

ABSTRACT

A suspension of PMMA spheres in a density matched saccharose solution is investigated with a classical Searle rheometer and a NMR (Nuclear Magnetic Resonance) spectrometer. Here the NMR is used to measure the radial distribution of the PMMA spheres in the rotating cell, in addition to the local velocity profile of the suspension. The influence of particle concentration on the wall depletion is studied. Further analysis are carried out with computational fluid dynamics software. The velocity field as well as the solid distribution in the couette flow is simulated with a two-phase model including the Darcy law and compared to the experimental data.