Drilling fluids, from an academic research project to the establishment of a service company
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It is well known that drilling fluids play a major role in drilling operations of oil and gas wells worldwide. Various science and engineering concepts including fluid mechanics, rheology, hydrodynamics, material science, multiphase flow, as well as formation damage prevention, reservoir protection and drilling economy are amongst items that play major role in drilling fluids engineering and services. My familiarization with drilling fluids goes back to 1992 when I initiated my postgraduate study for the degree of MSc in the Department of Chemical Engineering at Imperial College-London. A research project titled "Particle Rheology in Viscous Media" supervised jointly by late Professor Brian Briscoe and currently my good friend Professor Luckham was defined and I was the research student. The investigation aimed to experimentally evaluate the effectiveness of Doughtery-Krieger equation in prediction of the rheological behavior of non-coagulating particulate suspensions in Non-Newtonian media. At first glance the project seemed academic in nature, but the results of that research showed itself into two merits in my life, firstly it was considered as distinction grade in my academic achievement and secondly a few years later directed me into establishing a drilling fluids service company which currently employs more than 150 people. Therefore, from an academic research to industrial research and practice in rendering services to offshore platforms and onshore rigs provided a deep insight of the impact of drilling fluids on drilling economy and safe operations. I would like to share these concepts throughout my presentation of today.