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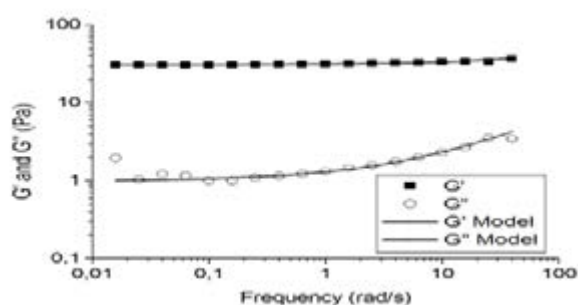
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Structure and rheology studies of montmorillonites aqueous solutions

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Statement of the Problem: this paper studies the rheological behaviour of montmorillonites aqueous solutions for various mass concentrations. The several techniques: X-ray scattering to determine their composition and structure, the light scattering to determine the diffusion coefficient of the clay particles and their size and the rheometry to determine the viscoelastic moduli were used to investigate the structure formed by the bentonite

suspensions. The rheological measurements show that the bentonite particles are structured to form a fractal network. Knowing the structure of these suspensions and characteristic time, on the one hand, using Piau model, we have derived its fractal dimension ($D=1.74 \pm 0.08$) and on the other hand, using Chambon and Winter model, we tried to model their shear complex modulus $G^*(\omega)$.



Biography

Mourad Gareche received his PhD in 2013 and HDR in 2016 from University M'Hamed Bougara of Boumerdes (UMBB), Algeria. Now, he is Lecturer and Reseacher in laboratory engineering of hydrocarbons-UMBB. His research areas include rheology, complex fluids, structure-fluid interaction, viscoelasticity, porous media, enhanced oil recovery and nanofluids. His research results include over 30 Engineer and Master Graduates, 2 photocopied lessons, over 50 refereed journal and conference papers and supervision 4 theses.

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