# Sample Environment Priorities for Polymers and Macromolecules

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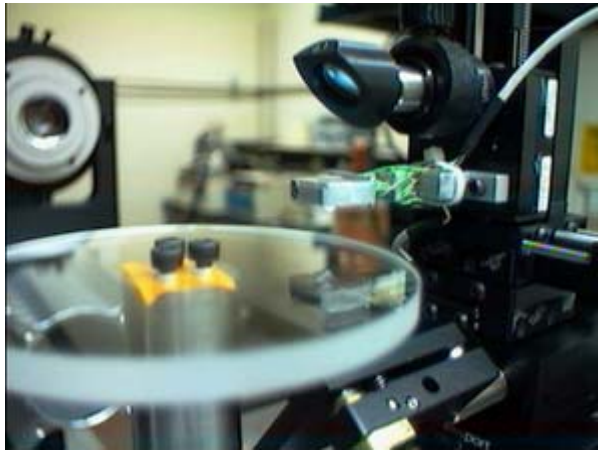
***Acknowledgments:***

**Mark Dadmun** **Peter Schurtenberger**

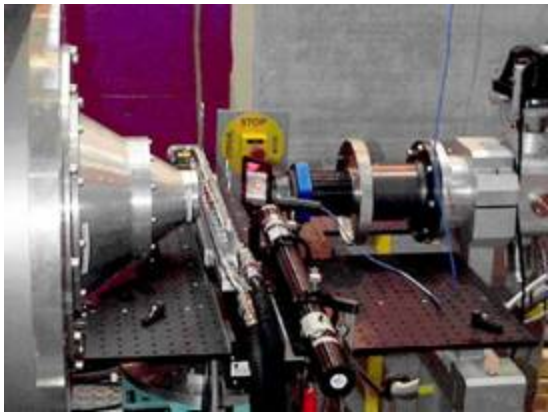
**Bill Hamilton**

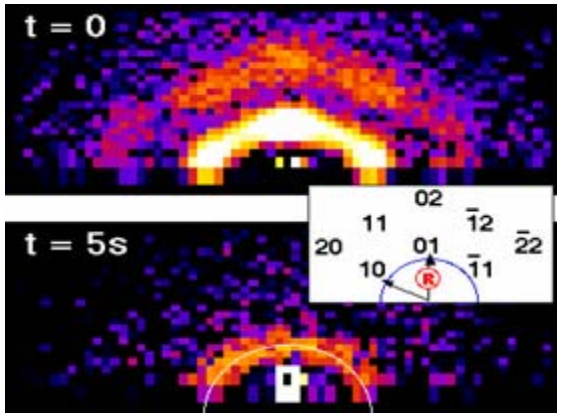
# Importance of Novel Sample Environments



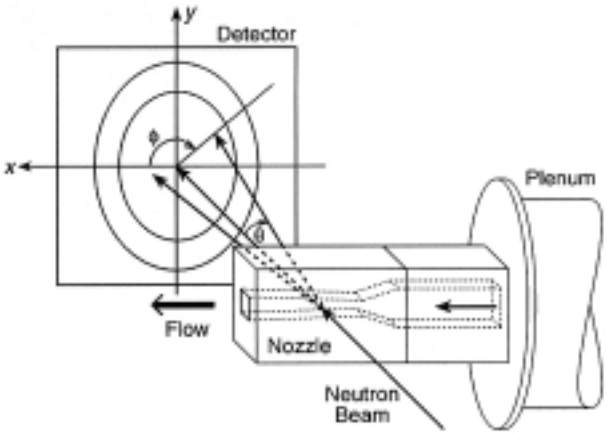
High-speed shear cell for simple fluids based on hard-disk drive technology

Simultaneous diffusing wave spectroscopy and SANS - Schurtenberger (Fribourg) and Kohlbrecher (SINQ)



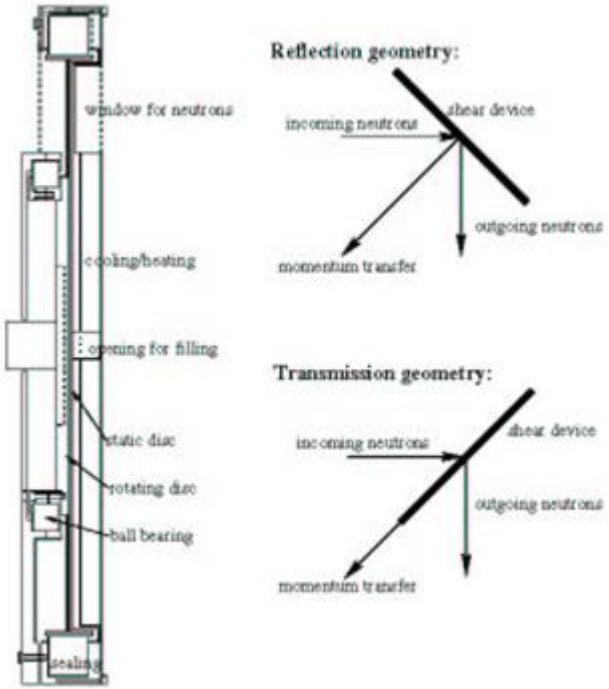


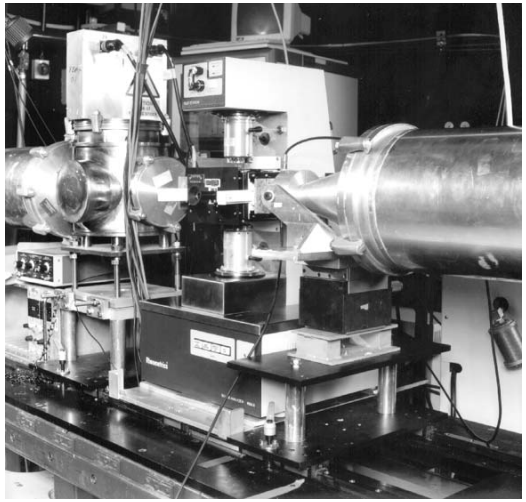

Scattering pattern of aligned rod-like micelles near a surface due to Poiseuille flow




