Kristian Jessen – Curriculum Vitae

Associate Professor
Mork Family Department of Chemical Engineering and Materials Science
Petroleum Engineering Program
University of Southern California
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Research Interests:

My research activities combine modeling, simulation and experimental work to explain and understand the fundamentals of multiphase multicomponent flow, sorption and mass transfer in porous materials. My goal is to advance the fundamental knowledge of these complex processes in the context of enhanced oil and gas recovery from conventional and unconventional resources, and carbon sequestration in geological formations.

Education:

1997-2000	Ph.D. in Chemical Engineering, Technical University of Denmark. "Effective Algorithms for the Study of Miscible Gas Injection Processes". Advisors: Prof. Erling H. Stenby and Associate Prof. Michael L. Michelsen.
1994-1996	MSc. in Chemical Engineering, Technical University of Denmark. "Membrane reactors: dusty gas modeling of flow and transport in annular membrane reactors". Advisor: Associate Prof. Michael L. Michelsen.

Professional Experience:

2012-	Associate Professor, University of Southern California Mork Family Department of Chemical Engineering and Materials Science
2006-2012	Assistant Professor, University of Southern California Mork Family Department of Chemical Engineering and Materials Science
2002-2006	Acting Assistant Professor and Research Associate, Stanford University Department of Petroleum Engineering
2001-2002	Postdoctoral Research Fellow, Stanford University Department of Petroleum Engineering
2001-	Co-founder of Tie-Line Technology (www.tie-tech.com)

Honors and Awards:

- Orange County Engineering Council (OCEC), Outstanding Engineering Educator Award, February 2014.
- Member of the Russian Academy of Natural Sciences (US Section), September 1013
- Outstanding Faculty Award from the Western North America Society of Petroleum Engineers Council, May 2011.
- Outstanding Associate Editor Award: SPE Journal, Society of Petroleum Engineers, September 2010.
- Outstanding Technical Editor Award: SPE Reservoir Evaluation and Engineering, Society of Petroleum Engineers, November 2007.

Professional Activities:

Affiliations:

Society of Petroleum Engineers (SPE),
American Chemical Society (ACS)
American Institute of Chemical Engineers (AiChE)

Editorial and advisory roles/committees:

2006-2009	Society of Petroleum Engineers Continuing Education Committee.
2008, 2014	Technical program committee, SPE Western Regional Meeting.
2008,10,14	Associate Editor: Journal of Petroleum Science and Engineering (JPSE).
2009-2013	Associate Editor: Society of Petroleum Engineers Journal (SPEJ).
2011	Technical review committee, Research Partnership to Secure Energy of America (RPSEA), Unconventional program

Technical reviewer:

Nature Communications, Fluid Phase Equilibria, Transport in Porous Media, Computational Geosciences, Water Resources Research, Advances in Water Resources, Mathematical Geology, SPE Journal, SPE Reservoir Evaluation and Engineering, Journal of Petroleum Science and Engineering, International Journal of Greenhouse Gas Control.

Other activities:

- Faculty advisor for the Phi-Epsilon-Tau honor society at USC.
- Technical Program Committee: SPE Western Regional Meeting, 2010, 2014.
- Technical Session Chair: SPE Western Regional Meeting, 2009, SPE Reservoir Simulation Symposium, 2015.

Teaching and Advising:

Courses taught:

University of Southern California

Fa06-14	Introduction to transport processes in porous media - PTE463/411
Sp08-14	Advanced phase behavior of petroleum reservoir fluids - PTE511
Fa08, Sp11	Gas injection processes: Analytical solutions and analysis - PTE512
Fa13	Fluid Flow and Transport Processes in Porous Media - PTE 582

Graduate students supervised:

