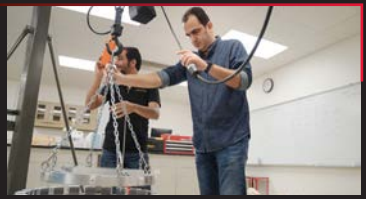
Petroleum Engineering Newsletter Spring 2022



FUELING THE FUTURE

ENGINEERED FOR
WHAT'S NEXT.

CULLEN
COLLEGE OF ENGINEERING
UNIVERSITY of HOUSTON

Letter from the Chair

Dear Colleagues,

I hope you are well. In this newsletter, you will find several highlights and stories from our department. We are proud to announce the addition of another NAI Fellow among our faculty, and we continue to engage in productive research, including partnerships with Shell and TotalEnergies. I invite you to come visit us when possible, and encourage you to reach out about opportunities for collaboration.

Warm Regards,

Mohamed Soliman, Ph.D., P.E., NAI
Department Chair and William C. Miller Endowed Chair Professor
Petroleum Engineering Department
Cullen College of Engineering
Univeristy of Houston

UH PE **BY THE NUMBERS**

FACULTY *(FALL 2021)*

5 NATIONAL ACADEMY OF ENGINEERING MEMBERS

2 NATIONAL ACADEMY OF INVENTORS FELLOWS

ENROLLMENT *(FALL 2021)*

92 UNDERGRADUATE STUDENTS

97 GRADUATE STUDENTS

DEGREES AWARDED *(2020 - 2021)*

34 B.S.

20 M.S.

3 PH.D.

UH PETROLEUM ENGINEERING RECOGNIZED AS
NO. 6 PROGRAM

The Petroleum Engineering Department at the Cullen College of Engineering has again been recognized for productive graduates and return on investment from its degrees, as it was named No. 6 on Steppingblocks' 2022 list of universities for petroleum engineers.

Steppingblocks is a data analytics firm headquartered in Atlanta. The company primarily collects and analyzes four types of data – education, employment, demographic and institutional – for its rankings.

According to Steppingblocks, their methodology narrowed their dataset of 130 million people to 3,147 petroleum engineers, and then examined the top universities by volume when it came to employed petroleum engineers. The University of Houston ranked No. 6 via this methodology.

In the write-up, the average salary for petroleum engineers with a degree from UH was $124,630. Schlumberger, Chevron and ExxonMobil were identified as the three top employers of UH graduates, with the relevant skills of hydraulic fracturing, petrophysics and formation evaluation.

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GANESH THAKUR

WINNER OF THE

2021
NATIONAL ACADEMY OF INVENTORS (NAI) FELLOWSHIP

FROM THE NATIONAL ACADEMY OF INVENTORS

NAI
National Academy of Inventors

A University of Houston professor in the Deparment of Petroleum Engineering has been named a Fellow of the National Academy of Inventors. **Ganesh Thakur**, Distinguished Professor of Petroleum Engineering and director of Energy Industry Partnership, will be officially inducted during the academy's annual meeting in June. Election to NAI Fellow is the highest professional distinction accorded solely to academic inventors.

Pictured Above: *Ganesh Thakur teaching a group of group of students.*

Thakur is a pioneer in carbon capture, utilization and storage (CCUS), a vital emissions reduction technology. His patent on forecasting performance of water injection and enhanced oil recovery (EOR) using a hybrid analytical-empirical methodology provided a much faster approach and served as an alternative to more time-consuming reservoir simulation. His team is continuing to push the research envelope for CCUS employing world-class lab research, simulation, machine learning and artificial intelligence.

Thakur, a member of the National Academy of Engineering, was recruited to UH in 2016 after almost four decades of industry experience with Chevron. He also serves as the director for Energy Industrial Partnerships at the University of Houston. This center represents efforts in upstream and midstream as it applies to important applications and will have an immense impact on the state of Texas in the field of energy. As a principal investigator, Thakur has secured external industrial research funding of $5 million in less than five years.

