

Compensating Filter for Computed Tomography of core Samples from Oil and Gas Fields

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The effect of an aluminum compensating filter on the signal-to-noise ratio in core samples tomograms is investigated. When scanning the core, a compensation filter in the form of an aluminum parallelepiped with a hole approximately equal to the diameter of the core was used. The filter is fixed above the stage, the core is placed in the hole and rotates inside the filter. It is shown that the filter provides the maximum contrast of the useful signal over the entire dynamic range of the scintillation flat detector. After the normalization of the core projections to the filter without the core, the obtained projections were used as input data for reconstruction based on the Feldkamp algorithm. The signal-to-noise ratio of the resulting tomograms is improved about two times as compared with the case of a conventional flat aluminum filter.

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