SUMMER 2024 SCBME; *University of Oklahoma*

OKChE Magazine

School of Sustainable Chemical, Biological and Materials Engineering

CLASS OF 2024

IN THIS ISSUE:

Welcome to SCBME from the Director, Prof. Dimitrios V. Papavassiliou

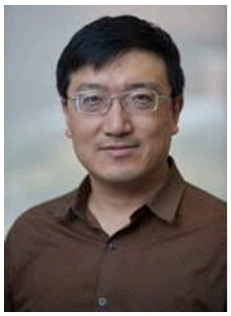
Dear Alumni and Friends,

I hope that you will share my joy and excitement for the accomplishments of our students and faculty, as you read the latest news from our School. In May, we proudly celebrated the graduation of the persistent class of 2024! This is the class who missed their high school graduation due to the pandemic, who took remote visits to OU and hybrid courses, and who made it through our tough curriculum re-establishing camaraderie among our student body. We are proud of each one of them – they are on to careers in industry and post-graduate studies. Notably, some of them will work for Valero, whose CEO and COO are both our graduates. We also graduated 12 PhD students in the last academic year. Our new on-line MS program on "Sustainability: Energy and Materials Management" is about to celebrate its 1st birthday with about 30 students enrolled, while we are kicking off new undergraduate and graduate certificates in Bioprocessing Engineering this Fall. Our School is also a key player in the anticipated cross-campus PhD program in Materials Engineering.

As we celebrated 31 years of an exceptional career at Dr. Resasco's retirement event in April, our faculty and students continued getting external recognition: Ralph E. Powe award from the Oak Ridge Associated Universities (Gunasooriya), the Inaugural Rokos-Menon Fellowship from the University of Cambridge (Razavi), and the Friedrich Wilhelm Bessel Research Award from the Humbold Foundation (Wang)! Our research expenditure soared to above $6.5M last year (+175% relative to FY 2022), and we climbed 10 positions in the US News and World Report rankings for best ChE graduate schools. We work on developing cancer and virus therapeutics, new materials and new sources for energy production and storage, cleaner and more efficient separation processes, and we lead collaborations across the campus and the Nation.
Once again congratulations to our seniors!

Dimitrios V. Papavassiliou, PhD
C.M. Sliepcevich Professor of Chemical Engineering
Director, School of Sustainable Chemical, Biological and Materials Engineering

Faculty Achievements

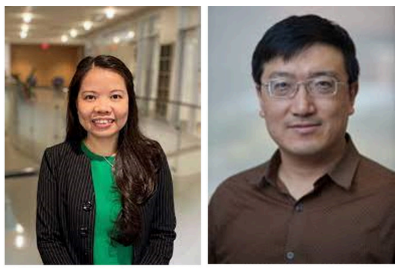


Alexander von HUMBOLDT STIFTUNG

- Prof. Bin Wang received the Friedrich Wilhelm Bessel Research Award from the Alexander von Humboldt Foundation, which presents approximately 20 Awards annually to internationally renowned academics from across the globe in recognition of their outstanding research accomplishments. The award winners are invited to carry out research projects in cooperation with specialist colleagues in Germany.

- A convergent research team lead by SCBME Director, Prof. Dimitrios Papavassiliou, received the Norman Campus Research and Creative Activity Award related to the $3,600,00 project "GCR: Transition to green energy in gas-producing regions: How the convergence of Engineering, Social Sciences and Geoscience can enable carbon-free H2 technologies", sponsored by the US National Science Foundation.

- Prof. Michele Galizia co-chaired the 33rd North American Membrane Society (NAMS) Conference, which was held in Santa Fe (NM), May 11-15th 2024. It was a great success, with about 400 attenders from three continents. SCBME graduate students succeeded in winning prestigious research awards: Matt Webb (Galizia Group) received the Student Fellowship Award. Will Box (Galizia Group) scored 2nd place in the research poster competition. Lucas Condes (Galizia Group) and Mostafa Tabatabaei (Foudazi Group) received travel awards. Pictured here, the SCBME team attending the NAMS Gala Dinner. OU was a diamond-level sponsor of the event.



- The paper “An Adsorptive Membrane Platform for Precision Ion Separation: Membrane Design and First-Principles Studies” published by Prof. Ngoc Bui, in collaboration with Prof. Bin Wang, was selected for the Front Cover in Small Structures (Wiley, IF = 15.9). “Precision ion separation from complex water matrices is key for energy-efficient recovery of critical minerals pivotal for clean energy transition and is one of the main research themes in my group” Dr. Bui says.

“My team strives to develop in-depth understanding of the microenvironment within the metal-ligand binding pocket which mechanistically governs specific bindings at atomic level, thereby building a solid foundation to guide the rational design of next-gen materials and methods for precision separation”. In this collaborative work with the Wang Group, the team synergized first-principles electronic structure calculations and in situ Raman spectroscopy to elucidate the factors governing ion discriminating behaviors of an adsorptive membrane having selective layer deterministically designed for the separation among transition metal ions. This study demonstrates synthetic controllability to transform three-dimensional micron-scale crystals to a two-dimensional crystalline selective layer in membranes, paving the way for more precise and sustainable advances in separation science.

- Dr. Dimitrios Papavasiliou, SCBME Chair, received the David Boren Professorship, one of the University of Oklahoma's highest honors, recognizing faculty who have made truly exceptional contributions to the mission of a public research university. To qualify for the Boren Professorship, a faculty member must have demonstrated outstanding teaching, research and creative activity, and leadership in professional and public service. "The scientific community recognizes Dr. Papavassiliou as one of the major contributors to the development of computational fluid dynamics over the last twenty-five years" Dr. Carol Silva, Senior Associate Vice President for Research and Partnerships, says.

