H.M.; More, K.L. "Catalytic Performance of Molybdenum Carbides in Aqueous-Phase Hydrotreating of Acetic Acid," Prepr. Pap.-Am. Chem. Soc., Div. Energy Fuels Preprints, 58, 1104, 2013. **(2013 May/June)**

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Choi, J.-S.; Schwartz, V.; Santillan-Jimenez, E.; Crocker, M.; Lewis, S.; Meyer, H.; More, K. "Catalytic Activity and Stability of Molybdenum Carbides in Aqueous Phase Hydrotreating of Acetic Acid," 23rd North American Meeting of The Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Graham, U.M.; Jasinski, J.; Lipka, S.; Swartz, C.; Davis, B.H. "Oxygen-Tuning Capability of Ultra-Fine CeO<sub>2</sub>: Monitoring of the Discharge Potential of Li/Air Battery with CeO<sub>2</sub> Enhanced Cathode.," 23rd North American Catalysis Meeting, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Jacobs, G.; Jermwongratanachai, T.; Ma, W.; Shafer, W.D.; Gnanamani, M.K.; Gao, P.; Kitiyanan, B.; Davis, B.H.; Cronauer, D.C.; Kropf, A.J.; Marshall, C.L. "Can promoters in Co/Al<sub>2</sub>O<sub>3</sub> Fischer-Tropsch synthesis catalysts be substituted by Ag? An EXAFS, reaction testing, and catalyst regeneration study.," 23rd North American Meeting of the Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Jermwongratanachai, T.; Jacobs, G.; Ma, W.; Shafer, W.D.; Gnanamani, M.K.; Gao, P.; Kitiyanan, B.; Davis, B.H.; Cronauer, D.C.; Kropf, A.J.; Marshall, C.L. "Fischer-Tropsch synthesis: examination of the coordination environment and simulated regeneration of Pt promoted Co/Al<sub>2</sub>O<sub>3</sub> using oxidation-reduction cycles," 23rd North American Meeting of the Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Kim, D.; Crocker, M. "Adsorption and Desorption of Propene on a Cu-Chabazite Catalyst," 23rd North American Meeting of The Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Kim, M.-Y.; Choi, J.-S.; Crocker, M. "Roles of C<sub>3</sub>H<sub>6</sub> in NH<sub>3</sub> Generation and NO<sub>x</sub> Reduction over a Cu-chabazite SCR Catalyst under Lean/Rich Cycling Conditions," 23rd North American Meeting of The Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Ma, W.; Jacobs, G.; Todic, B.; Bukur, D.B.; Davis, B.H. "Fischer-Tropsch synthesis: influence of process conditions on deactivation of Ru and Re promoted 25%Co/Al<sub>2</sub>O<sub>3</sub> catalysts," 23rd North American Meeting of the Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Mobley, J.; Patil, N.; Crocker, M.; Meier, M. "Towards Oxidative Catalytic Depolymerization of Lignin and Lignin Model Compounds," 23rd North American Meeting of The Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Pendyala, V.R.R.; Gnanamani, M.K.; Jacobs, G.; Shafer, W.D.; Davis, B.H. "Fischer-Tropsch synthesis: hydrogenation of carbon oxides to hydrocarbons over ceria supported cobalt catalysts," 23rd North American Meeting of the Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Ribeiro, M.; Azevedo, I.; Gnanamani, M.K.; Jacobs, G.; Davis, B.H.; Noronha, F. B. "Evidence of a correlation between support reducibility and alcohol selectivity in Si doped Co/CeO<sub>2</sub> catalysts for Fischer-Tropsch synthesis," 23rd North American Meeting of the Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Santillan-Jimenez, E.; Morgan, T.; Shoup, J.; Crocker, M. "Ni-Catalyzed Conversion of Lipids to Fuel-Like Hydrocarbons: From Proof of Concept to Catalyst Recycling Studies," 23rd North American Meeting of The Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Shafer, W.D.; Jacobs, G.; Davis, B.H. "Fischer-Tropsch synthesis: investigation of the partitioning of dissociated H<sub>2</sub> and D<sub>2</sub> on activated cobalt catalysts," 23rd North American Meeting of the Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Ti, Y.; Toops, T.J.; Crocker, M. "Isocyanate Formation and Reactivity on a Ba-based LNT Catalyst Studied by DRIFTS and Mass Spectrometry," 23rd North American Meeting of The Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Wang, J.; Ji, Y.; Crocker, M. "Effect of Aging on NO<sub>x</sub> Reduction in Coupled LNT-SCR Systems," 23rd North American Meeting of The Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Wang, Y.; Crocker, M.; Shi, C. "Three-Dimensional Ordered Mesoporous Cobalt-Manganese Oxide: Highly Active Catalyst for "Storage-Oxidation" Cycling for the Removal of Formaldehyde," 23rd North American Meeting of The Catalysis Society, June 2-7, Louisville, KY, 2013. **(2013 May/June)**

