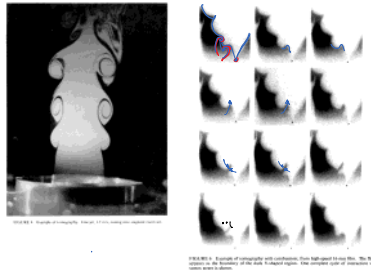


FIGURE 1 Experimental apparatus. The bright region is a cloud of oil droplets (illuminated by the laser).



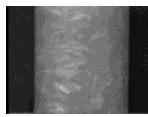
Particles for Water

Rheoscopic fluids:

Pearl Ex (art pigment, TiO₂ coated mica).

'Pearl Swirl' SS (patron from Steve Spangler Science)
 Shiny opaque or translucent particles, crystal flakes, ~10 μm size, aligns with shear gradient.
 Used in soaps, shampoos
<https://www.youtube.com/watch?v=vtTM906owwI>

Probably the same as:
 Stearic acid crystals extracted from shaving cream,
 Borrero-Echeverry, Daniel, Christopher J. Crowley, and Tyler P. Riddick. "Rheoscopic Fluids in a Post-Kalloscope World." *Physics of Fluids* 30, no. 8 (August 1, 2018): 087103.
<https://doi.org/10.1063/1.5045053>



Check out the Taylor Couette instability demo in the ITLL Lobby. Tall blue column.

'Blackstock' fluid, now 'YaleidoFlow Rheoscopic Fluid'



Streaming birefringence, seen when viewed between polarizing filters
 Has 2 indices of refraction
 Suspension of microscale mica flakes.

<http://www.laminarsciences.com/>

For individual particle images (PIV)

- Water
 - corn starch (diluted)
 - Glass or polystyrene microspheres
 - Latex bubbles
 - Rust (filtered)
 - Alumina
 - Wax beads (Pine Sol)
- RVP P2019