

# Technology of photogrammetrical imaging and processing of the sample surface aimed to porosity definition

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## Abstract

© SGEM2018. To date, the photographic methods of core analysis are represented mainly by multispectral and luminescent analyses. There is, however, one more method called close-range photogrammetry allowing creation of three-dimensional models of core samples. This means that one can obtain a high-resolution image of the core sample's surface and then use it as a virtual thin section. This paper presents a method for obtaining textures and surface patterns of the core, as well as techniques for their processing with the aim of porosity determination. In addition, an approach to photography automation and image analysis is demonstrated using a set of spatial analysis tools and computer vision. The proposed methods and techniques were tested on samples of various size and lithology. The results were compared to those obtained via traditional methods of porosity determination. This comparison showed the possibility of applying the aforesaid approach to the rapid analysis of borehole materials and further inclusion of data obtained with it in any study, on an equal basis with logging data.

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## Keywords

Close-range photogrammetry, Core, Reservoir properties, Well logging

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