CALL FOR PAPERS

PETROPHYSICS BEYOND PETROLEUM – STATE OF TECHNOLOGIES

Introduced almost 100 years ago, petrophysical/well-logging technology has made remarkable advances and played a key role in the oil industry's success in providing the energy needed for the tremendous economic growth of the 20th century. With an impending transition away from fossil fuels, the application of these techniques in non-petroleum energy systems is of interest. Two areas that have already drawn attention are monitoring CO_2 sequestered in the geology in carbon capture and sequestration (CCS) projects to mitigate climate change and characterization of geological sites for burying high-level radioactive waste from nuclear power plants. A realization is growing that the currently identified volumes of minerals required in electric vehicles (EVs), photovoltaics (PVs), and geothermal for the clean energy transition are insufficient, and thus subsurface mining would be needed. Additionally, hydrogen has been of much interest as a clean fuel, with geologic hydrogen generating a significant buzz; the US Department of Energy has just announced $20 million in funding for research on technologies to "Explore the Potential of Geologic Hydrogen."

While promises have been noted in applying current well-logging techniques in some of the above problems, a major question arises on the current state of the petrophysics/well-logging techniques used in the petroleum industry: Will they be optimally usable in these low-carbon applications? A special session at the SPWLA 64th Annual Symposium explored a few of these issues and indicated a need for a fuller discourse that includes non-industry experts. The proposed special volume of *Petrophysics* will provide an avenue for such a discourse, with details on the science, applicability, strengths, and limitations of current petrophysical techniques if applied to low-carbon energy options and the potential technological advances needed. This volume is expected to become a reference document to encourage the industry, academia, and other players, such as the US Department of Energy or the International Atomic Energy Agency, to engage in the R&D necessary to address the question above.

The following guidelines should help:

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3. Original material is, of course, allowed, provided approvals for publication are obtained before submission.

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Dr. Ahmed Badruzzaman | Special Issue Guest Editor