



Anthony Kavscek

Keleen and Carlton Beal Professor of Petroleum Engineering and Senior Fellow at the Precourt Institute for Energy
Energy Resources Engineering

Bio

ACADEMIC APPOINTMENTS

- Professor, Energy Resources Engineering
- Affiliate, Precourt Institute for Energy

ADMINISTRATIVE APPOINTMENTS

- Chair, Energy Resources Engineering, (2012-2018)
- Professor of Energy Resources Engineering, Stanford University, (2010- present)
- Associate Professor of Energy Resources Engineering, Stanford University, (2006-2010)
- Associate Professor of Petroleum Engineering, Stanford University, (2003-2006)
- Assistant Professor of Petroleum Engineering, Stanford University, (1996-2003)

HONORS AND AWARDS

- Outstanding Technical Editor, SPE Editorial Review Committee, Society of Petroleum Engineers (2019, 2015-2017, 2004, 2002, 2001)
- Distinguished Member, Society of Petroleum Engineers (2015)
- Lester C Uren Award for Distinguished Achievement, Society of Petroleum Engineers (2015)
- Distinguished Lecturer. Carbon Sequestration, Global Climate and Energy Project, Stanford University (2008)
- Outstanding Review Chair, SPE Editorial Review Committee, Stanford University (2007)
- SPE Distinguished Achievement Award for Petroleum Engineering Faculty, Stanford University (2006)
- SPE Western North America Region Technical Achievement Award, Society of Petroleum Engineers (2005)
- Senior Scientist Fellowship, Summer, ENSAM - University of Bordeaux, France (2000)
- School of Earth Sciences Award for Excellence in Teaching, Stanford University (1997-1998)
- Tau Beta Pi, Univ. of Washington (1988)
- Jenkins Shackelford Scholar, Western Washington University (1984-1988)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Chair of Energy Resources Engineering, Stanford University (2012 - 2018)
- Breadth Governance Board, Ways of Thinking and Doing, Stanford University (2012 - 2014)
- Codirector of SCCS, Stanford Center for Carbon Storage Affiliates, Stanford University (2011 - present)
- Chair, Faculty Search Committee Energy Resources Engineering, Stanford University (2011 - 2011)
- Invited Speaker, China University of Petroleum, Beijing China (2011 - 2011)

