

**Science - Geoscience; Study Results from University of Texas Austin in the Area of Geoscience Published (The Effects of Facies Variability and Bioturbation Intensity on Permeability in a Mixed Siliciclastic-Carbonate Core from the Upper Strawn Group, Katz Field, ...)**

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2025 JAN 17 (NewsRx) -- By a News Reporter-Staff News Editor at Science Letter -- Investigators publish new report on geoscience. According to news reporting out of Austin, Texas, by NewsRx editors, research stated, "For oil and gas reservoir characterization, permeability prediction is indispensable because it helps identify potential flow pathways and lowers risk. Estimating permeability in heterogeneous media is challenging due to the limited number of measurement tools, low-resolution sampling methods, and sampling bias."

Financial supporters for this research include State of Texas Advanced Resource Recovery Program.

The news correspondents obtained a quote from the research from University of Texas Austin: "To combat these issues, we employed a probe permeameter to produce a high-resolution (4 in [10 cm] spacing) permeability dataset for cores from the Strawn Formation, Katz Field, Permian Basin, Texas, USA. We structured our sampling to record permeability changes related to facies variability and fluctuating bioturbation intensity. We compared probe permeameter data to wireline logs and core-plug porosity and permeability data recorded at larger spacings. The results show that permeability is affected by facies type, bioturbation intensity, and cementation. The effects of bioturbation are non-linear; in our study, moderate bioturbation enhances permeability by improving connections between sands while intense bioturbation decreases permeability by redistributing fines. Core-plug and probe measurements gave similar permeability values, but the number of core plugs taken in the finer-grained intervals was insufficient."

According to the news reporters, the research concluded: "The probe, however, provided better resolution and gave larger net-to-gross sand ratios than core-plug-based evaluations. Using only the core-plug porosity-permeability relationship with wireline density log porosities led to permeability predictions too large by a factor of three or more compared to averaged probe permeameter values."

For more information on this research see: The Effects of Facies Variability and Bioturbation Intensity on Permeability in a Mixed Siliciclastic-Carbonate Core from the Upper Strawn Group, Katz Field, Eastern Shelf of the Permian Basin, Texas, USA. Geosciences, 2024,14(12):339. (Geosciences - <http://www.mdpi.com/journal/geosciences>). The publisher for Geosciences is MDPI AG.

A free version of this journal article is available at <https://doi.org/10.3390/geosciences14120339>.

Our news editors report that more information may be obtained by contacting Jerry L. Jensen, **Bureau of Economic Geology**, University of Texas Austin, Austin, TX 78758, United States. Additional authors for this research include Peter P. Flaig, Kelly E. Hattori.

Keywords for this news article include: University of Texas Austin, Austin, Texas, United States, North and Central America, Geoscience.

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