2006-2010	Reza Rastegar, PhD in PTE (now with Oxy in Long Beach)
2008-2010	Marjan Jamshidi, MS in PTE (now with Conoco-Phillips) Winner of the 2010 SPE western regional student paper contest (MS division) and 3rd place winner the SPE International student paper competition in Florence, Italy, 2010.
2006-2011	Dalad Nattwongasem, PhD in PTE (now with Chevron in Bangkok, Thailand)
2006-2011	Zhenzhou (Bobby) Liu, PhD in ChE. Co-advised with T. Tsotsis (Now with Dow Chemicals).
2008-2013	Mohammad Javaheri, PhD in PTE (Now with Chevron in Houston).
2008-2013	Junyi (Arthur), PhD in ChE. Co-advised with T. Tsotsis. (Now with Energy Corporation of America)

2009-2013	Mohammad Evazi, PhD in PTE. (Now with Oxy in Bakersfield)
2009-2014	Hasan Shojai, PhD in PTE. (Now with MicroSeismic, Houston). Winner of the 2014 SPE western regional student paper contest (PhD division)
2011-2014	Shahram Nia Farhadi, PhD in PTE. (Now with OXY in Bakersfield)
2009-	Basabdatta (Mini), PhD in ChE, Co-advised with T. Tsotsis.
2009-	Yu Wang, PhD in ChE. Co-advised with T. Tsotsis.
2011-	Devang Dasani, PhD in ChE. Co-advised with T. Tsotsis.
2012-	Fahad Al-Gahnem, PhD in PTE.
2012-	Marjan Sherafati, PhD in PTE. Winner of the 2014 SPE western regional student paper contest (MS division)
2014-	Mehdi Mollanouri, MS in PTE

Funding:

Current projects:

- Department of Energy, Basic Energy Sciences, EFRC: Center for Geological Storage of CO_2. PI for subcontract to University of Illinois at Urbana Champaign. $825K, August 2014-September 2018.
- Sothern California Edison $140K (PI): "Impact of Hydrogen Concentrations in Subsurface Storage of Natural Gas", June 2014-July 2015.
- RPSEA/DOE $2.23M (PI): "Water Handling and Enhanced Productivity from Gas Shales", August 2013 – August 2015.

Past projects:

- $60K (PI), CiSoft (USC-Chevron Center of Excellence): "Control of Displacement Behavior in Porous Materials", Sept. 2006 - Dec. 2008.
- $265K (PI), ENI S.p.A: "Delumping for Integrated Management of Reservoir and Downstream Processes", Aug. 2008 - Aug 2010.
- $450K (co-PI share), Global Climate and Energy Project, Stanford: "Collaborative Research on Carbon Sequestration in Saline Aquifers in China", Sept. 2009 – Aug. 2013.
- $934K (PI), Energy Corporation of America: "Investigation of Improved Productivity from Tight Gas Shales: A Fundamental Investigation Toward Enhanced Engineering Solutions", Sept. 2008 – Sept. 2013.
- $300K (PI), Occidental, "Reservoir Characterization and Performance Forecasting", September 2011 - September 2013.

Publications:

Book Chapters (B)

B1: Orr, F.M. Jr., and Jessen, K. "Phase Diagrams", Chapter 8 of Petroleum Engineering Handbook Vol. 1, Society of Petroleum Engineers, 2006, ISBN: 978-1-55563-108-6.

B2: Orr, F.M. Jr. and Jessen, K., Chapter 7+8 of "Analytical Theory of Gas Injection Processes", Tie-Line Publications, Denmark, 2007, ISBN: 87-989961-2-5.

Journal Publications (J)

J35: Nia, S., Dasani, D., Tsotsis, T.T. and Jessen, K: "Inside the Pores of the Monterey Formation: A Giant Unconventional Oil Resource", submitted to Fuel and Energy.

J34: Nia, S. and Jessen, K: "Theoretical Analysis of Capillary Rise in Porous Media", submitted to TiPM fall 2014.

J33: Shojaei, H and Jessen, K: "Diffusion and Matrix-Fracture Interactions during Gas Injection in Fractured Reservoirs", accepted TiPM, fall 20114.