- Technical Program Committee, SPE Western Regional Meeting, Society of Petroleum Engineers (2011 - 2011)
- Cochair of Steering Committee, SPE Forum, Digital Rocks: Realizing Step Change in the Value of Laboratory Data (2010 - 2011)
- Invited Speaker: Department of Chemical Engineering, University of California at Santa Barbara, et al. (2010 - 2010)
- Technical Program Committee, SPE Western Regional Meeting, Society of Petroleum Engineers (2010 - 2010)
- Invited Speaker, Department of Petroleum and Geosystems Engineering, University of Texas and Chemical Engineering and Materials Science, University of Southern California (2009 - 2009)
- Executive Editor, SPE Journal, Society of Petroleum Engineers (2009 - 2012)
- Associate Chairman, Energy Resources Engineering, Stanford University (2008 - 2011)
- Chair, Faculty Search Committee, Energy Resources Engineering, Stanford University (2008 - 2008)
- Marshall, 117th Commencement June 15, Stanford University (2008 - 2008)
- Technical Program Committee, SPE Western Regional Meeting, Society of Petroleum Engineers (2008 - 2009)
- Organizing Committee, SPE Forum, Maximizing Oil Recovery in the 21st Century, Colorado Springs, CO., Society of Petroleum Engineers (2008 - 2009)
- Society of Petroleum Engineers, Books Development Committee, Society of Petroleum Engineers (2008 - 2009)
- Technical Program Committee, SPE Western Regional Meeting, Society of Petroleum Engineers (2007 - 2008)
- Member, Faculty Search Committee, Energy Resources Engineering, Stanford University (2007 - 2007)
- SPE Publications Coordinating Committee, Society of Petroleum Engineers (2007 - 2008)
- Steering Committee, 6th Annual Conference on Carbon Capture and Sequestration, Pittsburg, PA, Conference on Carbon Capture and Sequestration (2007 - 2007)
- Editorial Board, SPE Reservoir Evaluation & Engineering, Society of Petroleum Engineers (2006 - 2009)
- Member, American Geophysical Union (AGU), American Geophysical Union (2006 - present)
- Member, Energy Committee, Woods Institute for the Environment at Stanford University (2005 - present)
- Chair, Energy Resources Engineering Admissions Committee, Stanford University (2005 - present)
- Chair of Steering Committee, SPE Forum, Enhanced Oil Recovery: What's Next?, Society of Petroleum Engineers (2005 - 2006)
- Invited Speaker, BP Anchorage, AK, and ExxonMobil Research and Engineering Co. Clinton, NJ (2005 - 2005)
- Steering Committee Member, 4th Annual Conference on Carbon Capture and Sequestration, Alexandria, VA, Conference on Carbon Capture and Sequestration (2005 - 2005)
- SPE Western Regional Meeting Program Committee and Session Chair, Society of Petroleum Engineers (2005 - 2005)
- Freshman Advisor, Stanford University (2004 - 2008)
- Marshall, 113th Commencement, June 13, Stanford University (2004 - 2004)
- Invited Speaker: Petroleum Technology Transfer Council, SPE Advanced Technology Workshop on Reservoir Physics, Gordon Research Conference--Flow and Transport in Permeable Media, Society of Petroleum Engineers (2004 - 2004)
- Journal of Petroleum Technology, Editorial Committee, Journal of Petroleum Technology (2004 - present)
- Chair, SPE Continuing Education Committee, Society of Petroleum Engineers (2004 - 2005)
- Invited Speaker: Department of Chemical Engineering, University of California, Berkeley., University of California, Berkeley, PetroChina, Beijing China, Aera Energy LLC, Bakersfield, CA (2003 - 2003)
- Organizer, ACS Award in Colloid Chemistry Symposium Honoring Clayton J. Radke, American Chemical Society (2003 - 2003)
- Editor of a Special Issue of the Journal of Petroleum Science and Engineering honoring Professor W. E. Brigham, Journal of Petroleum Science and Engineering (2003 - 2003)
- Member, Faculty Search Committee, Petroleum Engineering, Stanford University (2002 - 2003)
- Invited Speaker: Department of Civil Engineering, University of California, Berkeley, Huainan Institute of Technology, Anhui China, University of California, Berkeley and Huainan Institute of Technology, Anhui China (2002 - 2002)
- Session Chairman: SPE/DOE Improved Oil Recovery Symposium, Society of Petroleum Engineers and Department of Energy (2002 - 2002)
- Invited Speaker, Petroleum Technology Transfer Council (2001 - 2001)

- Invited Panelist, DOE Multiscale Reservoir Investigation Symposium, Organizer SPE Western Region Student Paper Contest, Department of Energy and Society of Petroleum Engineers (2001 - 2001)
- Faculty Search Committee, Geological and Environmental Sciences, Stanford University (2000 - 2000)
- Member, Earth Systems Advisory Committee, Stanford University (2000 - present)
- Invited Speaker, Chevron Petroleum Technology Co. (2000 - 2000)
- Technical Editor, SPE Reservoir Engineering and Evaluation (2000 - 2006)
- Member, Continuing Education Committee, SPE, Society of Petroleum Engineers (2000 - present)
- Technical Program Committee/Session Chairman: SPE/DOE Improved Oil Recovery Symposium, SPE Western Regional Meeting, Society of Petroleum Engineers and Department of Energy (2000 - 2000)
- Instructor, Stanford Science and Engineering Academy (1999 - 1999)
- Speaker, The President's Fund Dinner, Stanford University (1999 - 1999)
- Faculty Advisor, SPE student chapter, Stanford University (1998 - present)
- Member, Petroleum Engineering Department Admissions Committee, Stanford University (1998 - 2002)
- Invited speaker, Mobil Technology Company, Imperial Oil Resources (1998 - 1998)
- Session Chairman: SPE/DOE 11th Symposium on Improved Oil Recovery, 7th UNITAR Conference on Heavy Crude Oil, Society of Petroleum Engineers and Department of Energy (1998 - 1998)
- Freshman and Sophomore advisor, Stanford University (1997 - 2003)
- Organizing Committee: Stanford and Heriot Watt University Forum on Reservoir Description and Modeling, Stanford University and Heriot Watt University (1997 - 1997)
- Member, American Chemical Society (1997 - present)
- Chairman, Petroleum Engineering Department Safety Committee, Stanford University (1996 - 2008)
- Member, School of Earth Sciences Faculty Library Committee, Stanford University (1996 - present)
- Member, Society of Petroleum Engineers (1994 - present)

