

# Agenda

**Workshop and Reception • Thursday, October 12, 2017**  
**C213 Coal Utilization Lab, EMS Energy Institute**

2:30 – 3:30 pm	<b>Welcome and Toolkit Updates (PennPVT, PennSurf, PennSim)</b> Saeid Khorsandi and Russell Johns
3:30 – 4:00 pm	<b>Demonstration of Phase Behavior Tuning with PennSurf</b> Saeid Khorsandi and Russell Johns
4:00 – 4:45 pm	<b>Special Workshop Topic: Advances in Modeling Relative Permeability</b> Russell Johns
4:45 – 5:45 pm	Lab and building tours
5:45 – 6:00 pm	<b>Travel to restaurant</b>
6:00 – 8:00 pm	Dinner at Allen Street Grill, 100 West College Ave., 814-231-4745
	<b>End of Workshop</b>

**Technical Presentations • Friday, October 13, 2017**  
**C213 Coal Utilization Lab, EMS Energy Institute**

8:00 – 8:10 am	<b>Coffee and continental breakfast</b>
8:10 – 8:20 am	<b>Welcome and Introductory Remarks</b> Russell Johns
8:20 – 8:50 am	<b>Improved Modeling of Gas Flooding in Fractured Shale Oil Reservoirs</b> Michael Cronin, Hamid Emami, and Russell Johns
8:50 – 9:20 am	<b>WAG Modeling with Hysteresis</b> Liwei Li, Saeid Khorsandi, and Russell Johns
9:20 – 9:50 am	<b>Injectivity Errors During WAG Using Peaceman’s Model</b> Liwei Li, Saeid Khorsandi, and Russell Johns
9:50 – 10:00 am	<b>Break</b>
10:00 – 10:30 am	<b>EoS for Relative Permeability and Capillary Pressure</b> Saeid Khorsandi, Liwei Li, and Russell Johns
10:30 – 11:00 am	<b>Experimental Study for Modeling of Relative Permeability in an EoS Form: Chemically-tuned Waterflooding</b> Miral Tawfik and Zuleima Karpyn
11:00 – 11:30 am	<b>Advances in Understanding Chemically Tuned Polymer Flooding in Carbonates</b> Prakash Purswani and Zuleima Karpyn
11:30 – 12:00 pm	<b>Low Salinity Water Flooding: Zeta Potential Measurements and Surface Interaction Models</b> Tim Duffy, Derek Hall, Serguei Lvov, and Russell Johns

**ENHANCED OIL RECOVERY**

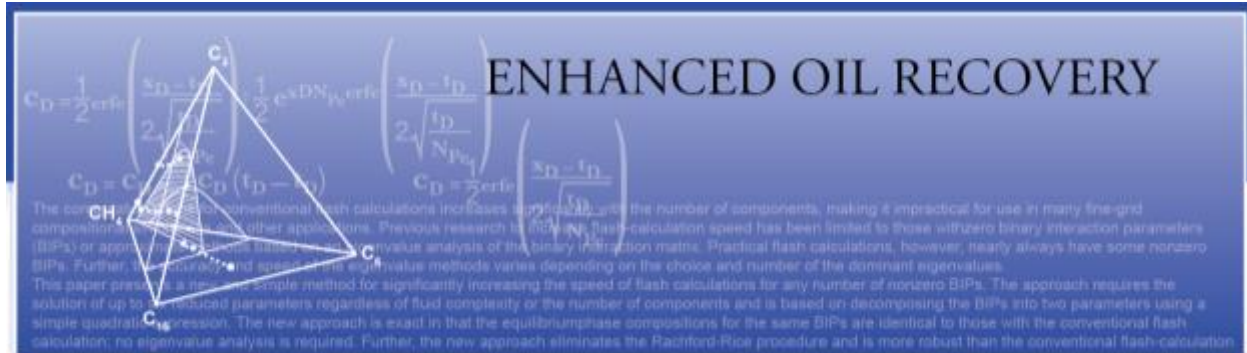
The conventional flash calculations increase significantly with the number of components, making it impractical for use in many fine-grid compositions or other applications. Previous research to increase flash-calculation speed has been limited to those with zero binary interaction parameters (BIPs) or approximations to the binary interaction matrix. Practical flash calculations, however, nearly always have some nonzero BIPs. Further, the accuracy and speed of the eigenvalue methods varies depending on the choice and number of the dominant eigenvalues.