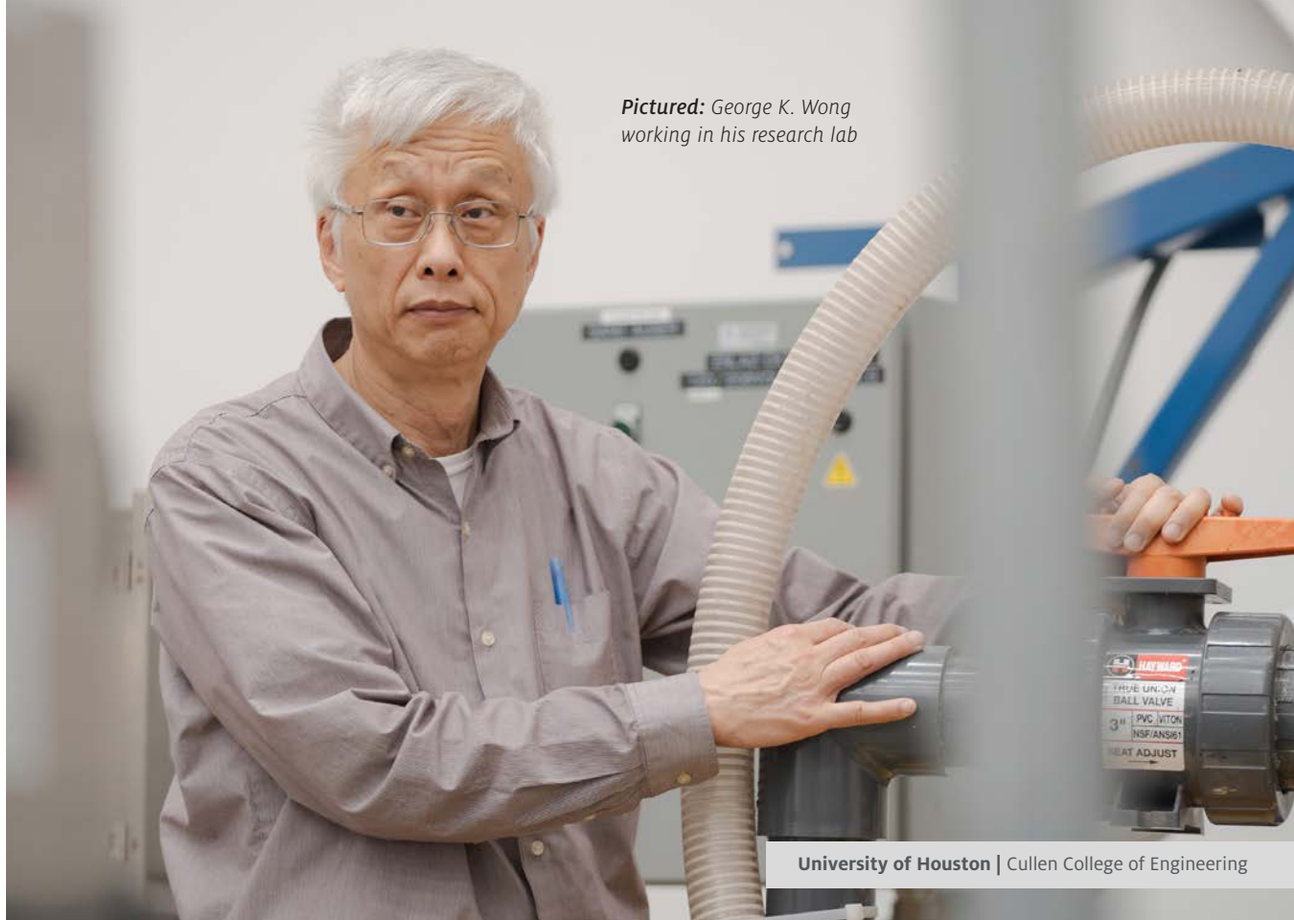
UH, SHELL, TOTALENERGIES SIGN $500K EXTENSION TO **$1M PROJECT**

A million-dollar research project between the Cullen College of Engineering at the University of Houston, Shell and TotalEnergies has been extended with another $500,000 grant from the two industry companies.