- Dr. Bin Wang was recognized by the Award for Excellence in Research in Engineering and Applied Science from the OU office of Vice President for Research and Partnerships. This Award honors a tenured or tenure-track OU faculty member who has made a career-long and/or recent exceptional translational research contribution in an area of engineering and/or applied science. The contribution made is characterized by its impact in addressing major technical, social, and/or economic problems in today's society, and garners international visibility and recognition.

- SCBME Assistant Professor Kasun Gunasooriya receives the 2024 ORAU Ralph E. Powe Junior Faculty Enhancement Award. Congratulations, Dr. Gunasooriya!

New Faculty Member!

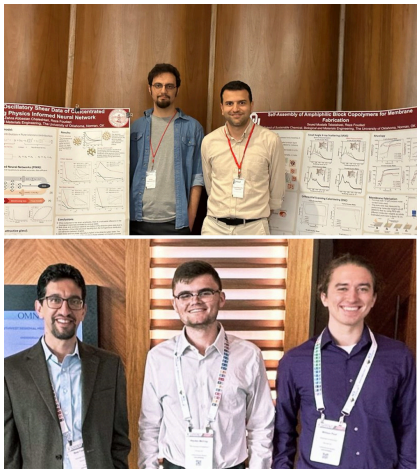
- SCBME is growing! Dr. Ahmad Al Douri, currently postdoctoral researcher at the University of Maryland, will join SCBME as an Assistant Professor in the Fall of 2024. His research will focus on process optimization and safety. Welcome to the SCBME family, Dr. Al Douri!

Post-Doctoral News

- Dr. Alejandra Gomez, currently post-doctorate researcher and formerly PhD student in the Steven Crossley Catalysis Group, is one of the two US researchers to receive the Young Researcher Support from the International Association of Catalysis Societies (IACS). This award will allow Alejandra to attend the 18th International Congress on Catalysis that will be held July 14-19th, 2024, in Lyon, France.

Student Success

- Matthew Thomas Webb, 4th year PhD student in the Galizia Group, is one of the three recipients of the NAMS (North American Membrane Society) Students Fellowship Award, which recognizes exceptional accomplishment from graduate researchers in membrane science.



- Mostafa Tabatabaei and Babak Valipourgoodaarzi, both graduate students in the Foudazi Group, scored first and second place, respectively, at the OU Industry Day poster session. Two undergraduate students from the same research group, Cole Pool and Hayden McCray, received the first and second-place award, respectively, at the OU Undergraduate Research Day.

Staff and Alumni

- **Meet Buck Sullivan, our new Laboratory Research Supervisor and Manager.**

"OU is my alma mater", Buck says. "I was a student-athlete here in the past and I loved being a Sooner. Returning to OU as an employee has been an absolute joy and privilege. I feel like I never left and always have the support and guidance of a winning team. When I graduated from OU, I started teaching at the high school level. I learned a lot about myself and what I enjoyed during that time.

I moved on from teaching and endeavored in fabrication and entrepreneurship where I was able to grow my skillset. I am Happy to be here in SCBME where I can be part of a team and utilize my diverse background and skills". When he is not at work, Buck loves playing disc golf with his family and friends, wrenching on his rock crawler, four wheeling and camping.

- **Meet Prof. Susan Williams, SCBME Alumna and currently Chemical and Petroleum Engineering Chair at the University of Kansas.**

Prof. Susan Williams is the Charles E. & Mary Jane Spahr Professor and Chair of Chemical and Petroleum Engineering at the University of Kansas (KU). Prior to joining KU, she received her Ph.D. in chemical engineering from the University of Oklahoma in 1999, under Daniel Resasco. "Susan was an exemplary graduate student" Dr. Resasco says.

"She was awarded a scholarship including discretionary funds, which she judiciously used to supplement her educational expenses. Maximizing these resources, she actively participated in numerous national and international conferences, expanding her network within the field. Recognizing the value of teaching experience, Susan sought and obtained an opportunity to instruct. Beyond assisting with courses, she was granted the opportunity to lead a course on Chemical Engineering computing, developing her versatility and commitment to academic enrichment. In addition to her outstanding research productivity, Susan's engagement in these supplementary activities gave her a competitive edge upon graduation, enhancing her prospects for faculty positions. Consequently, she received appealing offers and ultimately chose to join the faculty at KU".

Farewell, Class of 2024!

- **Farewell, ChemE Class of 2024!** As always, it is a bittersweet feeling saying goodbye to our seniors. At the same time, it is exciting to celebrate their accomplishments during the four years spent with us. 85% of them will join industrial jobs, and the remaining 15% will join chemical engineering graduate schools across the Country. Pictured here, our ChemE class of 2024. Among the graduating seniors, Mrs. Maddisen Foster received the medallion award for maintaining a perfect 4.0 grade-point average throughout her career at OU. We celebrated them during the traditional AIChE banquet, where Dr. Galizia received the Outstanding Professor Award for the third time in six years.

Connect With Us!

- https://www.ou.edu/coe/scbme/connect-and-give

There are many ways to connect with us!

o I would like to speak about my experience to Students.

o I would like to visit the Department

o I would like to donate

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Graduation Year & Degree (if applicable) _____

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