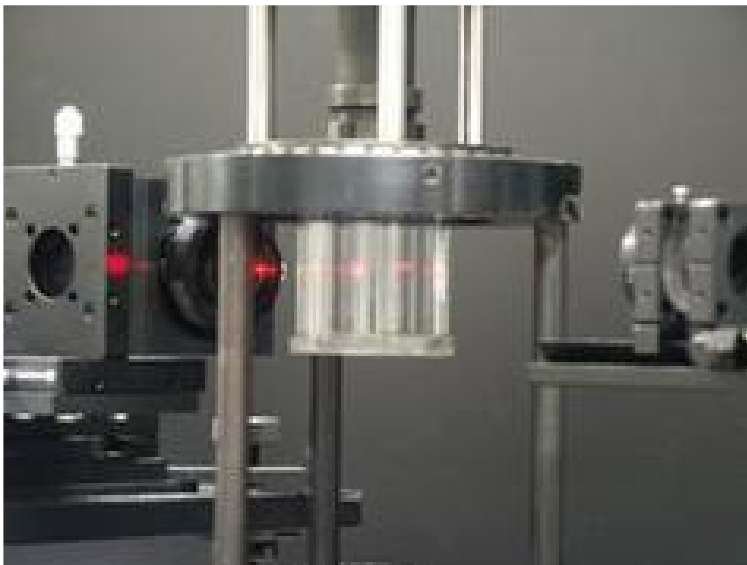


## Heterodyne Light Scattering ;

The heterodyne dynamic light scattering (HDLS) set up measures spatially resolved flow velocity profiles within the gap of an optical Couette shear cell. The velocity measurement is based on the Doppler frequency which is determined from the oscillating intensity autocorrelation function of the scattered light. Two laser beams are crossed at a given point within the gap of the shear cell by means of a single lens. The location of the point where the laser beams cross can be translated by means a nano-mover to which the lens is connected. Scattered light is collected by a detector that is placed in the forward direction, in between the two laser beams. In this way a large dynamical contrast is achieved. The spatial resolution is about 80 micron, while the time to collect a single correlation function is typically of the order of 10 seconds. This equipment is therefore not suited to study time-dependent phenomena.



The photo shows the optical Couette cell. On the left is the lens on a nano-mover stage and on the right is the detector. An optical thermostating bath can be used (not shown) to control the temperature.

Responsible scientist : Dr. Hartmut Kriegs  
e-mail : [h.kriegs@fz-juelich.de](mailto:h.kriegs@fz-juelich.de)  
[http://www.fz-juelich.de/iff/staff/Kriegs\\_H/](http://www.fz-juelich.de/iff/staff/Kriegs_H/)