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**Science; Findings from University of Texas in Science Provides New Insights (Multiscale and multiresolution modeling of shales and their flow and morphological properties)**

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2016 SEP 30 (NewsRx) -- By a News Reporter-Staff News Editor at Science Letter -- Investigators discuss new findings in Science. According to news reporting from Austin, Texas, by NewsRx journalists, research stated, "The need for more accessible energy resources makes shale formations increasingly important. Characterization of such low-permeability formations is complicated, due to the presence of multiscale features, and defies conventional methods."

The news correspondents obtained a quote from the research from the University of Texas, "High-quality 3D imaging may be an ultimate solution for revealing the complexities of such porous media, but acquiring them is costly and time consuming. High-quality 2D images, on the other hand, are widely available. A novel three-step, multiscale, multiresolution reconstruction method is presented that directly uses 2D images in order to develop 3D models of shales. It uses a high-resolution 2D image representing the small-scale features to reproduce the nanopores and their network, a large scale, low-resolution 2D image to create the larger-scale characteristics, and generates stochastic realizations of the porous formation. The method is used to develop a model for a shale system for which the full 3D image is available and its properties can be computed. The predictions of the reconstructed models are in excellent agreement with the data. The method is, however, quite general and can be used for reconstructing models of other important heterogeneous materials and media."

According to the news reporters, the research concluded: "Two biological examples and from materials science are also reconstructed to demonstrate the generality of the method."

For more information on this research see: Multiscale and multiresolution modeling of shales and their flow and morphological properties. Scientific Reports, 2015;5():16373. (Nature Publishing Group - [www.nature.com/](http://www.nature.com/); Scientific Reports - [www.nature.com/srep/](http://www.nature.com/srep/))

Our news journalists report that additional information may be obtained by contacting P. Tahmasebi, Bureau of Economic Geology, Jackson School of Geosciences, The University of Texas at Austin, 78713, Austin, TX, United States. Additional authors for this research include F. Javadpour and M. Sahimi.

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

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