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DOI: 10.1021/es504164w

84. Temporalization of Peak Electric Generation Particulate Matter Emissions during High Energy Demand Days

Caroline M. Farkas, Michael D. Moeller, Frank A. Felder, Kirk R. Baker, Mark Rodgers, and Annmarie G. Carlton

Environmental Science & Technology 2015 49 (7), 4696-4704

DOI: 10.1021/es5050248

85. Determination of Methanogenic Pathways through Carbon Isotope ($\delta^{13}\text{C}$) Analysis for the Two-Stage Anaerobic Digestion of High-Solids Substrates

Tito Gehring, Johanna Klang, Andrea Niedermayr, Stephan Berzio, Adrian Immenhauser, Michael Klocke, Marc Wichern, and Manfred Lübken
Environmental Science & Technology 2015 49 (7), 4705-4714
DOI: 10.1021/es505665z

86. Effect of Acid-Catalyzed Formation Rates of Benzimidazole-Linked Polymers on Porosity and Selective CO₂ Capture from Gas Mixtures

Suha Altarawneh, Timur İslamoğlu, Ali Kemal Sekizkardes, and Hani M. El-Kaderi
Environmental Science & Technology 2015 49 (7), 4715-4723
DOI: 10.1021/es505760w

87. Impacts of Organic Ligands on Forsterite Reactivity in Supercritical CO₂ Fluids

Quin R. S. Miller, John P. Kaszuba, Herbert T. Schaef, Mark E. Bowden, and Bernard P. McGrail
Environmental Science & Technology 2015 49 (7), 4724-4734
DOI: 10.1021/es506065d

88. Selective Catalytic Reduction Operation with Heavy Fuel Oil: NO_x, NH₃, and Particle Emissions

Kati Lehtoranta, Hannu Vesala, Päivi Koponen, and Satu Korhonen
Environmental Science & Technology 2015 49 (7), 4735-4741
DOI: 10.1021/es506185x

89. Measuring Emissions from Oil and Natural Gas Well Pads Using the Mobile Flux Plane Technique

Chris W. Rella, Tracy R. Tsai, Connor G. Botkin, Eric R. Crosson, and David Steele
Environmental Science & Technology 2015 49 (7), 4742-4748
DOI: 10.1021/acs.est.5b00099

90. Reductions in Indoor Black Carbon Concentrations from Improved Biomass Stoves in Rural India

Omkar S. Patange, Nithya Ramanathan, I. H. Rehman, Sachi Nand Tripathi, Amit Misra, Abhishek Kar, Eric Graham, Lokendra Singh, Ranjit Bahadur, and V. Ramanathan
Environmental Science & Technology 2015 49 (7), 4749-4756
DOI: 10.1021/es506208x

91. Effective Permeabilities of Abandoned Oil and Gas Wells: Analysis of Data from Pennsylvania

Mary Kang, Ejeong Baik, Alana R. Miller, Karl W. Bandilla, and Michael A. Celia
Environmental Science & Technology 2015 49 (7), 4757-4764
DOI: 10.1021/acs.est.5b00132

92. Methane Baseline Concentrations and Sources in Shallow Aquifers from the Shale Gas-Prone Region of the St. Lawrence Lowlands (Quebec, Canada)

Anja Moritz, Jean-Francois Hélie, Daniele L. Pinti, Marie Larocque, Diogo Barnetche, Sophie Retailleau, René Lefebvre, and Yves Gélinas
Environmental Science & Technology 2015 49 (7), 4765-4771
DOI: 10.1021/acs.est.5b00443