J32: Evazi, M. and Jessen, K: "Dual-porosity coarse-scale modeling and simulation of highly heterogeneous geomodels", Transport in Porous Media, July 2014, DOI: 10.1007/s11242-014-0367-7

J31: Roychaudhuri, B., Tsotsis, TT. and Jessen, K: "An experimental investigation of spontaneous imbibition in gas shales", Journal of Petroleum Science and Engineering 111, 87-97, 2013

J30: Javaheri, M., Nattwongasem, D. and Jessen, K: "Relative Permeability and Non-Wetting Phase Plume Migration in Vertical Counter-Current Flow Settings", International Journal of Greenhouse Gas Control, Volume 12, 2013, Pages 168–180

J29: Shojaei, H., Rastegar, R. and Jessen, K: "Mixing and Mass Transfer in Multicontact Miscible Displacements", Transport in Porous Media, 2012, Volume 94, Number 3, Pages 837-857

J28: Jamshidi, M. and Jessen, K: "Water production in enhanced coalbed methane operations", Journal of Petroleum Science and Engineering, Volumes 92–93, 2012, Pages 56-64

J27: Javaheri, M. and Jessen, K: "Integration of counter-current relative permeability in the simulation of CO_2 injection into saline aquifers", International Journal of Greenhouse Gas Control, Volume 5, Issue 5, September 2011, Pages 1272-1283

J26: Liu, Z., Jessen, K. and Tsotsis, T: "Optimization of In-Situ Combustion Processes: A Parameter Space Study towards Reducing the CO_2 Emissions", Chemical Engineering Science, Vol. 66(12), p.2723-2733, 2011.

J25: DiCarlo, D.A. and Jessen, K: "Simulation of Compositional Gravity Drainage Processes", SPE Journal, 16(4), p812-827, 2011.

J24: Rastegar, R. and Jessen, K: "Measurement and Modeling of Liquid–Liquid Equilibrium for Ternary and Quaternary Mixtures of Water, Methanol, 2-Propanol, and 2,2,4-Trimethylpentane at 293.2 K", Journal of Chemical and Engineering Data, doi: 10.1021/je100916h, December, 2010.

J23: LaForce, T. and Jessen, K: "Numerical Investigation of Multicomponent Multiphase WAG Displacements", Computational Geosciences, Volume 14, Number 4, Pages 745-754, 2010.

J22: Seto, C.J., Jessen, K. and Orr, F.M. Jr: "A Multicomponent, Two-Phase Flow Model for CO_2 Storage and Enhanced Coalbed-Methane Recovery", SPE Journal, Vol. 14 (1), p.30-40, 2009.

J21: Jessen, K., Gerritsen M.G. and Mallison, B.T: "High-Resolution Prediction of Enhanced Condensate Recovery Processes", SPE Journal, Vol. 13(2), p. 257-266, 2008.

J20: Jessen, K. and Orr, F.M. Jr: "On IFT measurements for prediction of the minimum miscibility pressure", SPE Reservoir Evaluation & Engineering, Vol. 11(5), p. 933-939, 2008.

J19: Jessen, K., Tang, G-Q and Kovscek, A.R. "Laboratory and Simulation Investigation of Enhanced Coalbed Methane Recovery by Gas Injection", Transport in Porous Media, Vol. 73(2), p. 141-159, 2008.

J18: LaForce, T., Jessen, K. and Orr, F. M. Jr, "Four-component gas/water/oil displacements in one dimension: Part I. structure of the conservation law", Transport in Porous Media, Vol. 71(2), p. 199-216, 2008.

J17: LaForce, T., Jessen, K. and Orr, F. M. Jr, "Four-component gas/water/oil displacements in one dimension: Part II - Example Solutions", Transport in Porous Media, Vol. 72(1), p. 83-96, 2008.

J16: Jessen, K and Stenby, E. H.: "Fluid Characterization for Miscible EOR Projects and CO_2 Sequestration", SPE Reservoir Evaluation & Engineering, Vol. 10(5), p. 482-488, 2007.

J15: Seto, C.J., Jessen, K. and Orr Jr., F.M. Jr: "Using Analytical Solutions in Compositional Streamline Simulation of a Field-Scale CO_2-Injection Project in a Condensate Reservoir", SPE Reservoir Evaluation & Engineering, Vol. 10(4), p. 393-405, 2007.

