



Fuel Research; Study Findings on Fuel Research Are Outlined in Reports from University of Texas Austin (Digital Rock Techniques To Study Shale Permeability: a Mini-review)

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2021 FEB 5 (VerticalNews) -- By a News Reporter-Staff News Editor at Energy Weekly News -- Investigators discuss new findings in Fuel Research. According to news originating from Austin, Texas, by VerticalNews correspondents, research stated, "Because of recent advances in digital imaging techniques, the use of these techniques has become popular in unconventional reservoirs. Current images can disclose information at very high resolutions."

Financial supporters for this research include NanoGeosciences Laboratory, Mudrock Systems Research Laboratory (MSRL) consortium at the **Bureau of Economic Geology** (The University of Texas at Austin).

Our news journalists obtained a quote from the research from the University of Texas Austin, "This trait is especially applicable to shales, which contain multiscale pore space ranging from nano- to macroscale. Various computational methods have been developed to take advantage of these information-rich images and provide results equivalent to those observed in experimental tests. However, as in traditional rock physics and geomaterials problems in general, there is the issue of uncertainties in mineralogy and pore space. Various images must be produced to minimize these uncertainties, which is costly and time-consuming. The resolution of the available images has also posed issues of lost accuracy, and the limitations of two-dimensional space make the use of such images challenging for conducting realistic computational modeling. The issues and opportunities surrounding digital imaging techniques have resulted in the development of several computational methods for accurately characterizing shale samples, evaluating physical properties, and quantifying uncertainties. These reconstruction methods all aim at accurately predicting permeability. Once these realizations developed, the flow of single-phase gas, single-phase liquid, or two-phase fluid can be modeled to study gas permeability, liquid permeability, or relative permeability, respectively."

According to the news editors, the research concluded: "In this paper, we review recent progress in these methods as well as guidelines for future research."

This research has been peer-reviewed.

For more information on this research see: Digital Rock Techniques To Study Shale Permeability: a Mini-review. Energy & Fuels, 2020;34(12):15672-15685. Energy & Fuels can be contacted at: American Chemical Society, 1155 16TH St, NW, Washington, DC 20036, USA. (American Chemical Society - www.acs.org; Energy & Fuels - www.pubs.acs.org/journal/enfuem)

The news correspondents report that additional information may be obtained from Farzam Javadpour, University of Texas Austin, Jackson School of Geosciences, Bureau of Economics, Austin, TX 78712, United States. Additional authors for this research include Pejman Tahmasebi and Samira F. Enayati.

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