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Dey, S.; Roehling, J.D.; Batenburg, J.; Davis, B.H. "3D characterization of Fischer-Tropsch catalysts before and after reduction," 245th ACS National Meeting, April 7-11, New Orleans, LA, Preprints - American Chemical Society, Division of Energy & Fuels, 58(1), 1037, 2013. **(2013 Mar/Apr)**

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G. Jacobs; W. Ma; B.H. Davis; B. Todic; D.B. Bukur, "Fischer-Tropsch synthesis: linking cobalt catalyst performance parameters to catalyst structure: an EXAFS investigation," 10th Natural Gas Conversion Symposium, March 1-7, Doha, 2013. **(2013 Mar/Apr)**

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Gnanamani, M.K.; Jacobs, G.; Shafer, W.D.; Pendyala, V. R. R.; Davis, B.H. "Low temperature water-gas shift reactions over alkali-promoted cobalt carbide catalysts," 245th ACS National Meeting, April 7-11, New Orleans, LA, Preprints - American Chemical Society, Division of Energy & Fuels, 58(1), 1310-1311, 2013. **(2013 Mar/Apr)**

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Groppo, J.G.; Henke, K.R. "Leaching Comparison of Natural and Coal-Derived Lightweight Aggregates Used for Concrete Masonry Units," World of Coal Ash, Apr. 23-25, Lexington, KY, Proceedings, 2013. **(2013 Mar/Apr)**

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Harman-Ware, A-E; Crocker, M; DeBolt, S, "Pyrolysis-GC/MS Characterization of Bioenergy Crops," 2013 Workshop on Renewable Energy and Energy Efficiency, Mar 24-26, Louisville, KY, 2013. **(2013 Mar/Apr)**

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Hower, J.C.; Dai, S.; Seredin, V.; Kostova, I.; Silva, L. "Lanthanides in coal combustion fly ash," World of Coal Ash, April 23-25, Lexington, 2013. **(2013 Mar/Apr)**

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Jermwongratanachai, T.; Jacobs, G.; Ma, W.; Gao, P.; Kitiyanan, B.; Davis, B. H.; Cronauer, D. C.; Kropf, A. Jeremy; Marshall, C. L. "Fischer-tropsch synthesis: Investigation of the impact of Pt and Ag promotor loading on the local atomic structure of Co/alumina catalysts using an in-situ XAS," 245th ACS National Meeting, April 7-11, New Orleans, LA, Preprints - American Chemical Society, Division of Energy & Fuels, 58(1), 1037, 2013. **(2013 Mar/Apr)**

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Jewell, R. "Micromechanics and Complementary Energy of Fibers Embedded in a Low-Energy CSA Cement Matrix," World of Coal Ash, Apr. 23-25, Lexington, KY, 2013. **(2013 Mar/Apr)**

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Ma, W.; Jacobs, G.; Graham, U.; Dadyburjor, D.; Kugler, E.; Davis, B.H. "Fischer-Tropsch synthesis: Effect of K loading on the water-gas shift reaction during Fischer-Tropsch synthesis on Fe based catalysts," 245th ACS National Meeting, April 7-11, New Orleans, LA, Preprints - American Chemical Society, Division of Energy & Fuels, 2013. **(2013 Mar/Apr)**

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Masuku, C.M.; Hildebrandt, D.; Glasser, D.; Davis, B.H. "Steady-state attainment period for Fischer-Tropsch products," 245th ACS National Meeting, April 7-11, New Orleans, LA, Preprints - American Chemical Society, Division of Energy & Fuels, 58(1) 6-7, 2013. **(2013 Mar/Apr)**



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Thompson, J.; Frimpong, R.; Remias, J.; Neathery, J.; Liu, K. "Degradation and heat stable salt formation during solvent development in a pilot-scale CO<sub>2</sub> capture process using coal combustion flue gas," 245th ACS National Meeting, April 7-11, New Orleans, Louisiana, 2013. **(2013 Mar/Apr)**

