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CO₂-Assisted Chemical Flooding for Enhanced Oil Recovery: Effects of Slug Salinity *DOI: 10.1021/acs.energyfuels.8b0036*
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Effect of Fixed and Removable Gas-Injection Patterns on the Expansion of Reaction Zones during Underground Coal Gasification *DOI: 10.1021/acs.energyfuels.8b0044*
Zhangqing Wang, Xiyan Xu, and Yong Cui*

Direct Assessment of Inhibitor and Solvent Effects on the Deposition Mechanism of Asphaltenes in a Brazilian Crude Oil *DOI: 10.1021/acs.energyfuels.8b0045*
Lia Beraldo da Silveira Balestrin, Renata Dias Francisco, Celso Aparecido Bertran, Mateus Borba Cardoso, and Watson Loh*

energy&fuels

JUNE 2019

VOLUME 33 ISSUE 6

ENFUE 33(6) 4683–5788 (2019)

ISSN 0887-0624

Registered in the U.S. Patent and Trademark Office

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DOI: 10.1021/acs.energyfuels.8b0001

ON THE COVER: Real Space Locating Heteroatoms in Polycyclic Aromatic Hydrocarbons. A periodic table of elements was made by nc-AFM as a guide to discriminate common elements like carbon, nitrogen, and sulfur atoms in organic molecules, and specifically, common motifs in petroleum such as dibenzothiophene, pyridine and carbazole. The box size of each element matches the relative size of element as seen by nc-AFM. A CO molecule at the tip apex acts as an extremely sensitive detector for the Pauli repulsion force using a QPlus tuning fork in frequency detection mode. A simple and robust determination of these elements with nc-AFM will help to characterize structures in order to produce cleaner fuels from crude oils. For more information, see “A Guide for AFM Image Analysis to Discriminate Heteroatoms in Aromatic Molecules” by Percy Zahl and Yunlong Zhang. View the article. Cover image by Percy Zahl.

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DOI: 10.1021/acs.energyfuels.9b00039

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DOI: 10.1021/acs.energyfuels.9b00037

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DOI: 10.1021/acs.energyfuels.8b00043

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DOI: 10.1021/acs.energyfuels.9b00200

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DOI: 10.1021/acs.energyfuels.9b00165

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DOI: 10.1021/acs.energyfuels.9b00437

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DOI: 10.1021/acs.energyfuels.9b00486

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DOI: 10.1021/acs.energyfuels.9b00545

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DOI: 10.1021/acs.energyfuels.9b00561

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DOI: 10.1021/acs.energyfuels.9b00626

DOI: 10.1021/acs.energyfuels.9b00773

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DOI: 10.1021/acs.energyfuels.9b00645

DOI: 10.1021/acs.energyfuels.9b00778

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DOI: 10.1021/acs.energyfuels.9b00630

DOI: 10.1021/acs.energyfuels.9b00821

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DOI: 10.1021/acs.energyfuels.9b00673

DOI: 10.1021/acs.energyfuels.9b00815

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DOI: 10.1021/acs.energyfuels.9b00708

DOI: 10.1021/acs.energyfuels.9b00822

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DOI: 10.1021/acs.energyfuels.9b00709

DOI: 10.1021/acs.energyfuels.9b00832

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DOI: 10.1021/acs.energyfuels.9b00715

DOI: 10.1021/acs.energyfuels.9b00854

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DOI: 10.1021/acs.energyfuels.9b00718

DOI: 10.1021/acs.energyfuels.9b00885

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DOI: 10.1021/acs.energyfuels.9b00741

DOI: 10.1021/acs.energyfuels.9b00887

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DOI: 10.1021/acs.energyfuels.9b00773

DOI: 10.1021/acs.energyfuels.9b00778

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DOI: 10.1021/acs.energyfuels.9b00778

DOI: 10.1021/acs.energyfuels.9b00821

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DOI: 10.1021/acs.energyfuels.9b00821

DOI: 10.1021/acs.energyfuels.9b00821

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DOI: 10.1021/acs.energyfuels.9b00815

DOI: 10.1021/acs.energyfuels.9b00815

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DOI: 10.1021/acs.energyfuels.9b00822

DOI: 10.1021/acs.energyfuels.9b00832

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DOI: 10.1021/acs.energyfuels.9b00832

DOI: 10.1021/acs.energyfuels.9b00832

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DOI: 10.1021/acs.energyfuels.9b00854

DOI: 10.1021/acs.energyfuels.9b00854

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DOI: 10.1021/acs.energyfuels.9b00885