PROFESSIONAL EDUCATION

- Ph.D., Univ. of California, Berkeley Chemical Engineering (1994)
- B.S., Univ. of Washington, Chemical Engineering (1989)

LINKS

- SUPRI-A: <http://pangea.stanford.edu/ERE/research/supria/index.php>
- Google Scholar Profile: <https://scholar.google.com/citations?hl=en&user=CQ1koU8AAAAJ>
- Center for Mechanistic Control of Unconventional Formations (CMC-UF): <https://efrc-shale.stanford.edu>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Research

I am interested in the recovery of unconventional hydrocarbon resources and mitigating carbon emissions from fossil fuels via geological sequestration of greenhouse gases. My research group and I examine the physics of flow through porous media at length scales that vary from the pore to the laboratory to the reservoir.

The organizing themes are flow imaging to delineate the mechanisms of multiphase flow (oil, water, and gas) in porous media and the synthesis of models from experimental, theoretical, and field data. In all of our work, physical observations, obtained mainly from laboratory and field measurements, are interwoven with theory.

Teaching

My teaching interests center broadly around education of students to meet the energy challenges that we will face this century. I teach undergraduate courses that examine the interplay of energy use and environmental issues including renewable energy resources and sustainability. At the graduate level, I offer classes on enhanced oil recovery and the thermodynamics of hydrocarbon mixtures.

Professional Activities

Member, American Geophysical Union (2006); Editorial Board, SPE Reservoir Evaluation and Engineering (2006-present); Society of Petroleum Engineers (SPE) Distinguished Achievement Award for Petroleum Engineering Faculty (2006); School of Earth Sciences Award for Excellence in Teaching (1998); Earth Systems Program Executive Committee (2002-present); Woods Institute for Environment Energy Committee (2005-present); SPE Continuing Education Committee (2000-present, chair 2004-05); steering committee chair, SPE Forum, Enhanced Oil Recovery: What's Next? (2005-06); Editorial Board of the Journal of Petroleum Technology (2004-present) and SPE Reservoir Engineering and Evaluation (2006-present); member, Society of Petroleum Engineers, American Geophysical Union, and the American Chemical Society.

Teaching

COURSES

2020-21

- Busting Energy Myths: ENERGY 30N (Aut)
- Fundamentals of Energy Processes: EE 293B, ENERGY 293B (Win)
- Fundamentals of Renewable Power: EARTHSYS 102, ENERGY 102 (Spr)
- Thermodynamics of Equilibria: ENERGY 251 (Aut)

2019-20

- Energy and the Environment: EARTHSYS 101, ENERGY 101 (Win)
- Fundamentals of Energy Processes: EE 293B, ENERGY 293B (Win)
- Fundamentals of Renewable Power: EARTHSYS 102, ENERGY 102 (Spr)
- Senior Project and Seminar in Energy Resources: ENERGY 199 (Spr)
- Thermodynamics of Equilibria: ENERGY 251 (Aut)

2018-19

- ERE Master's Graduate Seminar: ENERGY 351 (Spr)
- ERE PhD Graduate Seminar: ENERGY 352 (Spr)
- Energy and the Environment: EARTHSYS 101, ENERGY 101 (Win)
- Fundamentals of Energy Processes: EE 293B, ENERGY 293B (Win)
- Fundamentals of Renewable Power: EARTHSYS 102, ENERGY 102 (Spr)
- Senior Project and Seminar in Energy Resources: ENERGY 199 (Spr)
- Thermodynamics of Equilibria: ENERGY 251 (Aut)

2017-18

- Energy and the Environment: EARTHSYS 101, ENERGY 101 (Win)
- Fundamentals of Energy Processes: EE 293B, ENERGY 293B (Aut)
- Fundamentals of Renewable Power: EARTHSYS 102, ENERGY 102 (Spr)
- Senior Project and Seminar in Energy Resources: ENERGY 199 (Spr)
- Thermodynamics of Equilibria: ENERGY 251 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Yaxin Li

Postdoctoral Faculty Sponsor

Asli Gundogar, Arash Kamali Asl

Doctoral Dissertation Advisor (AC)