J14: Ide, S. T., Jessen, K. and Orr, F.M. Jr.: "Storage of CO_2 in saline aquifers: Effects of gravity, viscous, and capillary forces on amount and timing of trapping", International Journal of Greenhouse Gas Control, Vol. 1(4), p. 481-491, 2007.

J13: Orr, F.M. Jr. and Jessen, K.: "An analysis of the vanishing interfacial tension technique for determination of minimum miscibility pressure", Fluid Phase Equilibria, Vol. 255(2), p. 99-109, 2007.

J12: Orr, F.M. Jr and Jessen, K.: Response to comments on "An analysis of the vanishing interfacial tension technique for determination of minimum miscibility pressure", Fluid Phase Equilibria, Vol. 259(2), p. 238, 2007.

J11: Orr, F.M., Jr. and Jessen, K.: Comments on "A new mechanistic parachor model to predict dynamic interfacial tension and miscibility in multicomponent hydrocarbon systems" by S. Ayirala and D. Rao [J. Colloid Interface Sci. 299 (2006) 321–331], Journal of Colloid and Interface Science, Vol. 306(1), p. 1-2, 2007.

J10: DiCarlo, D. A., Jessen, K. and Orr, F.M. Jr.: "Compositional gravity drainage 2: experimental measurements using an analog system", Transport in Porous Media, Vol. 69(2), p. 159-174, 2007.

J9: Cinar, Y, Jessen, K. Berenblyum, R., Juanes, R and Orr, F.M Jr.: "An Experimental and Numerical Investigation of Cross-Flow Effects in Two-Phase Displacements", SPE Journal, Vol. 11(2), p216-226, 2006.

J8: Mallison, B., Gerritsen, M., Jessen, K. and Orr, F.M. Jr: "High Order Upwind Schemes for Two-Phase, Multicomponent Flow", SPE Journal, 10(3), p.297-311, 2005.

J7: Jessen, K., Kovscek, A.R. and Orr, F.M. Jr: "Increasing CO_2 storage in oil recovery Energy Conversion and Management, Vol. 46(2), p. 293-311, 2005.

J6: Jessen, K. and Orr, F.M. Jr. "Gas Cycling and the Development of Miscibility in Condensate Reservoirs", SPE Reservoir Evaluation and Engineering, Vol. 7(5), p. 334-341, 2004.

J5: Jessen, K., Stenby, E.H. and Orr, F.M. Jr. "Interplay of Phase Behavior and Numerical Dispersion in Finite Difference Compositional Simulation", Society of Petroleum Engineers Journal, 9(2), p. 193-201, 2004.

J4: Zhu, J., K. Jessen, A. R. Kovscek, and F.M. Orr Jr. "Analytical Theory for Coal-Bed Methane Recovery by Gas Injection", Society of Petroleum Engineers Journal, Vol. 8(4), p. 371-379, 2003.

J3: Jessen, K., Wang, Y., Ermakov, P., Zhu, J. and Orr, F.M., Jr.: "Fast, Approximate Solutions for 1D Multicomponent Gas Injection Problems", Society of Petroleum Engineers Journal, Vol. 6(4), p. 442-451, 2001.

J2: Jessen, K and Stenby E.H: "Forbedring af olieindvinding ved gasinjektion" in Danish journal: Dansk Kemi (ISSN: 0011-6335), vol: 80, issue: (5), pages: 35-36, 1999

J1: Jessen, K., Michelsen, M.L. and Stenby, E.H: "Global approach for calculation of minimum miscibility pressure", Fluid Phase Equilibria, Vol. 153(2), p. 251-263, 1998.

