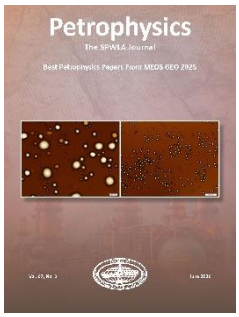

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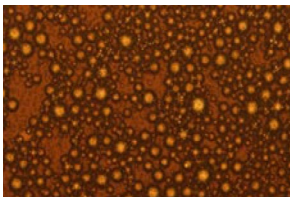
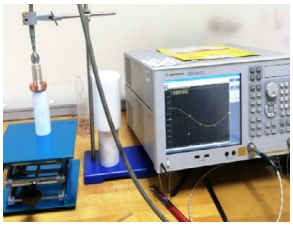


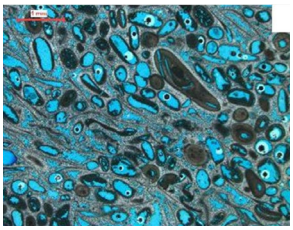
Albenayyan et al. **PAGES 594-618**

This study introduces a combined dielectric-microscopic approach to characterize water-in-oil and oil-in-water emulsions across a wide frequency range. By correlating dielectric responses with droplet-scale features, the method enables reliable identification of emulsion type, stability, and structural evolution over time. The results highlight its potential as a noninvasive tool for improving multiphase fluid characterization in both laboratory and field applications.



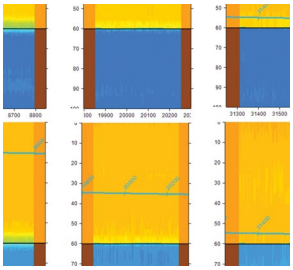
Al-Qouzi et al. **PAGES 482-508**

This study experimentally investigates the sensitivity of multifrequency (MF) dielectric measurements to hydraulically induced fractures in sandstone and carbonate formations under controlled laboratory conditions. The results demonstrate that fracture presence, orientation, and proximity significantly influence frequency-dependent dielectric responses, particularly under brine-saturated conditions due to interfacial polarization effects. These findings provide a physical basis for improving the interpretation of dielectric measurements in fractured reservoirs.



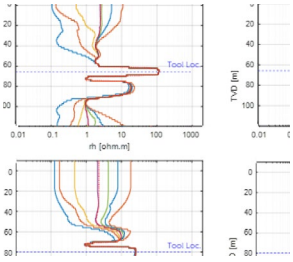
AlZoukani et al. **PAGES 470-481**

This study investigates the relationship between carbonate pore types and dielectric permittivity using laboratory measurements and digital image analysis (DIA). The results demonstrate that pore geometry strongly controls dielectric response, with clear correlations between permittivity and quantitative pore-structure parameters. These findings highlight the potential of dielectric measurements to differentiate pore system characteristics relevant to carbonate reservoir evaluation.



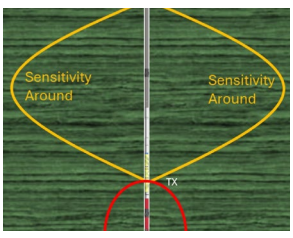
Bower et al. **PAGES 544-559**

This paper summarizes the sensitivity of tilted antenna ultradeep azimuthal resistivity (UDAR) architecture to electromagnetic formation anisotropy, exploring specifically variations in transmitter-to-receiver spacing, firing frequency, and formation resistivity. Sensitivity is also explored for both the near-field and far-field contexts. The findings illustrate that longer spacing and higher firing frequency maximize sensitivity in the near-field environment; however, sensitivity is generally low in the far-field context. The major controlling factor in both instances is the resistivity of the medium in which the tool is located.



Bower et al. **PAGES 560-570**

This paper investigates different methods to estimate uncertainty from a deterministic parametric inversion derived from a deep or ultradeep azimuthal resistivity tool. It was found that in most simple, one-dimensional (1D) environments, 50 initial guesses would be sufficient to describe the average estimate of the statistical distribution of the electrical resistivity. An appropriate characterization of the wider statistical distribution (e.g., P5 to P95) can be obtained by sampling the space of feasible models around the average model in an a posteriori manner, i.e., after an average distribution has been determined.