TALAL AL SHAFLOOT, Laura Froute

Master's Program Advisor

Yusef Ferhani

Doctoral Dissertation Co-Advisor (AC)

Jie Yang

Doctoral (Program)

Albert Liu, Manju Murugesu, Yulman Perez Claro

Publications

PUBLICATIONS

- **Mechanistic foam flow model with variable flowing foam fraction and its implementation using automatic differentiation** *ADVANCES IN WATER RESOURCES*
Almajid, M. M., Wong, Z., Kavscek, A. R.
2021; 150
- **Phase-field modeling of rate-dependent fluid-driven fracture initiation and propagation** *INTERNATIONAL JOURNAL FOR NUMERICAL AND ANALYTICAL METHODS IN GEOMECHANICS*
Yang, J., Tchelepi, H. A., Kavscek, A. R.
2021
- **A Critical Review of the Physicochemical Impacts of Water Chemistry on Shale in Hydraulic Fracturing Systems.** *Environmental science & technology*
Khan, H. J., Spielman-Sun, E., Jew, A. D., Bargar, J., Kavscek, A., Druhan, J. L.
2021
- **RockFlow: Fast Generation of Synthetic Source Rock Images Using Generative Flow Models** *ENERGIES*
Anderson, T. I., Guan, K. M., Vega, B., Aryana, S. A., Kavscek, A. R.
2020; 13 (24)
- **Multimodal imaging and machine learning to enhance microscope images of shale** *COMPUTERS & GEOSCIENCES*
Anderson, T., Vega, B., Kavscek, A. R.
2020; 145
- **A Critical Review of the Role of Thin Liquid Films for Modified Salinity Brine Recovery Processes** *CURRENT OPINION IN COLLOID & INTERFACE SCIENCE*
Guo, H., Nazari, N., Esmailzadeh, S., Kavscek, A. R.
2020; 50
- **Multiscale study of CO₂ impact on fluid transport and carbonate dissolution in Utica and Eagle Ford shale** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*
Elkady, Y., Kavscek, A. R.
2020; 195
- **Three-Dimensional Imaging and Quantification of Gas Storativity in Nanoporous Media via X-rays Computed Tomography** *ENERGIES*
Elkady, Y., Lyu, Y., Jessen, K., Kavscek, A. R.

2020; 13 (23)

- **Transport Simulations on Scanning Transmission Electron Microscope Images of Nanoporous Shale** *ENERGIES*
Frouté, L., Wang, Y., McKinzie, J., Aryana, S. A., Kavscek, A. R.
2020; 13 (24)
- **Application of Digital Volume Correlation to X-ray Computed Tomography Images of Shale** *ENERGY & FUELS*
Kim, T., Yun, W., Kavscek, A. R.
2020; 34 (11): 13636–49
- **Pore-network modeling of single-phase reactive transport and dissolution pattern evaluation** *ADVANCES IN WATER RESOURCES*
Esteves, B. F., Lage, P. C., Couto, P., Kavscek, A. R.
2020; 145
- **Effect of Pressure on Crude-Oil Kinetics During In Situ Combustion** *ENERGY & FUELS*
Yoo, K., Trujillo Portillo, M., Patino Ramirez, C., Sampaio, L., Gerritsen, M., Kavscek, A. R.
2020; 34 (10): 12103–17
- **Deep learning for automated characterization of pore-scale wettability** *ADVANCES IN WATER RESOURCES*
Yun, W., Liu, Y., Kavscek, A. R.
2020; 144
- **Population-balance modeling of CO₂ foam for CCUS using nanoparticles** *JOURNAL OF NATURAL GAS SCIENCE AND ENGINEERING*
Eide, O., Ferno, M., Bryant, S., Kavscek, A., Gauteplass, J.
2020; 80
- **Permeability and Porosity Evolution of Organic-Rich Shales from the Green River Formation as a Result of Maturation** *SPE JOURNAL*
Kim, T., Ross, C. M., Guan, K. M., Burnham, A. K., Kavscek, A. R.
2020; 25 (3): 1377–1405
- **Thermal Imaging To Visualize and Characterize Combustion Fronts in Porous Media** *INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH*
Yoo, K., Sampaio, L., Amanam, U., Gerritsen, M., Kavscek, A. R.
2020; 59 (5): 2181–91
- **Spontaneous fingering between miscible fluids** *COLLOIDS AND SURFACES A-PHYSICO-CHEMICAL AND ENGINEERING ASPECTS*
Song, W., Ramesh, N. N., Kavscek, A. R.
2020; 584
- **Investigation of the Effects of Select Metal Nanoparticles on Heavy Oil Combustion in Porous Media** *ENERGY & FUELS*
Amanam, U. U., Yoo, K., Castanier, L., Kavscek, A. R.
2020; 34 (1): 130–41
- **Pore Network Investigation of Trapped Gas and Foam Generation Mechanisms** *TRANSPORT IN POROUS MEDIA*
Almajid, M. M., Kavscek, A. R.
2020; 131 (1): 289–313
- **Nanoparticle delivery to porous media via emulsions and thermally induced phase inversion** *COLLOIDS AND SURFACES A-PHYSICO-CHEMICAL AND ENGINEERING ASPECTS*
Amanam, U. U., Zeng, H., Kavscek, A. R.
2019; 581
- **Modeling Steady-State Foam Flow: Hysteresis and Backward Front Movement** *ENERGY & FUELS*
Almajid, M. M., Nazari, N., Kavscek, A. R.
2019; 33 (11): 11353–63
- **Spontaneous clay Pickering emulsification** *COLLOIDS AND SURFACES A-PHYSICO-CHEMICAL AND ENGINEERING ASPECTS*
Song, W., Kavscek, A. R.
2019; 577: 158–66
- **The diffusion of water through oil contributes to spontaneous emulsification during low salinity waterflooding** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*

