SL 13.4

Flow visualisation in a single screw channel

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A new device to visualise flow of a viscous fluid in the channel of a screw is presented. It consists of a transparent barrel and of a rotating screw, pumping a transparent viscous fluid at room temperature. A Particle plunged in the flow is constantly monitored by four digital-cameras placed around the barrel and recording its position in a frame. The 3D pathlines are then computed off line and presented here. Comparison to analytical calculations of pathlines is also shown.