Invited Talks (I)

I14: Jessen, K: "Modeling and Simulation of Gas Injection Processes", LASPE Petroleum Technology Forum, Long Beach, CA, June 10th, 2014

I13: Jessen, K: "Migration, Counter-Current Flow and Entrapment of CO_2 in Subsurface Settings", UC Irvine, Environmental Engineering Graduate Seminar Series, May 2, 2014

I12: Jessen, K: "Compositional Modeling and Simulation at Lab and Field Scale", Department of Energy Resources Engineering, Stanford University, November 18th, 2013

I11: Jessen, K: "Mixing and Mass transfer in Multicomponent Miscible Displacements", J.L. Frank '58 Graduate Seminar Series, Dwight Look College of Engineering, Texas A&M, November 6th, 2013

I10: Jessen, K: "Mass Transfer and Sorption in the Context of Unconventional Resources", Department of Chemical and Biochemical Engineering, Technical University of Denmark, June 7th, 2013

I9: Jessen, K: "Application of Non-Cubic EOS in Compositional Simulation", SPE Complex Reservoir Fluids Workshop, Houston, 5-7 November 2012

I8: Jessen K: "The Role of Counter-Current Relative Permeability in Simulation of CO_2/Brine systems", seminar series, Colorado School of Mines, August 2011

I7: Jessen, K: "Compositional Modeling and Simulation of Gas Injection Processes", Invited talk at SPE Applied Technology Workshop: "CO_2 EOR Projects: Opportunities and Challenges in the Middle East", 4-7, Abu Dhabi, UAE, October, 2010

I6: Jessen, K: "Entrapment of CO_2 as Residual Gas during Counter-Current Flow in Saline Aquifers", Invited talk at XVIII International Conference on Computational Methods in Water Resources, CMWR 2010, J. Carrera (Ed), CIMNE, Barcelona, June 2010

I5: Jessen, K: "Integrated Compositional Modeling and Simulation", Invited talk at University of Oklahoma, Petroleum and Geological Engineering, November 2009.

I4: Jessen, K: "Collaborative Research on Carbon Sequestration in Saline Aquifers in China", Invited talk at the Annual Research Symposium of the Global Climate and Energy Project, Stanford University, October 1, 2009.

I3: Jessen, K. and Kovscek A. R: "Multicomponent Sorption Modeling for Enhanced Coalbed Methane Production", Invited talk at SIAM Conference on Computational Science and Engineering, Miami, Florida, March 2-6, 2009.

I2: Jessen, K: "Flow-based lumping in compositional simulation", Seminar series speaker at UT Austin, Department of Petroleum and Geosystems Engineering, December 2008

I1: Jessen, K and Orr, F.M. Jr: "Streamline Based Simulation of CO_2 Injection in Saline Aquifers", Invited talk/paper at CMWR XVI - Computational Methods in Water Resources XVI International Conference, Copenhagen, Denmark, June 19-22 2006

Conference Papers (C)

C52: Sherafati, M. and Jessen, K: "Modeling and Simulation of WAG Injection Processes - The Role of Counter-Current Flow", SPE-174038, SPE Western Regional Meeting, Garden Grove, California, USA, 27–30 April 2015.

C51: Mollanouri M., Nia, S. and Jessen, K: "Conductivity of Proppant-Packs under Variable Stress Conditions: An Integrated 3D Discrete Element and Lattice Boltzmann Method Approach", SPE Western Regional Meeting, Orange County, California, USA, 27 – 30 April 2015.

C50: Yadecuri, M.E. and Jessen. K: "Three-dimensional Coarse-Scale Simulation of Enhanced Oil Recovery Processes in Highly Heterogeneous Reservoirs", SPE 173296, SPE Reservoir Simulation Symposium held in Houston, Texas, USA, 23–25 February 2015

C49: Roychaudhuri, B., Tsotsis, T., and Jessen, K: "Forced and Spontaneous Imbibition Experiments for Quantifying Surfactant Efficiency in Tight Shales", SPE169500, SPE Western North America and Rocky Mountain Joint Regional, Denver, CO, USA, 16-18 April 2014.

C48: Sherafati, M., Javaheri, M. and Jessen, K: "The Role of Counter-current Flow in WAG and Simultaneous Water and Gas Injection Processes", SPE Western North America and Rocky Mountain Joint Regional Meeting, Denver, CO, USA, 16-18 April 2014.