-
- Aldousary, S., Kavscek, A. R.
2019; 179: 606–14
- **Doctrines and realities in viscous and heavy-oil reservoir engineering** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*
Vittoratos, E., Kavscek, A. R.
2019; 178: 1164–77
 - **Investigation of the effects of ions on short-range non-DLVO forces at the calcite/brine interface and implications for low salinity oil-recovery processes.** *Journal of colloid and interface science*
Guo, H., Kavscek, A. R.
2019; 552: 295–311
 - **Recovery efficiency of a 28 degrees API crude-oil system as a function of voidage replacement ratio** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*
Kim, T., Vittoratos, E., Kavscek, A. R.
2019; 175: 1063–87
 - **Influence of Microcracks on Flow and Storage Capacities of Gas Shales at Core Scale** *TRANSPORT IN POROUS MEDIA*
Alnoaimi, K. R., Kavscek, A. R.
2019; 127 (1): 53–84
 - **The Effect of Voidage-Displacement Ratio on Critical Gas Saturation** *SPE JOURNAL*
Kim, T., Kavscek, A. R.
2019; 24 (1): 178–99
 - **A systematic study of internal gas generation in shale source rocks using analog experiments** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*
Vega, B., Kavscek, A. R.
2019; 173: 209–21
 - **Pore-scale visualization and characterization of viscous dissipation in porous media.** *Journal of colloid and interface science*
Roman, S. n., Soulaine, C. n., Kavscek, A. R.
2019; 558: 269–79
 - **Mechanisms of multiphase reactive flow using biogenically calcite-functionalized micromodels** *LAB ON A CHIP*
Song, W., Ogunbanwo, F., Steinsbo, M., Ferno, M. A., Kavscek, A. R.
2018; 18 (24): 3881–91
 - **Mechanisms of multiphase reactive flow using biogenically calcite-functionalized micromodels.** *Lab on a chip*
Song, W., Ogunbanwo, F., Steinsbo, M., Ferno, M. A., Kavscek, A. R.
2018
 - **Pore-scale modelling of multiphase reactive flow: application to mineral dissolution with production of CO₂** *JOURNAL OF FLUID MECHANICS*
Soulaine, C., Roman, S., Kavscek, A., Tchelepi, H. A.
2018; 855: 616–45
 - **Pulsating linear in situ combustion: why do we often observe oscillatory behavior?** *COMPUTATIONAL GEOSCIENCES*
Bazargan, M., Kavscek, A. R.
2018; 22 (4): 1115–34
 - **An experimental platform for triaxial high-pressure/high-temperature testing of rocks using computed tomography** *REVIEW OF SCIENTIFIC INSTRUMENTS*
Glatz, G., Lapene, A., Castanier, L. M., Kavscek, A. R.
2018; 89 (4): 045101
 - **An optimization algorithm for evaluation of kinetic parameters for crude oil combustion** *Journal of Petroleum Science and Engineering*
Koh Yoo, K. H., Sampaio, L., Gerritsen, M., Kavscek, A.
2018; 169: 241-257
 - **Effects of Image Resolution on Sandstone Porosity and Permeability as Obtained from X-Ray Microscopy** *Transport in Porous Media*
Guan, K. M., et al
2018
-