DOI: 10.1021/acs.energyfuels.9b00885

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DOI: 10.1021/acs.energyfuels.9b00897

DOI: 10.1021/acs.energyfuels.9b00897

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DOI: 10.1021/acs.energyfuels.9b00909

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DOI: 10.1021/acs.energyfuels.9b00920

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DOI: 10.1021/acs.energyfuels.9b00938

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DOI: 10.1021/acs.energyfuels.9b00939

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DOI: 10.1021/acs.energyfuels.9b00956

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DOI: 10.1021/acs.energyfuels.9b00969

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DOI: 10.1021/acs.energyfuels.9b00993

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DOI: 10.1021/acs.energyfuels.9b00995

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DOI: 10.1021/acs.energyfuels.9b01003

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DOI: 10.1021/acs.energyfuels.9b00622

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DOI: 10.1021/acs.energyfuels.8b04040

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DOI: 10.1021/acs.energyfuels.9b00106

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DOI: 10.1021/acs.energyfuels.9b00158

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DOI: 10.1021/acs.energyfuels.9b00335

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DOI: 10.1021/acs.energyfuels.9b00461

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DOI: 10.1021/acs.energyfuels.9b00749

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DOI: 10.1021/acs.energyfuels.9b00703

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**Formation of NO and N₂O during Raw and Demineralized Biomass Char Combustion**

Burak Ulusoy, Weigang Lin, Oskar Karlström, Songgeng Li, Wenli Song, Peter Glarborg, Kim Dam-Johansen, and Hao Wu*

DOI: 10.1021/acs.energyfuels.9b00622

DOI: 10.1021/acs.energyfuels.9b00703

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DOI: 10.1021/acs.energyfuels.9b00624

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DOI: 10.1021/acs.energyfuels.9b00641

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DOI: 10.1021/acs.energyfuels.9b00663

DOI: 10.1021/acs.energyfuels.9b00747

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DOI: 10.1021/acs.energyfuels.9b00680

DOI: 10.1021/acs.energyfuels.9b00806

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DOI: 10.1021/acs.energyfuels.9b00694

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DOI: 10.1021/acs.energyfuels.9b00866

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DOI: 10.1021/acs.energyfuels.9b00392

DOI: 10.1021/acs.energyfuels.9b00238

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DOI: 10.1021/acs.energyfuels.9b00394

DOI: 10.1021/acs.energyfuels.9b00923

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DOI: 10.1021/acs.energyfuels.9b00395

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DOI: 10.1021/acs.energyfuels.9b00747

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DOI: 10.1021/acs.energyfuels.9b00758

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DOI: 10.1021/acs.energyfuels.9b00806

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DOI: 10.1021/acs.energyfuels.9b00238

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DOI: 10.1021/acs.energyfuels.9b00889

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DOI: 10.1021/acs.energyfuels.9b00894

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DOI: 10.1021/acs.energyfuels.9b00923

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DOI: 10.1021/acs.energyfuels.9b01053

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DOI: 10.1021/acs.energyfuels.9b00646

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DOI: 10.1021/acs.energyfuels.9b00768

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Feng Guo, Ruochen Wu, Larry L. Baxter, and William C. Hecker*

DOI: 10.1021/acs.energyfuels.8b03655

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Kinetics Modeling, Development, and Comparison for the Reaction of Calcium Oxide with Steam
Shiladitya Ghosh, John Kokot-Blamey, Matthew E. Boot-Handford, and Paul S. Fennell*

DOI: 10.1021/acs.energyfuels.8b04383

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Synthesis of Titanium Modified Three-Dimensional KIT-5 Mesoporous Support and Its Application of the Quinoline Hydrodenitrogenation
Qian Meng, Aijun Duan,* Kebin Chi, Zhen Zhao, Jian Liu, Peng Zheng, Bo Wang, Cong Liu, Di Hu, and Yuanzhen Jia

DOI: 10.1021/acs.energyfuels.9b00520

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Experimental Investigation on Pyrolysis of *n*-Decane Initiated by Nitropropane under Supercritical Pressure in a Miniature Tube
Zhenjian Jia, Weixing Zhou,* Wenli Yu, and Zhixiong Han

DOI: 10.1021/acs.energyfuels.9b00593

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Evaluation of Kinetics and Energetics of Thermochemical Fluids for Enhanced Recovery of Heavy Oil and Liquid Condensate
Olalekan S. Alade, Mohamed Mahmoud,* Amjed Hassan, Dhafer Al-Shehri,* Ayman Al-Nakhli, and Mohammed Bataweel

