H. Salem, S. Mokamati, S. Delfel, J.A. Olson & D.M. Martinez

We visualize experimentally both the concentration and velocity fields of a fibre suspension in the vicinity of wall with suction. The wall is considered rough with repeating contours machined onto the surface. Under dilute conditions we characterize the flow field with both particle image and laser Doppler velocimetry at various combinations of the ratio of the crossflow to suction velocities and compare these to CFD estimates. Both steady state and time dependent simulations were performed. In addition, a series of experiments were conducted to both map the concentration field near the vicinity of the slots using high speed video imaging and estimate the trajectory of individual tracer fibres.