



**Energy - Oil and Gas Research; Reports on Oil and Gas Research from University of Texas Provide New Insights (Observations on the origin of micrite crystals)**

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2017 OCT 20 (VerticalNews) -- By a News Reporter-Staff News Editor at Energy Weekly News -- Fresh data on Energy - Oil and Gas Research are presented in a new report. According to news reporting from Austin, Texas, by VerticalNews editors, the research stated, "The transformation of depositional lime mud to microporous micrite has been the subject of several important papers recently in response to the recognition that micropores are important to the production of carbonate hydrocarbon reservoirs. The origin of micrite has generally been described as a micro dissolution and reprecipitation process (often referred to as Ostwald ripening), with nanometer-sized depositional particles being dissolved and larger crystals (micrite) averaging 2  $\mu$  m in diameter being precipitated."

Funders for this research include Carbonate Reservoir Characterization Research Laboratory of the Bureau of Economic Geology, Jackson School of Geosciences, University of Texas at Austin.

The news correspondents obtained a quote from the research from the University of Texas, "These conclusions were tested by detailed scanning electron microscope (SEM) observations of micrite and minimicrite crystals found in the mid-Pliocene to upper Miocene section of the Clino core taken on the western edge of the Bahama Bank. Minimicrite in this data set is shown to be composed of both aragonite and calcite with calcite being the dominant mineral. In addition, micrite crystals are composed of cemented nanometer-sized calcite crystals and are not individually precipitated calcite crystals. As a result, the faces of the micrite are anhedral and knobby in appearance rather than being smooth, euhedral crystal faces. Extensive size measurements could find no size selectivity in the dissolution of the calcite minimicrite, indicating that the Ostwald ripening process is not active. Aragonite and calcite crystals are dissolved and some calcite crystals act as nuclei for the precipitation of the dissolved carbonate. The origin of the micropores is also debated. Some authors call upon a dissolution event to increase porosity of a partially cemented micrite, based largely on the anhedral nature of the micrite. Others conclude that porosity is originally inherited from the deposition lime mud and that porosity is lost by overgrowth cementation, which results in euhedral micrite crystals. The observations presented here show that anhedral crystals are due to the inclusion of nanometer calcite crystals rather than to dissolution of euhedral crystals."

According to the news reporters, the research concluded: "Lastly, these micrite crystals are formed by calcite and aragonite sediment precipitated from an aragonitic sea, disproving the assertion of some authors that porous micrite only forms from sediments deposited in calcitic seas."

For more information on this research see: Observations on the origin of micrite crystals. *Marine and Petroleum Geology*, 2017;86():823-833. *Marine and Petroleum Geology* can be contacted at: Elsevier Sci Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, Oxon, England. (Elsevier - [www.elsevier.com](http://www.elsevier.com); *Marine and Petroleum Geology* - [www.journals.elsevier.com/marine-and-petroleum-geology/](http://www.journals.elsevier.com/marine-and-petroleum-geology/))

Our news journalists report that additional information may be obtained by contacting F.J. Lucia, Univ Texas Austin, Bur Econ Geol, Jackson Sch Geosci, Austin, TX 78713, United States.

The direct object identifier (DOI) for that additional information is: <https://doi.org/10.1016/j.marpetgeo.2017.06.039>. This DOI is a link to an online electronic document that is either free or for purchase, and can be your direct source for a journal article and its citation.

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