C47: Shojaei, H. and Jessen, K: "Diffusion and Matrix-Fracture Interactions during Gas Injection in Fractured Reservoirs", SPE169152, SPE Improved Oil Recovery Symposium held in Tulsa, Oklahoma, USA, 12-16 April 2014.

C46: Nia, S.F., Dasani, D., Tsotsis, T. and Jessen, K: "Pore-Scale Characterization of Oil-Rich Monterey Shale: A Preliminary Study", SPE Unconventional Resources Technology Conference held in Denver, Colorado, USA, 12-14 August 2013

C45: Yadecuri, M.E. and Jessen. K: "Simulation of Waterflooding with Coarse-Scale Dual-Porosity Representation of Highly Heterogeneous Reservoirs", Paper SPE165320, SPE Western Regional & AAPG Pacific Section Meeting, 2013 Joint Technical Conference, Apr 19 - 25, 2013 2013, Monterey, CA, USA

C44: Javaheri, M., Jessen, K., "CO_2 Mobility and Transitions between Co-current and Counter-Current Flows", SPE 163596, SPE Reservoir Simulation Symposium, 18-20 February 2013, The Woodlands, Texas, USA.

C43: Javaheri, M., Nattwongasem, D. and Jessen, K.: "Counter-current relative permeability and immobilization of CO2 in saline aquifers", Computational Methods in Water Resources (CMWR XIX), University of Illinois at Urbana-Champaign, June 17-21, 2012

C42: Shojaei, H., Rastegar, R. & Jessen, K., "Experimental and Modeling Study of Multicontact Miscible Displacements", SPE 154307, SPE Improved Oil Recovery Symposium,Tulsa, OK, USA, 2012.

C41: Roychaudhuri, B., Tsotsis, T.T and Jessen, K: "An Experimental and Numerical Investigation of Spontaneous Imbibition in Gas Shales", SPE 147652, SPE Annual Technical Conference and Exhibition (ATCE), Oct. 30-Nov. 3, Denver, Colorado, 2011.

C40: Liu, Z. B., Jessen, K., Tsotsis, T. T.: "Oil production by in-situ combustion: a unique example of a large-scale, multi-phase, multi-functional, heterogeneous reactor", paper O17, Catalysis in Multiphase Reactors CAMURE-8, International Symposium on Multifunctional Reactors ISMR-7, Naantali, Finland, May 22-25, 2011.

C39: Javaheri, M. and Jessen, K: "Residual Trapping in Simultaneous Injection of CO2 and Brine in Saline Aquifers", SPE 144613, SPE Western Regional Meeting, Anchorage, Alaska, May 2011.

C38: Shojaei, H. and Jessen, K: "Application of Potential Theory to Modeling of ECBM Recovery", SPE 144612, SPE Western Regional Meeting, Anchorage, Alaska, May 2011.

C37: Javaheri, M. and Jessen, K: "Integration of Counter-Current Relative Permeability in the Simulation of CO2 Injection into Saline Aquifers", SPE 142188, SPE Reservoir Simulation Symposium, Woodlands, TX, February, 2011.

C36: Jamshidi, M. and Jessen, K: "Impact of Reservoir Characteristics on Water Production in Enhanced Coalbed Methane Operations", paper SPE 132521, Western North America Regional Meeting, Anaheim, California, USA, 26–30 May 2010.

C35: Rastegar, R. and Jessen, K: "Lumping and Delumping for Integrated Compositional Modeling", paper SPE125017, Annual Technical Conference and Exhibition, Society of Petroleum Engineers, New Orleans, LA, October 2009.

C34: Nattwongasem, D. and Jessen, K: "Residual Trapping of CO_2 in Aquifers during the Counter-Current Flow", paper SPE125029, Annual Technical Conference and Exhibition, Society of Petroleum Engineers, New Orleans, LA, October 2009.

