

In this thesis, we aim to create a framework for the derivation of thermodynamically consistent anisotropic viscoelastic models. As an example we propose simple models extending the isotropic Oldroyd-B and Giesekus models to illustrate the models' behavior and the process of finding the correct equations. We show what behavior in sheer we can expect and continue with a 3D simulation inspired by the experiment on a real liquid crystal mixture. Finally, we compare the simulation and the experiment to find similarities and possible further research topics.