TANIYA KAR

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EDUCATION

Texas A&M University, College Station, Texas; Doctor of Philosophy
Major: *Petroleum Engineering* **GPA**: 4.0 Graduation: *August 2017*
Dissertation: Emulsion formation mechanism for Steam and Solvent-Steam Processes for Bitumen Recovery
Advisor: Dr. Berna Hascakir, Phone: 9798456614, hascakir@tamu.edu
Texas A&M University, College Station, Texas; Master of Science
Major: *Petroleum Engineering* **GPA**: 3.75 Graduated: *May 2015*
MSc Thesis: Analysis of Saturates, Aromatics, Resins, Asphaltenes (SARA), Water, and Clays in Water-Oil Emulsions for Steam Assisted Gravity Drainage and Expanding-Solvent SAGD.
National Institute of Technology, Raipur, India; Bachelor of Technology
Major: *Chemical Engineering* **GPA**: 9.1/10 (Honors) Graduated: *Spring 2013*

POSITIONS/WORK EXPERIENCE

PostDoc Researcher: for Reservoir Engineering Research Institute, Palo Alto, CA *Oct 2017-Present*
Research Interests: Oil-water interfacial rheology, flow assurance (paraffinic waxes, asphaltenes)
Research Assistant: in the Heavy Oil, Oil shales, Oil sands, & Carbonate Analysis and Recovery Methods (HOCAM) research group *Jan 2014-Aug 2017*
Research Interests: Thermal enhanced oil recovery, electromagnetic (microwave) heating of water-oil emulsions, molecular level investigation of crude oil emulsions and its characteristic components, steam-assisted gravity drainage (SAGD), in-situ combustion, asphaltenes, impact of clay type on recovery efficiency.
Teaching Assistant: for PETE 310 "Reservoir Fluids" *Fall 2016, Fall 2015*
Undergraduate level laboratory instructor and teaching assistant.
Journal Reviewer: for Journal of Petroleum Science and Engineering *Summer 2015-Summer 2017*
Mentoring: Mentored eight undergraduate student workers on research in the Heavy Oil laboratory-Ramey Lab in Petroleum Engineering Department, Texas A&M University.
Internship: Indian Farmers Fertilizer Cooperative Limited (IIFCO), India, *Summer 2012*
Served as *Project Assistant* on "Carbon dioxide recovery in Ammonia Plant-II". Learned the multistep formation of urea fertilizer from ammonia and carbon dioxide, and designed a heat exchanger in the Ammonia production plant using numerical simulation; at IFFCO, India.
Trainee: Bhilai Steel Plant, Bhilai, India (an integrated steel making plant), *Summer 2011*
Got acclimated with steel making aspects in Blast Furnace, Steel Melting Shops, and Foundry & Pattern Shop.

SOFTWARE SKILLS

Eclipse, C, C++, FORTRAN, CMG STARS (Steam Thermal and Advanced Processes Reservoir Simulator).

SCHOLARSHIPS

- $2,000 Scholarship, Faculty Award of Excellence for Research at Masters Level, Harold Vance Department of Petroleum Engineering, Texas A&M University, May 2016.
- Research Assistant Position in Harold Vance Department of Petroleum Engineering (Jan 2014-Aug 2017).
- Full scholarship from Petroleum Engineering Department, Texas A&M University, to

complete MSc studies (Jan 2014-Aug 2015); and PhD studies (Sep 2015-Aug 2017).

- $2,000 fellowship (Fall 2013- Spring 2014) from the Department of Petroleum Engineering, Texas A&M University.
- Received the All India National Talent Search Examination (NTSE) scholarship from National Council of Educational Research and Training (NCERT), India – 2008-2013.

PEER REVIEWED PUBLICATIONS

6. **Kar, T.**, Hascakir, B., 2017. In-Situ Kerogen Extraction via Combustion and Pyrolysis, *Journal of Petroleum Science and Engineering*, **154**: 502-512.

5. Kar, T., Stape, P., Hascakir, B. 2016. Effect of Solvent Type on Water-in-Oil Emulsion Formation for Steam Flooding and Steam-Assisted Gravity Drainage, *Canadian Heavy Oil Association Journal (CHAO Journal)*. October Edition, 13-19. Invited.

4. Mukhametshina, A., **Kar, T.**, Hascakir, B. 2016. Asphaltene Precipitation during Bitumen Extraction with Expanding Solvent Steam Assisted Gravity Drainage (ES-SAGD): Effects on Pore-Scale Displacement, *SPE Journal*, **21**(02): 380-392, SPE-170013-PA.