The initial $1 million research award, "Injector Experiments in Sand Pack with 3-D Confining Stresses," ran from October 2019 through September 2021. The extension will fund the project through September 2022.

According to the project summary, "To gain new insights and improve performance of injectors, we propose experiments to study the design factors of wellbore configurations, quality of injection fluids, injection conditions, and water hammer. The proposal uses the cubic cell, sand pack injector with 3-D confining stresses. Tests will study the effects of water hammer and water quality on injectivity for vertical and horizontal wellbores and in matrix and fracturing injection conditions."

The PI for the project has been **George K. Wong**, Ph.D., an Associate Professor in the Petroleum Engineering Department. **Lori Hathon**, Ph.D., an Assistant Professor in the same department, is a co-PI on the project. The project also involves inter-university collaboration between UH and the University of Illinois at Chicago's Department of Civil, Materials and Environmental Engineering. UIC serves as the project's subcontractor.



Pictured: *George K. Wong working in his research lab*

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ALUMNI SPOTLIGHT

Pictured: Vikrant Lakhanpal

PETROLEUM ENGINEERING

VIKRANT LAKHANPAL RECEIVES
ALUMNI DISTINCTION

Vikrant Lakhanpal (MS PETR '16) recently received the University of Houston's Engineering Alumni Association's (EAA) Distinguished Young Engineering Alumni Award. He was presented with the award at the EAA's annual gala last November.

The Distinguished Young Engineering Alumni Awards were established to recognize and honor young alumni (40 years old and younger) who have made significant contributions to society and whose accomplishments and careers have brought credit to the University of Houston Cullen College of Engineering.

Lakhanpal currently works as a petroleum engineer and technology integrator at Proline Energy Resources, Inc. He is also the co-founder of 1010 Coding, an entrepreneurial venture dedicated to bridging the gap between educational opportunities available in the United States and Nigeria.

Lakhanpal holds a master's degree in petroleum engineering from the University of Houston and a bachelor's degree in petroleum engineering from the University of Petroleum and Energy Studies, India.

He is actively involved in the Society of Petroleum Engineers (SPE), volunteers as a content creator for the technical topics section for The Way Ahead magazine, and serves as Director at Drilling Uncertainty Prediction Technical Section, Vice Chair for the Members-in-Transition committee, and Ambassador Lecturer for the Energy4Me program.

CHARLES ROXBURGH RECOGNIZED FOR

LIFETIME ACHIEVEMENT

Charles D. Roxburgh, P.E. (BSPE '62, MSPE '63), a longtime friend and supporter of the Cullen College of Engineering and the Petroleum Engineering Department, was presented with the Lifetime Achievement Award at the UH Engineering Alumni Association's annual 2021 gala, the highest honor given at the event.

Established in 2010, the Lifetime Achievement Award honors alumni who have made significant academic and/or professional achievements throughout the course of their careers. The award celebrates the culmination of a career, one that has impacted the profession, community and society through demonstrated leadership, ingenuity and service.

Roxburgh has had a long and fruitful career, including holding positions such as VP of Exxon U.S. Producing Operations, VP of Operations in Asia, CEO of Exxon Malaysia Affiliate, and VP of Exxon International. He retired in Houston as President of Exxon Coal and Minerals after more than 30 years of service with the company.

Roxburgh has been a loyal supporter of the Cullen College over the years, including serving on the alumni board and its finance committee, heading the Petroleum Engineering Advisory Committee, and providing assistance to the department chairman. In 1992, he received the Distinguished Engineering Alumni Award from the EAA.

Pictured: *Charles D. Roxburgh*

The University of Houston
Cullen College of Engineering

The University of Houston Cullen College of Engineering addresses key challenges in energy, healthcare, infrastructure and the environment by conducting cutting-edge research and graduating hundreds of world-class engineers each year. With research expenditures topping $40 million and increasing each year, we continue to follow our tradition of excellence in spearheading research that has a real, direct impact in the Houston region and beyond.

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