## Large scale fractionation of polymers and advanced viscometric methods

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The lecture starts with a short description of methods providing access to technically interesting amounts of polymers that are freed from harmful components, like too short/long chains or other components. Its main part presents some recent developments in the field of the flow behaviour of polymer solutions and polymer melts.

The basis of a new look at some fundamental problems of rheology rests on the following approaches and observations, respectively.

- A universal definition of the intrinsic viscosity, enabling its reliable determination for polyelectrolyte solutions in pure water, i. e. in the absence of extra salt.<sup>1</sup>
- The modeling of the viscosities of polymer solutions over the full range of compositions by means of two to three adjustable parameters only.<sup>2</sup>
- The introduction of the *intrinsic bulkiness* as the analogue of the intrinsic viscosity for vanishing solvent content of the solution.<sup>3</sup>
- The treatment of shear thinning as a first order disentanglement process enabling the reliable extrapolation of measurements outside the Newtonian regime to zero shear.<sup>4</sup>
- The introduction of clear-cut criteria for the determination of viscometric cross-over concentrations in contrast to cross-over concentrations under equilibrium conditions.<sup>5</sup>

## References

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