C33: Rastegar, R. and Jessen, K: "Effects of Dispersive Mixing on Enhanced Oil Recovery for Miscible CO_2 Injection Processes", SPE126683, SPE International Conference on CO_2 Capture, Storage, and Utilization held in San Diego, California, USA, 2–4 November 2009.

C32: Nattwongasem, D. and Jessen, K: "Immobilization of Supercritical CO_2 during Counter-Current Flow in Deep Saline Aquifers", SPE126685, SPE International Conference on CO_2 Capture, Storage, and Utilization held in San Diego, California, USA, 2–4 November 2009.

C31: Liu, Z., Jessen, K. and Tsotsis, T: "Optimization of In-situ Combustion Processes: Reduction of CO_2 Emissions", Paper SPE126687, SPE International Conference on CO_2 Capture, Storage, and Utilization held in San Diego, California, USA, 2–4 November 2009.

C30: Rastegar, R. and Jessen, K., "A Flow Based Lumping Approach for Compositional Reservoir Simulation", Paper SPE119160, SPE Reservoir Simulation Symposium, February 2-4, Woodlands, Texas, 2009.

C29: LaForce, T. and Jessen, K: "Numerical Investigation of Multicomponent Multiphase WAG Displacements" SPE 110264, Annual Technical Conference and Exhibition, Society of Petroleum Engineers, Anaheim, CA, 2007.

C28: DiCarlo, D.A. and Jessen, K: "Simulation of Compositional Gravity Drainage Processes", SPE 110077, Annual Technical Conference and Exhibition, Society of Petroleum Engineers, Anaheim, CA, 2007.

C27: Jessen, K. and Orr, F.M. Jr: "On IFT Measurements to Estimate Minimum Miscibility Pressures" SPE 110725, Annual Technical Conference and Exhibition, Society of Petroleum Engineers, Anaheim, CA, 2007.

C26: Jessen, K., Lin, W and Kovscek, A.R: "Sorption Modeling in ECBM Displacement Calculations", SPE 110258, Annual Technical Conference and Exhibition, Society of Petroleum Engineers, Anaheim, 2007.

C25: Lin, W., Jessen, K. and Kovscek, A.R: "Modeling of Multicomponent Sorption in ECBM Processes", paper 518e, AIChE Annual Meeting, Salt Lake City, UT, 2007.

C24: Liu, Z. B., Jessen, K. and Tsotsis, T: "Reduction Of CO2 Emissions Arising From In-Situ Combustion Processes", paper 267c, AIChE Annual Meeting, Salt Lake City, UT, 2007

C23: Seto, C., Jessen, K., LaForce, T. and Orr, F.M. Jr: "Analytical Modeling of CO2 Sequestration and Enhanced Coalbed Methane Recovery", ECMOR X - 10th European Conference on the Mathematics of Oil Recovery, Amsterdam, Netherlands 4 - 7 September, 2006.

C22: Jessen, K and Orr, F.M. Jr: "Simulation of CO_2 Injection in Saline Aquifers". Proceedings for CO2SC Symposium, Lawrence Berkeley National Laboratory, Berkeley, California, March 20-22, 2006

C21: Ide, S. T., Jessen, K. and Orr, F. M Jr.: "Time Scales for Migration and Trapping of CO_2 in Saline Aquifers", 8th International Conference on Greenhouse Gas Control Technologies (GHGT8), 19-22 June, Trondheim, Norway, 2006.

C20: LaForce, T., Jessen, K. and Orr, F.M. Jr., "Analytical Solutions for Compositional Three-Phase Four-Component Displacements", Paper 102777, SPE Annual Technical Conference and Exhibition, 24-27 September 2006, San Antonio, Texas, USA

C19: Seto, C. J. Jessen, K. and Orr, F. M. Jr: "Analytical modeling of CO_2 storage and enhanced coal bed methane recovery", presented at GHGT8, 8th International Conference on Greenhouse Gas Control Technologies, 19-22 June, Trondheim, Norway, 2006.

