Dear SPWLA members,

First, thank you for trusting me to be your VP Publications, thus chief editor of the SPWLA's *Petrophysics* journal and *SPWLA Today* newsletter, for the next 2 years, from 2024 to 2026. At the same time, I would like to thank my employer of 20+ years, Saudi Aramco, and my management for allowing me to volunteer for professional societies like SPWLA to enhance my professional development and, more importantly, the young professionals who I have associated with—the future of this industry and beyond, as featured in this special issue on emerging petrophysics in the era of new energies. For professional development enhancement, I would like to acknowledge the efforts of my teammates at the SPWLA Saudi Arabia Chapter. Since its official 2016 establishment from the original small Saudi Petrophysics Society, we have been busy and actively focusing on knowledge sharing and technology updating by conducting numerous lunch-and-learn events and, maybe more importantly, our semi-annual topical workshops that have attracted thousands of participants. For example, the three-day 14th Workshop on Geothermal Energy was a big success, and we have just started planning our 15th Workshop on Water Petrophysics and Water Management in the second half of the year. Stay tuned!

Now, back to the *Petrophysics* journal. During the recent election, all three candidates for VP Publications (thanks to Andrew Barry of Continental Resources and Sami Eyuboglu of Halliburton) offered several proposals regarding journal impact enhancement. Please reach out if you have any feedback. I am open to all ideas in terms of:

- **Training young professionals**, especially those whose native language is not English, as proposed by Andrew and Sami.
- **Improving efficiencies to shorten the paper reviewing process**. To help speed up communications, we have created a WhatsApp group for editors so that questions can be answered in near-real time; thus, any issues can be resolved quickly and in a timely manner.
- **Raise the profile of the journal**. To help raise the journal's profile, a LinkedIn group, Petrophysics Journal- SPWLA, has been created. You are all welcome to join us in discussing papers published in the journal with authors, editors, and among your peers.

As you may have noticed, several of our editors have retired from the Editorial Board. We thank them for their services to the SPWLA community. Several others have just joined the team as editors, and I extend a warm welcome to them. For those editors who stayed, thank you for your continuous commitment to serving and helping improve the integrity and quality of the journal, as well as assisting authors to improve their technical work, an important aspect of professional achievements for the authors and for us, as "teaching" is the best way of learning! In addition, you may have noticed that we have added a few new subject areas and reordered those subjects, trying to follow the workflows of operational petrophysics (Ma, 2015).

Although I have served for several years as an editor for coring and core analysis for the *Petrophysics* journal, this is the first time I have appeared in front of you as the journal's chief editor. Much of the hard work on this special issue is due to our guest editor, Dr. Ahmed Badruzzaman, "former" chief editor, Dr. Stephanie Perry, managing editor, Ms. Elizabeth Naggar, and her editorial team. As you will see, Ahmed will briefly introduce the four papers that are themed as new (non-hydrocarbon) energy. Below are briefs of the other four papers, which are regular submissions to the journal. One discusses borehole imaging automation, two are on source rock shale evaluation, and the last one is about petrophysical rock typing.

Efficient LWD Image Logs Interpretation Using Deep Learning

Molossi et al.

In the era of digitalization, applications of ML/AI are many; for example, see ChatGPT. For petrophysical applications, some of the lower hanging fruits may be the automation of image analysis, with the objectives of enhanced efficiency, improved quality and consistency, and shortened delivery time, such as borehole image log interpretation as presented by Molossi et al., who tested both synthetic and field data, with two deep-learning methods: the "standard" learning and curriculum learning.

Determine Oil and Water Saturations in Preserved Source Rocks From 2D T_1-T_2 NMR

Althaus et al.

Source rock shales are intrinsically difficult to characterize downhole as well as in the laboratory, primarily due to their tiny pores, which make it difficult for fluids to flow through. The existence of kerogen and its distributions obviously add

another layer of complexity. Consequently, conventional technologies are challenged, and new fit-for-purpose technologies are demanded and thus developed, such as this work by Althaus et al. to use higher frequency nuclear magnetic resonance (NMR) to quantify oil and water saturations in shale source rocks, which is much faster than the conventional invasive Gas Research Institute (GRI) method.

Study on the Damage and Failure Process of Prefabricated Hole-Fracture Combination Defects in Shale
Jiang et al.

Because shale source rocks are so tight, to produce from them, they need to be fracture-stimulated to improve reservoir contact and fluids' mobility while borehole stability is maintained. To achieve these goals, detailed rock/geomechanical studies are essential parts of unconventional source rock reservoir evaluation and development, as described in this study by Jiang et al., who investigated specific effects of fracture angle on stress concentration, elastic modulus, compressive strength, and peak strain.

A New R35 and Fractal Joint Rock Typing Method Using MICP Analysis: A Case Study in Middle East Iraq
Duan et al.

Rock typing is still a significant challenge for almost all subsurface reservoir modeling (SPWLA Saudi Arabia Chapter workshop, 2017), and new innovative approaches to resolve this challenge are needed. In this paper, Duan et al. studied MICP-based pore-throat-size distribution and thin-section image analysis in detail using fractal analysis and combined it with the conventional Winland R35. The devised fractal dimension parameter is proposed as an indicator of pore distribution for better reservoir characterization, especially in carbonate rocks with complex pore structures.

To close, please enjoy what one of our industry's legends, Dr. Ahmed Badruzzaman, whom I have known and worked with for many years, has to say about energy transition and new energies, and I am sure that we can all learn something valuable from Ahmed and the other authors in this special issue of *Petrophysics*.

Happy Learning!
S. Mark Ma
SPWLA VP Publications and Chief Editor, *Petrophysics*

REFERENCES

Ma, S., 2015, Technology Focus: Formation Evaluation, Paper SPE-0815-0076-JPT, *Journal of Petroleum Technology*, **67**(8), 76. DOI: 10.2118/0815-0076-JPT.

SPWLA Saudi Arabia Chapter, 2017, Linking Geological Facies and Petrophysical Rock Types, Two-Day Workshop, Dhahran, Saudi Arabia, 28–29 November. URL: Linking Geological Facies and Petrophysical Rock Types – SPWLA Saudi Arabia Chapter (SAC) (spwla-saudi.org).