This paper presents a new, simple method for significantly increasing the speed of flash calculations for any number of nonzero BIPs. The approach requires the solution of up to two reduced parameters regardless of fluid complexity or the number of components and is based on decomposing the BIPs into two parameters using a simple quadratic equation. The new approach is exact in that the equilibrium phase compositions for the same BIPs are identical to those with the conventional flash calculation; no eigenvalue analysis is required. Further, the new approach eliminates the Rachford-Rice procedure and is more robust than the conventional flash-calculation.

## Agenda Continued

**Technical Presentations • Friday, October 13, 2017**  
**C213 Coal Utilization Lab, EMS Energy Institute**

12:00 – 1:00 pm	<b>Lunch</b>
1:00 – 1:30 pm	<b>EoS for Surfactant Flooding with Impure Excess Phases</b> Saeid Khorsandi and Russell Johns
1:30 – 2:00 pm	<b>Microemulsion Phase Separation Mechanisms and K-values Approach</b> Daulet Magzymov, and Russell Johns
2:00 – 2:30 pm	<b>Curvature-Based Phase Behavior and Interfacial Tensions</b> Victor Torrealba and Russell Johns
2:30 – 2:40 pm	<b>Break</b>
2:40 – 3:10 pm	<b>A Thermodynamic Approach to Model Viscosity of Winsor Microemulsions</b> Pooya Khodaparast, Hafsa Abboud, and Russell Johns
3:10 – 3:40 pm	<b>Impact of Reservoir Mixing on Surfactant Slug Size Optimization</b> Evan Galimberti and Russell Johns
3:40 – 4:10 pm	<b>Impact of Microbial Iron Reduction on Reservoir Souring During Waterflooding</b> Mohammed A. Al-Saffar, Li Li, and Russell Johns
4:10 – 4:30 pm	<b>Discussion and Future Directions</b>
4:30 pm	<b>End of Meeting</b>



## Zoom Video Instructions

New for this year members may join us remotely using Zoom. Directions are below. The presentations will also be videotaped and posted for members in the 'EOR Members Log-in' section at a later date. An email will be sent out when the videos are posted. If you have any questions, please contact Liz Wood at [ery2@psu.edu](mailto:ery2@psu.edu).

Time: Oct 13, 2017 8:00 AM Eastern Standard Time (US and Canada)

Join from PC, Mac, Linux, iOS or Android: <https://psu.zoom.us/j/685728537>

Or iPhone one-tap (US Toll): [+14086380968,685728537#](tel:+14086380968,685728537#) or [+16468769923,685728537#](tel:+16468769923,685728537#)

Or Telephone:

Dial:

[+1 408 638 0968](tel:+14086380968) (US Toll)

[+1 646 876 9923](tel:+16468769923) (US Toll)

[+1 669 900 6833](tel:+16699006833) (US Toll)

Meeting ID: 685 728 537

International numbers available: <https://psu.zoom.us/join?m=W382p-LM2ySz-RDpLgeIAxqKjv-Whgs>

Or an H.323/SIP room system:

H.323:

[162.255.37.11](tel:162.255.37.11) (US West)

[162.255.36.11](tel:162.255.36.11) (US East)

[221.122.88.195](tel:221.122.88.195) (China)

[115.114.131.7](tel:115.114.131.7) (India)

[213.19.144.110](tel:213.19.144.110) (EMEA)

[202.177.207.158](tel:202.177.207.158) (Australia)

[209.9.211.110](tel:209.9.211.110) (Hong Kong)

[64.211.144.160](tel:64.211.144.160) (Brazil)

[69.174.57.160](tel:69.174.57.160) (Canada)

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SIP: [685728537@zoomcrc.com](mailto:685728537@zoomcrc.com)