



News from C&PE | Upcoming Events | New Publications | Quote of the Month

September 1, 2017

Welcome from C&PE

The Department of Chemical and Petroleum Engineering would like to issue a warm welcome to all of our new students and welcomes back our returning students, faculty, and staff. To kick off this new academic year, department chair Dr. Laurence Weatherley wrote in his newest Chair's Welcome:

"It is a great pleasure to welcome you to the Department of Chemical and Petroleum Engineering at the University of Kansas. We are sure that you will find your experience here exciting and valuable. We are very proud of our track record of excellence in both teaching and research which is underpinned by the department's outstanding faculty and teaching and research facilities. These support our department's key areas of activity in Kinetics and Catalysis, Bioengineering and Regenerative Medicine, Enhanced Oil Recovery and Reservoir Engineering, and Electrochemical Engineering.

"... This is an exciting time for Chemical and Petroleum Engineering at the University of Kansas! Our discipline has been recognized for its importance to the local, regional and national economic interests of the US, and over the last several years we have seen completion of a major laboratory overhaul with new facilities for petroleum engineering, tissue engineering research, fuel cell research, catalysis, process intensification, and plasma etching, all areas in which you may discover undergraduate and graduate research opportunities."

To read the rest of Dr. Weatherley's welcome letter, click [here](#).

Chemical Engineering Professor Alan Allgeier Joins C&PE

An additional warm welcome to our newest faculty member, Dr. Alan Allgeier. As an Associate Professor of Chemical Engineering, Dr. Allgeier utilizes experiences from his twenty-year career in the chemical and pharmaceutical industries to envision and realize revolutionary technologies for the sustainable manufacture of chemicals and materials. His expertise in heterogeneous and homogeneous catalysis and reactor design have been instrumental in production of large scale (monomers for nylon and polyesters) and small scale (clinical-scale pharmaceuticals and specialty chemicals) products. Beyond sustainable manufacturing, Dr. Allgeier focuses on the characterization of porous materials including catalysts but also biomass, thermal insulation, solid formulations of pharmaceuticals and adsorbents. At the University of Kansas, he is building a research group around three themes:



1. Characterization of porous materials and colloidal systems with a multi-technique approach including novel applications of NMR relaxometry
2. Continuous flow processing applied to pharmaceuticals, with emphasis on transient production of toxic or highly reactive reagents
3. Synthesis and characterization of heterogeneous catalysts with unique reactivity

Dr. Allgeier's faculty profile can be found [here](#).

Faculty Members Awarded Fred Kurata Professorships

Drs. Stevin Gehrke and Arghya Paul have each been awarded the Fred Kurata Memorial Professorship in Chemical and Petroleum Engineering. Dr. Fred Kurata was a professor of chemical and petroleum engineering from 1947 to 1978 and was a leader in thermodynamics research. The endowed professorships are made possible through the generous support of Joe and Annabelle Christy. Congratulations to both Dr. Gehrke and Dr. Paul for this honor!

////////// News from the CEBC \\\\\\\

Dr. Juan Bravo-Suarez's Newest Grant

Dr. Bravo-Suarez was recently awarded a prestigious Doctoral New Investigator Grant from the American Chemical Society Petroleum Research Fund. The two-year, \$110,000 award seeks to reveal the mysteries behind an industrial process for making propylene, one of the most versatile building blocks in chemical manufacturing. Many consumer goods, such as plastics, fuels, cosmetics and detergents, get their start from propylene. At KU, Bravo-Suarez will be well-equipped to peek inside the inner workings of catalysts. Armed with infrared, Raman and UV-visible spectroscopic equipment, his team will look at catalysts in action, just as ethylene and butane molecules are transformed into propylene in a process called metathesis.

"Knowing how catalysts work will help us design more efficient catalysts and cheaper ways to make propylene," Bravo-Suarez said. "It will also help us to find new and better ways to produce more with less."

