Special Issue

Drilling Engineering Technologies: Fluid Systems, Automation, and Process Optimization

Message from the Guest Editors

Drilling engineering is rapidly evolving, integrating advanced fluid systems, automation, and process optimization to enhance efficiency, safety, and environmental performance. Drilling fluids (mud) remain central to these operations, fulfilling critical functions such as cuttings removal, tool lubrication, and wellbore stability in increasingly complex formations.
Alongside fluid innovations, automation, and data-driven processes, optimization is playing a transformative role in drilling engineering. This Special Issue invites contributions (original research and reviews) on recent developments in drilling fluid technologies, automation applications, and optimization methodologies for drilling, completion, workover, and hydraulic fracturing operations. Topics of interest include, but are not limited to, the following: smart fluid design; rheology and hydraulics modeling; automated monitoring and control; cutting transport efficiency; loss circulation management; green additives; waste reuse; nanoparticle applications; and data-assisted drilling optimization.

Guest Editors

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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