DOI: 10.1021/acs.energyfuels.9b00681

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Impact of Morphological Effects on the Activity and Stability of Tungsten Carbide Catalysts for Dry Methane Reforming
William P. Mounfield III, Aadesh Harale, and Yuryi Román-Leshkov*

DOI: 10.1021/acs.energyfuels.9b01043

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Kinetics of Hydrogenation of Acetic Acid over Supported Platinum Catalyst
Ahmed M. Lawal, Abarasi Hart, Helen Daly, Christopher Hardacre, and Joseph Wood*

DOI: 10.1021/acs.energyfuels.9b01062

Combustion

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Large Eddy Simulation of a Syngas Jet Flame: Effects of Preferential Diffusion and Turbulence–Chemistry Interaction
K. Fukumoto,* C. J. Wang,* and J. X. Wen

DOI: 10.1021/acs.energyfuels.9b00130

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Coupled Effects of Carbon Dioxide and Water Vapor Addition on Soot Formation in Ethylene Diffusion Flames
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DOI: 10.1021/acs.energyfuels.9b00192

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Pressure-Dependent Rate Rules for the Intramolecular H-Shift Reactions of Hydroperoxy-Alkenyl-Peroxy Radicals in Low Temperature
Xiao-Hui Sun, Wen-Gang Zong,* Ze-Rong Li, and Xiang-Yuan Li

DOI: 10.1021/acs.energyfuels.9b00326

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Examining and Modeling Oxygen Uncoupling Kinetics of Cu-Based Oxygen Carriers for Chemical Looping with Oxygen Uncoupling (CLOU) in a Drop Tube Fluidized Bed Reactor
Nicholas C. Means,* Ward A. Burgess, Bret H. Howard, Mark W. Smith, Ping Wang, and Dushyant Shekhawat

DOI: 10.1021/acs.energyfuels.9b00338

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Exploration of the Hysteresis in Speciated Emissions during Transient Gasoline Engine Combustion
David Wilson, Dylan Lehmer, and Casey Allen*

DOI: 10.1021/acs.energyfuels.9b00350

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Experimental Analysis of the Morphology and Nanostructure of Soot Particles for Butanol/Diesel Blends at Different Engine Operating Modes
Puneet Verma, Mohammad Jafari, Yi Guo, Edmund Pickering, Svetlana Stevanovic, Timothy A. Bodisco, Joseph F. S. Fernando, Dmitri Golberg, Peter Brooks, Richard Brown, and Zoran Ristovski*

DOI: 10.1021/acs.energyfuels.9b00368

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Autoignition Comparison of *n*-Dodecane/Benzene and *n*-Dodecane/Toluene Blends in a Constant Volume Combustion Chamber
Dong Han,* Yaozong Duan, and Jiaqi Zhai

DOI: 10.1021/acs.energyfuels.9b00451

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Effects of Bath Gas and NO_x Addition on *n*-Pentane Low-Temperature Oxidation in a Jet-Stirred Reactor
Lorena Marrodán, Yu Song, Marco Lubrano Lavadera, Olivier Herbinet, Mara de Joannon, Yiguang Ju, María U. Alzueta, and Frédérique Battin-Leclerc*

DOI: 10.1021/acs.energyfuels.9b00536

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Ignition Study of an Oxygenated and High-Alkene Light Petroleum Fraction Produced from Automotive Shredder Residues DOI: 10.1021/acs.energyfuels.9b00649 S. Tipler,* C. S. Mergulhão, G. Vanhove, Q. Van Haute, F. Contino, and A. Coussement

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DOI: 10.1021/acs.energyfuels.9b00602
Experimental Study on the Effects of Spray–Wall Interaction on Partially Premixed Combustion and Engine Emissions
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DOI: 10.1021/acs.energyfuels.9b0065

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DOI: 10.1021/acs.energyfuels.9b00660
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Ying Wang,* Chunlan Guo, Peng Wang, and Dongxing Wang

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DOI: 10.1021/acs.energyfuels.1c02033 | Energy Fuels 2021, 35(12), 9479–9490

E7322

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DOI: 10.1021/acs.energyfuels.9b00904

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DOI: 10.1021/acs.energyfuels.9b00650
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DOI: 10.1021/acs.energyfuels.9b00347

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DOI: 10.1002/aic
Surface-Modified Multi-lumen Tubular Membranes for SAGD-Produced Water Treatment
Charbel Atallah, Saviz Mortazavi*, André Y. Tremblay, and Alex Deiron

DOI: 10.1021/acs.energyfuels.9b00585

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DOI: 10.1021/acs.energyfuels.9b01046

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DOI: 10.1021/acs.energyfuels.9b00506