3. Kar, T., Ovalles, C., Rogel, E., Vien, J., Hascakir, B. 2016. The Residual Oil Saturation Determination for Steam Assisted Gravity Drainage (SAGD) and Solvent-SAGD. *Fuel*, **172**: 187-195.

2. Kar, T., Mukhametshina, A., Unal, Y., Hascakir, B. 2015. The Effect of Clay Type on Steam Assisted Gravity Drainage Performance, *Journal of Canadian Petroleum Technology*, **54**(06): 412-423, SPE-173795-PA.

1. Kar, T., Hascakir, B. 2015. The Role of Resins, Asphaltenes, and Water in Water-Oil Emulsion Breaking with Microwave Heating, *Energy and Fuels*, **29**: 3684-3690.

CONFERENCE PUBLICATIONS & SEMINARS

12. Kar, T., Hascakir, B. 2017. Impact of Clay Type on SAGD Performance Part I: Microscopic Scale Analysis of Clay-SARA Interactions in Produced Oil, SPE Latin American and Caribbean Petroleum Engineering Conference, 17-19 May, Buenos Aires, Argentina, SPE-185533-MS.

11. Kar, T., Hascakir, B. 2017. Impact of Clay Type on SAGD Performance Part II: Microscopic Scale Analysis of Clay-SARA Interactions in Spent Rock, SPE Latin American and Caribbean Petroleum Engineering Conference, 17-19 May, Buenos Aires, Argentina, SPE-185547-MS.

10. Kar, T., Nezhad, P.B., Ng, A.Z.Y., Ovalles, C., Benson, I.P., Hascakir, B. 2017. Mobilization of Trapped Residual Oil via Secondary SAGD with Propane, SPE Western Regional Meeting, 23-27 April, Bakersfield, California, USA, SPE-185684- MS.

9. Kar, T., Ovalles, C., Benson, I.P., Hascakir, B. 2017. Propane-Steam Assisted Gravity Drainage (propane-SAGD) as a follow-up process to SAGD, 13th International Symposium on Heavy Oil Upgrading, Production & Characterization, ACS 253rd National Meeting, April 2-6, San Francisco, California, USA, PAPER ID: 2657699

8. Kar, T., Hascakir, B. 2016. The Interaction of Asphaltenes with Solvents, Water, and Clays during Bitumen Extraction through Solvent-Steam Injection, *SPE International Heavy Oil Conference & Exhibition*, 6-8 December, Mangaf, Kuwait, SPE-184081-MS.

7. Kar, T., Hascakir, B. 2016. Effective Extraction of Green River Oil Shale via Combustion, 20th SPE Improved Oil Recovery Conference, 9-13 April, Tulsa, Oklahoma, USA, SPE-178972-MS.

6. Kar, T., Hascakir, B. 2015. Characterization of Kerogen for Green River Oil Shale, The Sixth Annual Berg-Hughes Symposium, 16 October, Texas A&M University, College Station, Texas, USA.

5. Guven, S., Punase, A., **Kar, T.**, Hascakir, B. 2015. Investigation of Chemical Physical Properties of Oil Shales with Spectral and Thermal Methods, The Sixth Annual Berg-Hughes Symposium, 16 October, Texas A&M University, College Station, Texas, USA.

4. Kozlowski M.L., **Kar. T.**, Hascakir, B. 2015. Ex-situ Extraction of Green River Oil Shale by Combustion, Western States Section of the Combustion Institute Fall Meeting, Provo, Utah, USA, October 5-6, 134IE-0051.

3. Kar, T., Yeoh, J., Ovalles, C., Rogel, E., Benson, I.P., Hascakir, B. 2015. The Impact of Asphaltene Precipitation and Clay Migration on Wettability Alteration for Steam Assisted Gravity Drainage (SAGD) and Expanding Solvent-SAGD (ES-SAGD), 2015 SPE Heavy Oil Conference, 9-11 June, Calgary, Alberta, Canada, SPE-174439-MS.

2. Unal, Y., **Kar, T.**, Mukhametshina, A., Hascakir, B. 2015. The Impact of Clay Type on the Asphaltene Deposition during Bitumen Extraction with Steam Assisted Gravity Drainage, SPE International Symposium on Oilfield Chemistry 2015, 13-15 April, The Woodlands, Texas, USA, SPE-173795-MS.

1. Kar, T., Williamson, M, Hascakir, B. 2014. The Role of Asphaltenes in Emulsions Formation for Steam Assisted Gravity Drainage (SAGD) and Expanding Solvent-SAGD (ES-SAGD), 2014 SPE Heavy and Extra Heavy Oil Conference-Latin America, 24-26 September, Medellin, Colombia,SPE-171076-MS.