

Experimental characterisation of energy possession and losses of industrial gases



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Abstract

The competitiveness of the energy impact for common industrial gases (CH₄, N₂, Air and CO₂) in porous media has been determined through an extensive and rigorous experimental approach. Fluid flow through porous media involves an energy continuum. The energy interactions could be due to either or both geological structures and contact with other pore fluids. Some authors have characterised gas behaviour for permeability, velocity, flow rate, and flow regime. However, there is a shortage of studies that explicitly qualifies and quantifies the characterisation of energy possession and energy loss for gases permeating porous system. Thus, this research has selected these two quantities as objective functions for experimental investigation.

Biography

Ofasa Abunumah is a Senior Petroleum Engineer at the Ministry of Petroleum Resources, Nigeria. He is currently leading some researchers at the Centre for Process Integration and Membrane Technology at the Robert Gordon University (|RGU), United Kingdom. He has acquired several qualifications in Chemical Engineering, Petroleum and Environmental Technology, Business and Accounting and Information Technology. He has over 10 years of experience working in the oil and gas industry. He has been part of crucial petroleum data management projects in the Ministry of Petroleum Resources, Hiladol Nigeria Limited and RGU, such as the Compendium of Petroleum Statistics, Data mining of Global Enhanced Oil Recovery Projects. His recent research focus is on membrane technology, gas flow through porous media and Enhanced Oil Recovery technologies. His strengths are in experimental, mathematical and cost modeling..



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