El-Khamry et al. **PAGES 571-580**

This paper presents a three-dimensional (3D) look-ahead electromagnetic inversion approach for near-vertical wells, bridging the gap between conventional one-dimensional (1D) vertical applications and 3D horizontal geosteering workflows. The method enables earlier detection and more reliable mapping of resistivity variations ahead of the bit, particularly in geologically complex environments with lateral heterogeneity. Field results demonstrate improved subsurface understanding and enhanced decision making for safer and more efficient drilling operations.

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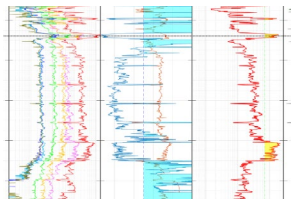
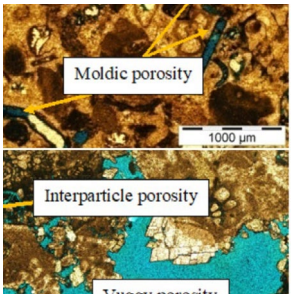


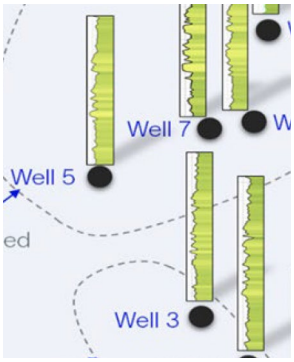
Luo et al. **PAGES 582-593**

An improved mud gas ratio method, incorporating three key gas parameters, enhances traditional mud logging to identify eight distinct fluid types while drilling. Automated via the GeochemLog software, this refined approach establishes a robust link between mud gas ratios and hydrocarbon fluids, facilitating real-time fluid identification and supporting quick decisions regarding fluid and rock sampling, as well as well testing



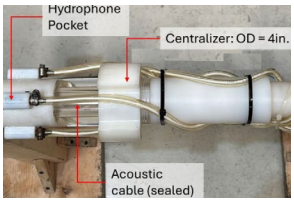
Manuaba et al. **PAGES 509-524**

This analysis presents a multidomain workflow integrating dielectric dispersion, NMR logs, and advanced downhole formation testing to estimate fluid saturations and characterize heterogeneous carbonate reservoirs. The approach differentiates movable and immovable fluids, improves petrophysical property estimation, and verifies vertical salinity variations, offering clear advantages over traditional methods for optimizing oil recovery. It also highlights the critical role of pore-size distribution, in which micropore-dominated zones trap immovable oil while larger pores support the presence and flow of movable hydrocarbons. This approach can be adapted to diverse field conditions for both static and dynamic reservoir evaluation.



Sultan et al. **PAGES 525-542**

This paper illustrates the workflow and results to build depositional and stratigraphic models for three key Cretaceous reservoir formations in southeastern Iraq by combining borehole image logs, core data, and petrophysical logs. It shows that reservoir quality and heterogeneity are primarily controlled by facies architecture, with high-energy carbonates, deltaic sands, and rudist buildups forming the best reservoirs, while lagoonal and fine-grained deposits act as barriers. The study demonstrates that integrating borehole imaging significantly improves the identification of sedimentary structures, depositional environments, and key stratigraphic surfaces, especially in diagenetically altered carbonates. Overall, the refined depositional models provide a more reliable framework for reservoir characterization, correlation, and field development planning in complex carbonate-clastic systems.



Zeghlache et al. **PAGES 619-631**

This research focuses on the acoustic emission monitoring of multiphase flow in intelligent completions. The study evaluated single- and two-phase flows at various rates, correlating acoustic energy with fluid flow properties. Test results showed successful correlations between flow rates and acoustic signal characteristics, indicating potential for early detection of water and gas breakthrough.