- **Determination of pore-scale hydrate phase equilibria in sediments using lab-on-a-chip technology** *LAB ON A CHIP*
Almenningen, S., Flatlandsmo, J., Kovscek, A. R., Ersland, G., Ferno, M. A.
2017; 17 (23): 4070–76
- **Measurements and simulation of liquid films during drainage displacements and snap-off in constricted capillary tubes** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Roman, S., Abu-Al-Saud, M. O., Tokunaga, T., Wan, J., Kovscek, A. R., Tchelepi, H. A.
2017; 507: 279–89
- **Experimental investigation and Grand Canonical Monte Carlo simulation of gas shale adsorption from the macro to the nano scale** *JOURNAL OF NATURAL GAS SCIENCE AND ENGINEERING*
Aljamaan, H., Al Ismail, M., Kovscek, A. R.
2017; 48: 119–37
- **Multiscale Imaging of Gas Storage in Shales** *SPE JOURNAL*
Aljamaan, H., Ross, C. M., Kovscek, A. R.
2017; 22 (6): 1760–77
- **NonArrhenius kinetics for reactive transport simulations of in situ combustion** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*
Bazargan, M., Kovscek, A. R.
2017; 157: 570–80
- **Creation of a dual-porosity and dual-depth micromodel for the study of multiphase flow in complex porous media** *LAB ON A CHIP*
Yun, W., Ross, C. M., Roman, S., Kovscek, A. R.
2017; 17 (8): 1462-1474
- **Analysis of the effects of copper nanoparticles on in-situ combustion of extra heavy-crude oil** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*
Amanam, U. U., Kovscek, A. R.
2017; 152: 406-415
- **CO2 Storage and Flow Capacity Measurements on Idealized Shales from Dynamic Breakthrough Experiments** *ENERGY & FUELS*
Aljamaan, H., Holmes, R., Vishal, V., Haghpanah, R., Wilcox, J., Kovscek, A. R.
2017; 31 (2): 1193-1207
- **Multiscale pore structure characterization of middle east carbonates** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*
Gundogar, A. S., Ross, C. M., Akin, S., Kovscek, A. R.
2016; 146: 570-583
- **In-Situ Visualization of Multidimensional Imbibition in Dual-Porosity Carbonates** *SPE JOURNAL*
Alshehri, A. J., Kovscek, A. R.
2016; 21 (5): 1631-1642
- **Pore-level hydrate formation mechanisms using realistic rock structures in high-pressure silicon micromodels** *INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL*
Hauge, L. P., Gauteplass, J., Hoyland, M. D., Ersland, G., Kovscek, A., Ferno, M. A.
2016; 53: 178-186
- **Visualization and Quantification of Thermally Induced Porosity Alteration of Immature Source Rock Using X-ray Computed Tomography** *ENERGY & FUELS*
Glatz, G., Castanier, L. M., Kovscek, A. R.
2016; 30 (10): 8141-8149
- **Particle velocimetry analysis of immiscible two-phase flow in micromodels** *ADVANCES IN WATER RESOURCES*
Roman, S., Soulaire, C., Abu ALSaud, M., Kovscek, A., Tchelepi, H.
2016; 95: 199-211
- **Direct visualization of pore-scale fines migration and formation damage during low-salinity waterflooding** *JOURNAL OF NATURAL GAS SCIENCE AND ENGINEERING*
Song, W., Kovscek, A. R.
2016; 34: 1276-1283