C18: Seto, C.J., Jessen, K. and Orr, F.M. Jr: "A Four-Component, Two-Phase Flow Model for CO2 Storage and Enhanced Coalbed Methane Recovery", Paper 102376, SPE Annual Technical Conference and Exhibition, 24-27 September, San Antonio, Texas, 2006.

C17: Gerritsen, M., Lambers, J. Mallison, B. and Jessen, K., "A fully adaptive streamline framework for the challenging simulation of gas injection processes", SPE98270, presented at the SPE Annual Technical Conference and Exhibition held in Dallas, Texas, U.S.A., 9-14 October 2005.

C16: Tang, G-Q., Jessen, K. and Kovscek, A. R., "Laboratory and Simulation Investigation of Enhanced Coalbed Methane Recovery by Gas Injection", SPE95947, to be presented at the SPE Annual Technical Conference and Exhibition held in Dallas, Texas, U.S.A., 9-14 October 2005.

C15: Jessen, K., Gerritsen, M. and Mallison, B., "High-Resolution Compositional Simulation of Enhanced Condensate Recovery". Proceedings of the 26'th annual meeting of the International Energy Agency (IEA) collaboration on enhanced oil recovery, Tokyo, Japan. September 24-29, 2005.

C14: Jessen, K and Stenby E. H.: "Strategies for Reservoir Fluid Characterization for Miscible EOR Projects and CO_2 Sequestration". In proceedings of the 26'th annual meeting of the International Energy Agency (IEA) collaboration on enhanced oil recovery, Tokyo, Japan. September 24-29, 2005.

C13: Stenby, E.H. and Jessen, K.: "Fluid Characterization for Miscible EOR Projects and CO2 Sequestration ". In proceedings of the 25'th annual meeting of the International Energy Agency (IEA) collaboration on enhanced oil recovery, Stavanger, Norway. 2004.

C12: Jessen, K. and Orr, F.M. Jr.: "Gravity Segregation and Compositional Streamline Simulation", SPE 89448, Presented at the 2004 SPE/DOE Fourteenth Symposium on Improved Oil Recovery held in Tulsa, Oklahoma, U.S.A., 17-21 April 2004.

C11: Berenblyum, R.A., Shapiro, A.A, Jessen, K., Stenby. E.H. and Orr, F.M. Jr., "Black Oil Streamline Simulator with Capillary Effects", SPE 84037, Presented at the SPE Annual Technical Conference and Exhibition held in Denver, Colorado, U.S.A., 5-8 October 2003.

C10: Seto, C.J., Jessen, K. and Orr, F.M. Jr.: "Enhanced Condensate Recovery and CO2 Sequestration", In proceedings of the 24'rd annual meeting of the International Energy Agency (IEA) collaboration on enhanced oil recovery. September 7-10, Regina, Canada, 2003.

C9: Jessen, K. and Orr, F.M. Jr. "Compositional Streamline Simulation", paper SPE 77379 in proceedings of the SPE ATCE 2002, September 29 - October 2, San Antonio, Texas.

C8: Jessen, K., Sam-Olibale, L., Kovscek, A, Orr, F.M. Jr.: "Increasing CO2 storage in Oil Recovery", First National Conference on Carbon Sequestration, sponsored by the National Energy Technology Laboratory, Washington, DC, May 14-17, 2001.

C7: Pruess, K. et al., 2002, "Code intercomparison builds confidence in numerical models for geologic disposal of CO_2", 2002, Presented at the GHGT-6 Conference, Kyoto, Japan, October 1-4, 2002

C6: Jessen, K. and Orr, F.M. Jr,: "3D Compositional Streamline Simulation", In proceedings of the 23'rd annual meeting of the International Energy Agency (IEA) collaboration on enhanced oil recovery. September 8-11, Caracas, Venezuela, 2002.

C5: Jessen, K. and Stenby, E. H.: "Effects of Numerical Dispersion in FD Simulation of 1D Gas Injection Problems". In proceedings of the 21'st annual meeting of the International Energy Agency (IEA) collaboration on enhanced oil recovery. Edinburgh, Scotland. 2000.

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