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W. Ma; G. Jacobs; B.H. Davis, "Fischer-Tropsch synthesis: Kinetic effect of water over 25%Co/Al<sub>2</sub>O<sub>3</sub> catalyst in a slurry reactor," 10th Natural Gas Conversion Symposium, March 1-7, Doha, 2013. **(2013 Mar/Apr)**

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Wang, J.J.; Kim, D.; Crocker, M.; Kim, M.-Y.; Choi, J.-S.; Dearth, M.; McCabe, R.W.; Shi, C.; Zhang, Z.; Xu, L.; Zhu, A. "Synergy of LNT and SCR Catalysts in Coupled LNT-SCR Systems," 2013 Cross-Cut Lean Exhaust Emissions Reduction Simulations (CLEERS) Workshop, April 10-12, Dearborn, MI, 2013. **(2013 Mar/Apr)**

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Jiang, Q.; Rentschler, J.; Remias, J.; Liu, K. "A Solvent/Membrane Hybrid Post-combustion CO<sub>2</sub> Capture Process for Existing Coal-Fired Power Plants project," ARPA-E Summit 2013, Feb 25-27, Washington DC, 2013. **(2013 Jan/Feb)**

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Lippert, C.; Remias, J.; Gupta, D.; Selegue, J.; Odom, S.; Burrows, S., "Homogenous Catalyst Development for Catalytic Enhancement of CO<sub>2</sub> Capture in Aqueous Solvents," US-China CERC Technical, Jan 6-9, Oakland, CA, 2013. **(2013 Jan/Feb)**

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Liu, K.; Placido, A.; Nikolic, H.; Thompson, J. "Application of a Heat Integrated Post-combustion CO<sub>2</sub> Capture System with Hitachi Advanced Solvent into Existing Coal-Fired Power Plant," Mandatory Review Meeting for the DOE Slipstream Project, Jan 10-11, Pittsburgh, PA, 2013. **(2013 Jan/Feb)**

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Liu, K.; Neathery, J. "Thermodynamic analysis on aqueous system," Carbon Capture 101 Workshop, Feb 4-5, Lexington, 2013. **(2013 Jan/Feb)**

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M. Crocker; J. Mobley; A.E. Harman-Ware; R. Pace; S. Morton III; N. Patil; M. Meier; S. DeBolt, "Lignin Deconstruction for the Production of Fuels and Chemicals," 1st SEC Symposium, Impact of the Southeast on the World's Renewable Energy Future, February 10-12, Atlanta, GA, 2013. **(2013 Jan/Feb)**

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Mattos, L.V.; Jacobs, G.; Davis, B.H.; Noronha, F.B. "A review of kinetics, reaction mechanism and catalyst deactivation for syngas production from ethanol," 10th Natural Gas Conversion Symposium, March 2-7, Doha, 2013. **(2013 Jan/Feb)**

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Neathery, J.; Liu, K. "CO<sub>2</sub> Demonstration Plants," Carbon Capture 101 Workshop, Feb 4-5, Lexington, 2013. **(2013 Jan/Feb)**

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Remias, J.; Liu, K.; Gupta, D.; Selegue, J.; Lippert, C. "Homogenous Catalyst Development for Catalytic Enhancement of CO<sub>2</sub> Capture in Aqueous Solvents," CERC ACTC Joint Meeting, Jan 6-10, Oakland, CA, 2013. **(2013 Jan/Feb)**

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Remias, J.; Liu, K. "Solvent Selection and Development," Carbon Capture 101 Workshop, Feb 4-5, Lexington, 2013. **(2013 Jan/Feb)**

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Todic, B.; Ma, W.; Jacobs, G.; Davis, B.H.; Bukur, D.B. "CO-insertion mechanism based comprehensive kinetic model of Fischer-Tropsch synthesis over Re-promoted Co catalyst," 10th Natural Gas Conversion Symposium, March 2-7, Doha, 2013. **(2013 Jan/Feb)**

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Weisenberger, M. "Fiber Spinning and Characterization of Carbon Fiber Precursors," Carbon Fibre Future Directions Conference, Feb. 25 - March 1, Geelong, Australia, 2013. **(2013 Jan/Feb)**

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