- **An Experimental Investigation of Viscous-Oil Recovery Efficiency as a Function of Voidage-Replacement Ratio** *SPE JOURNAL*
Kim, T. W., VITTORATOS, E., Kavscek, A. R.
2016; 21 (4): 1236-1253
- **Experimental Study of Foam Generation, Sweep Efficiency, and Flow in a Fracture Network** *SPE JOURNAL*
Ferno, M. A., Gauteplass, J., Pancharoen, M., Haugen, A., Graue, A., Kavscek, A. R., Hirasaki, G.
2016; 21 (4): 1140-1150
- **Understanding the role of brine ionic composition on oil recovery by assessment of wettability from colloidal forces** *ADVANCES IN COLLOID AND INTERFACE SCIENCE*
Alshakhs, M. J., Kavscek, A. R.
2016; 233: 126-138
- **Pore-level mechanics of foam generation and coalescence in the presence of oil** *ADVANCES IN COLLOID AND INTERFACE SCIENCE*
Almajid, M. M., Kavscek, A. R.
2016; 233: 65-82
- **Characterization and Measurement of Multiscale Gas Transport in Shale-Core Samples** *SPE JOURNAL*
Alnoaimi, K. R., Duchateau, C., Kavscek, A. R.
2016; 21 (2): 573-588
- **Characterization of scalar mixing in dense gaseous jets using X-ray computed tomography** *EXPERIMENTS IN FLUIDS*
Dunmon, J., Sobhani, S., Kim, T. W., Kavscek, A., Ihme, M.
2015; 56 (10)
- **Functionalization of micromodels with kaolinite for investigation of low salinity oil-recovery processes. Lab on a chip**
Song, W., Kavscek, A. R.
2015; 15 (16): 3314-3325
- **Imaging-Based Characterization of Calcite-Filled Fractures and Porosity in Shales** *SPE JOURNAL*
Vega, B., Ross, C. M., Kavscek, A. R.
2015; 20 (4): 810-823
- **Microvisual investigation of polymer retention on the homogeneous pore network of a micromodel** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*
Yun, W., Kavscek, A. R.
2015; 128: 115-127
- **Pore-level foam generation and flow for mobility control in fractured systems** *COLLOIDS AND SURFACES A-PHYSICO-CHEMICAL AND ENGINEERING ASPECTS*
Gauteplass, J., Chaudhary, K., Kavscek, A. R., Ferno, M. A.
2015; 468: 184-192
- **A Reaction Model-Free Approach for In Situ Combustion Calculations: 1-Kinetics Prediction** *TRANSPORT IN POROUS MEDIA*
Bazargan, M., Kavscek, A. R.
2015; 107 (2): 507-525
- **An experimental investigation of the in-situ combustion behavior of Karamay crude oil** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*
Zhao, R., Chen, Y., Huan, R., Castanier, L. M., Kavscek, A. R.
2015; 127: 82-92
- **Kinetics Oxidation of Heavy Oil. 2. Application of Genetic Algorithm for Evaluation of Kinetic Parameters** *ENERGY & FUELS*
Lapene, A., Debenest, G., Quintard, M., Castanier, L. M., Gerritsen, M. G., Kavscek, A. R.
2015; 29 (2): 1119-1129
- **Functionalization of micromodels with kaolinite for investigation of low salinity oil-recovery processes** *LAB ON A CHIP*
Song, W., Kavscek, A. R.
2015; 15 (16): 3314-3325
- **Gas Sorption and the Consequent Volumetric and Permeability Change of Coal I: Experimental** *TRANSPORT IN POROUS MEDIA*

- Lin, W., Kavscek, A. R.
2014; 105 (2): 371-389
- **Gas Sorption and the Consequent Volumetric and Permeability Change of Coal II: Numerical Modeling** *TRANSPORT IN POROUS MEDIA*
Lin, W., Kavscek, A. R.
2014; 105 (1): 23-42
 - **Fines migration and compaction in diatomaceous rocks** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*
Lagasca, J. R., Kavscek, A. R.
2014; 122: 108-118
 - **Klinkenberg effect on predicting and measuring helium permeability in gas shales** *INTERNATIONAL JOURNAL OF COAL GEOLOGY*
Firouzi, M., Alnoaimi, K., Kavscek, A., Wilcox, J.
2014; 123: 62-68
 - **Consistency Measures for Isoconversional Interpretation of In-Situ Combustion Reaction Kinetics** *ENERGY & FUELS*
Chen, B., Castanier, L. M., Kavscek, A. R.
2014; 28 (2): 868-876
 - **CT Imaging of Low-Permeability, Dual-Porosity Systems Using High X-ray Contrast Gas** *Transport in Porous Media*
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