Supersonic nozzles for SANS of nanodroplet aerosols - Wyslouzil and Strey, PRL, 1997

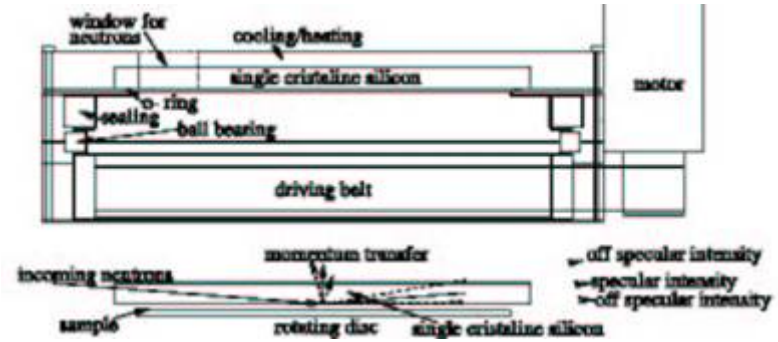
# BS and NR of sheared liquids; rheology and SAS



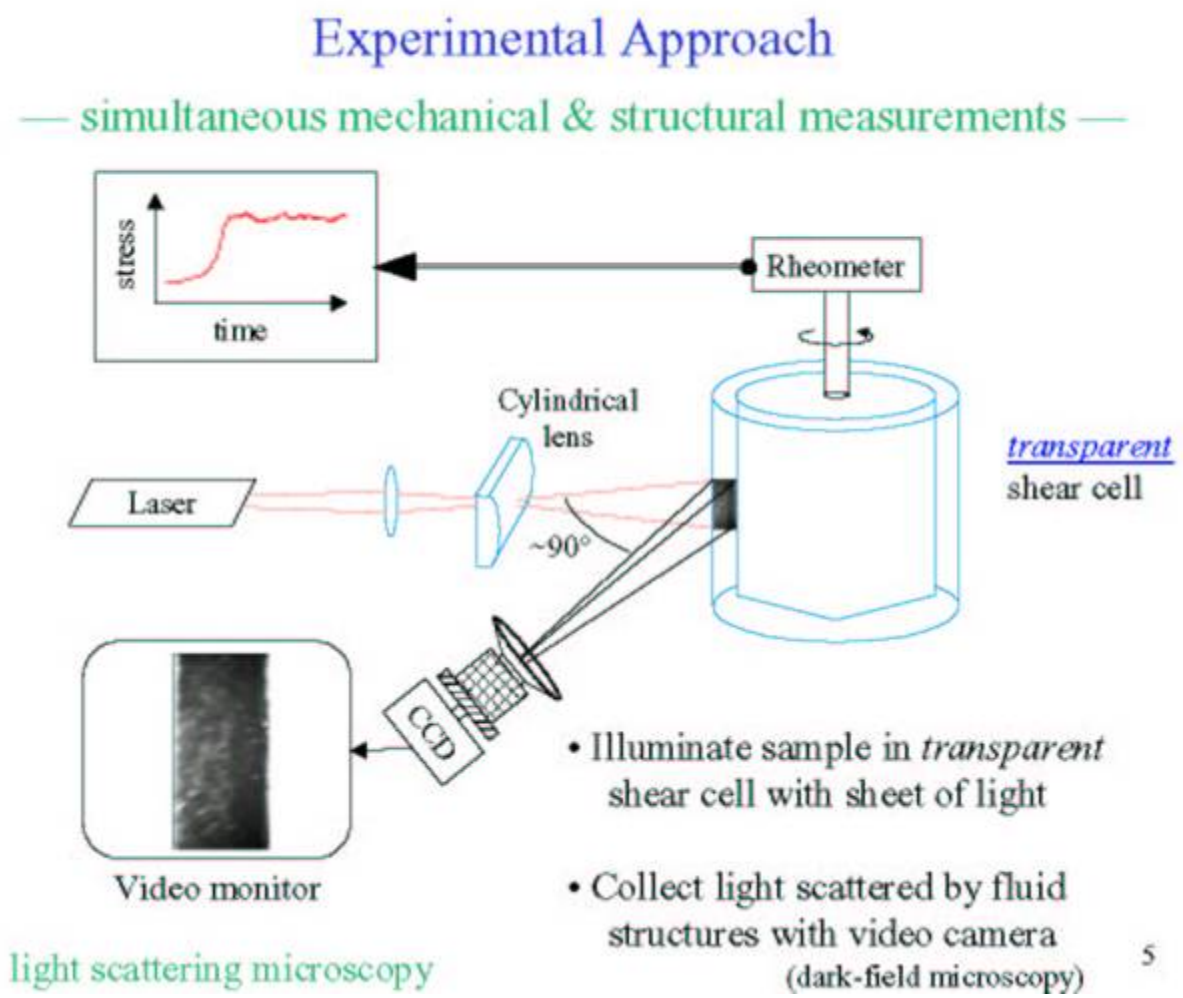



**Simultaneous rheology and small-angle scattering - Hamley, J. Appl. Cryst. 1998**

**Shear cell for backscattering (above) and for neutron Reflectometry (right) Wolff, Magerl, Zabel – Appl. Phys. A 2002**



# Rheology/LS – could be combined with SANS




Shear-thickening micellar solutions – D. Pine, UCSB – Apr. 02, ITP Complex Fluids Program