Congratulations to Dr. Bravo-Suarez for this grant. To read the full story, click [here](#).

////////// Over the Summer \\\\\\\

Prof. Tao Named New Editor for Applied Surface Science

The Chemical and Petroleum Engineering Department is excited to congratulate Dr. Tao for receiving this prestigious invitation! The journal of *Applied Surface Science* began in 1985, and has been publishing work in surface science, catalysis, materials, and energy science ever since; it is a "Journal Devoted to Applied Physics and Chemistry of Surfaces and Interfaces."

For a link to the journal for more information, click [here](#). For a full list of contributing editors, click [here](#).

Prof. Barati's work highlighted in the Journal of Petroleum Technology

The June 1, 2017 issue of the *Journal of Petroleum Technology* is focused on Enhanced Oil Recovery (EOR) Operations, and Dr. Reza Barati's collaborative work is the main feature. Last April, his team, including himself and Steve Pennell, Michael Maston, and Mark Linroth from Kinder Morgan, presented their findings at the Society of Petroleum Engineering (SPE) Improved Oil Recovery Conference in Tulsa, OK, and it is these finding that are now being spotlighted. Their research led to the improvement of one of the largest CO2 injection projects ever done!

We want to send out a big Thank You to Prof. Barati for bringing attention to the revolutionary work being done in the field of EOR here at KU! To read the full JPT feature, click [here](#). A link to the publication can be found [here](#).

UPCOMING EVENTS

- Sept. 6** Employer-led *Lunch and Learn* session, "Making the Most of the Career Fair," with Koch Industries from 11:30am-1pm in LEEP2 1415A.
- Sept. 12** Employer-led *Lunch and Learn* session, "A Day in the Life of an Engineer," with Honeywell from 11:30am-1pm in LEEP2 1415A.
- Sept. 18** *Department Open House* from 12:00-3:00pm start in 4163 Learned Hall.
- Sept. 19** Annual dinner *Evening with Industry*, a great networking opportunity for students and employers to visit prior to the career fair, from 6-7pm in the Kansas Union. The cost is \$15 per person, register [here](#).
- Sept. 20** *Fall Engineering & Computing Career Fair* from 12-5pm at the Kansas Union. Students should dress professionally and research employers of interest.
- Sept. 30** *Engineering Open House* from 8:30am-1:30pm in LEEP2.

NEW PUBLICATIONS

- Li, X., Han, H., Yang, D., Liu, X., & Qin, J. (2017). "Phase Behavior of C3H8-CO2-Heavy Oil Systems in the Presence of Aqueous Phase under Reservoir Conditions." *Fuel*, 209, 358-370.
- Medina, Juan C., Manuel Figueroa, Raydel Manrique, Jhonatan Rodríguez Pereira, Priya D. Srinivasan, **Juan J. Bravo-Suárez**, Victor G. Baldovino Medrano, Romel Jiménez, and Alejandro Karelovic. "Catalytic Consequences of Ga Promotion on Cu for CO2 Hydrogenation to Methanol." *Catalysis Science & Technology*, vol. 7, no. 15, 2017, pp. 3375-3387.
- Nazari, N., Tsau J-S., **Barati R.** "CO2 Foam Stability Improvement Using Polyelectrolyte Complex Nanoparticles Prepared in Produced Water." *Energies*. 2017; 10(4):516.

QUOTE OF THE MONTH

"Projects we have completed demonstrate what we know—
future projects decide what we will learn."

- Dr. Mohsin Tiwana



C&PE Department

4132 Learned Hall | 1530 W 15th St | Lawrence, KS 66045 | 785-864-4965

[WEBSITE](#) | cpe@ku.edu | cpegrad@ku.edu

This newsletter was designed by Grace Lamar and distributed by the C&PE department representative, Martha Kehr: mkehr@ku.edu. Photo courtesy of University of Kansas images

If you would like to be removed from our mailing list, please contact cpe@ku.edu.