

Dr. Vikram Vishal



Dr. Vikram Vishal is a promising young expert on reservoir geomechanics in India, having worked extensively in the field of hydro-dynamics of fluid flow in coal and shale. The most significant contribution of Dr. Vishal is on carbon sequestration for enhanced natural gas recovery in Indian unconventional hydrocarbon reservoirs. Dr. Vishal designed and fabricated a novel, high precision, pressure-temperature controlled triaxial experimental setup to replicate the deep sub-surface conditions in the laboratory. Using the setup, he made significant

progress in understanding the phase change behavior of carbon dioxide in deep seated reservoirs – he contributed two single-author articles in high impact journals on these works. His recognized publication in the leading international journal, *Energy*, contained the initial documentation of field scale coupled CO₂-enhanced coalbed methane recovery for India. Parametric studies of the established model revealed that the CO₂ intake capacity of high sorption time coal was significantly higher than coal with low sorption time. Therefore, if not suitable for economical extraction of methane, these may alternatively be utilized as CO₂ sinks.

Dr. Vishal has also led research on gas shales – he experimentally determined the pore and surface area characteristics of shales. His contributions in the group led to the new outgassing protocol for gas adsorption in shales. Through the dynamic column breakthrough experiments, he demonstrated coupled adsorption-flow in controlled compositions of gas shales. These works will prove beneficial in India's quest for energy, while partly resolving the climate change issues through the disposal of anthropogenic CO₂. Dr. Vishal is working on implementing digital petrophysics and neutron scattering for understanding the reservoirs in India. Other notable works by Dr. Vishal include group research on rock friction analysis, rock mechanics, slope stability and rockfall.

Dr. Vikram Vishal is an Assistant Professor in the Department of Earth Sciences, Indian Institute of Technology Bombay, Mumbai and an Adjunct Lecturer in the Department of Civil Engineering, Monash University, Australia. He received his M.Sc. degree in Applied Geology from IIT Bombay. After a brief stint as a geologist in Tata Steel, he pursued his Ph.D. degree during 2010-2012, jointly at IIT Bombay and Monash University, where he won the Best thesis Award. He went on to pursue further research as a Fulbright Postdoctoral fellow at Stanford University, USA during 2014-2015.



Dr. Vishal has 'i' index and 'h' index equal to 19 and 15 respectively with total citations at 715. He holds to his credit over 40 publications on different domains of geomechanics, carbon storage, enhanced gas recovery, and engineering geology. He serves as an Associate Editor for the Journal of Natural Gas Science and Engineering (IF: 2.718; Rejection Rate: 74%). His recently edited book on “Geologic Carbon Sequestration: Understanding Reservoir Concepts” by Springer with contributions from subject experts from over ten countries, has received an overwhelming response worldwide. His contributions fetched him the National Geosciences Award – Young Researcher by the Ministry of Mines, the Young Scientist Medal by the Indian National Science Academy, and the Young Scientist Award by the Indian Science Congress Association.

In recognition to his outstanding research contributions in the field of Earth System Science the Ministry of Earth Sciences honours Dr. Vikram Vishal with the “Young Researcher Award in the field of Earth System Science” for the year 2017.