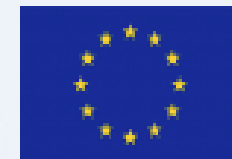
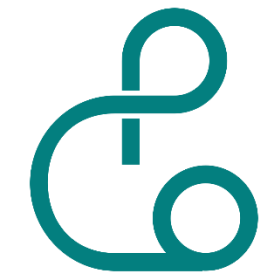


Nonlinear Viscoelastic Response of Metallo-Supramolecular Polymeric Networks

Christina Pyromali

WP2, WP3: Structure & Dynamics

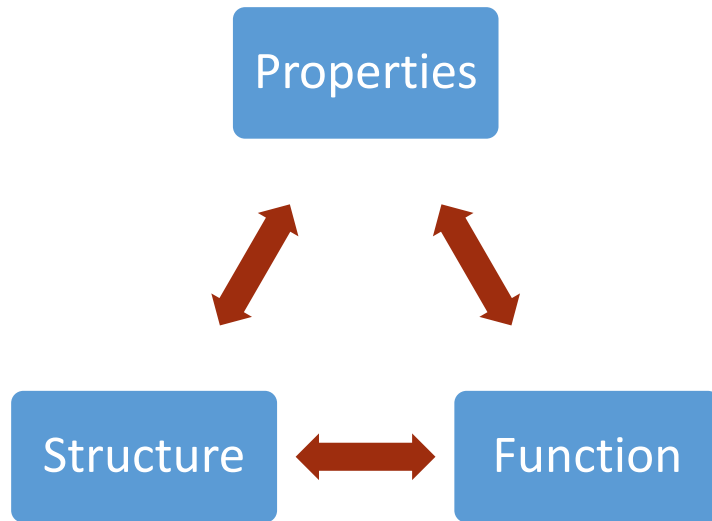


About me

- DoB: 10-10-1991
- MEng Chemical Engineering, NTUA, Greece, 2015
- MSc Advanced Chemical Engineering, UoB, UK, 2018
- ESR#5, 01-04-2018, UoC, Greece
- Advisors: Dimitris Vlassopoulos, George Petekidis



Motivation



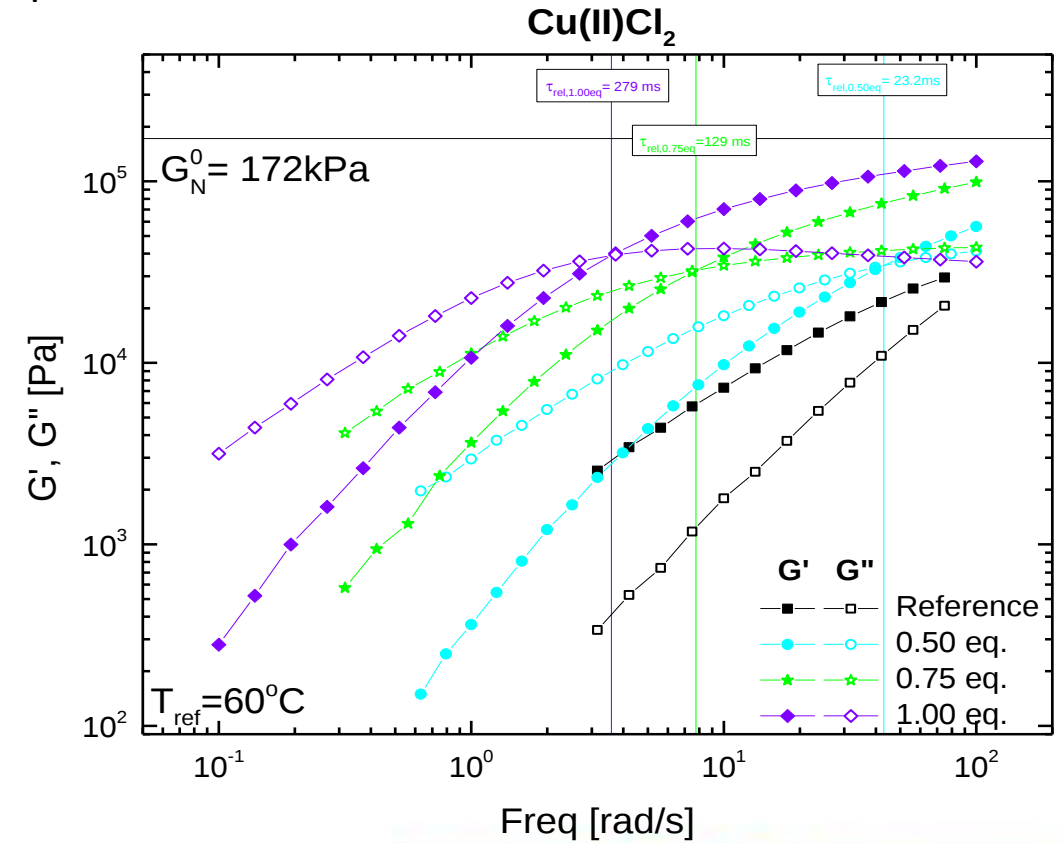
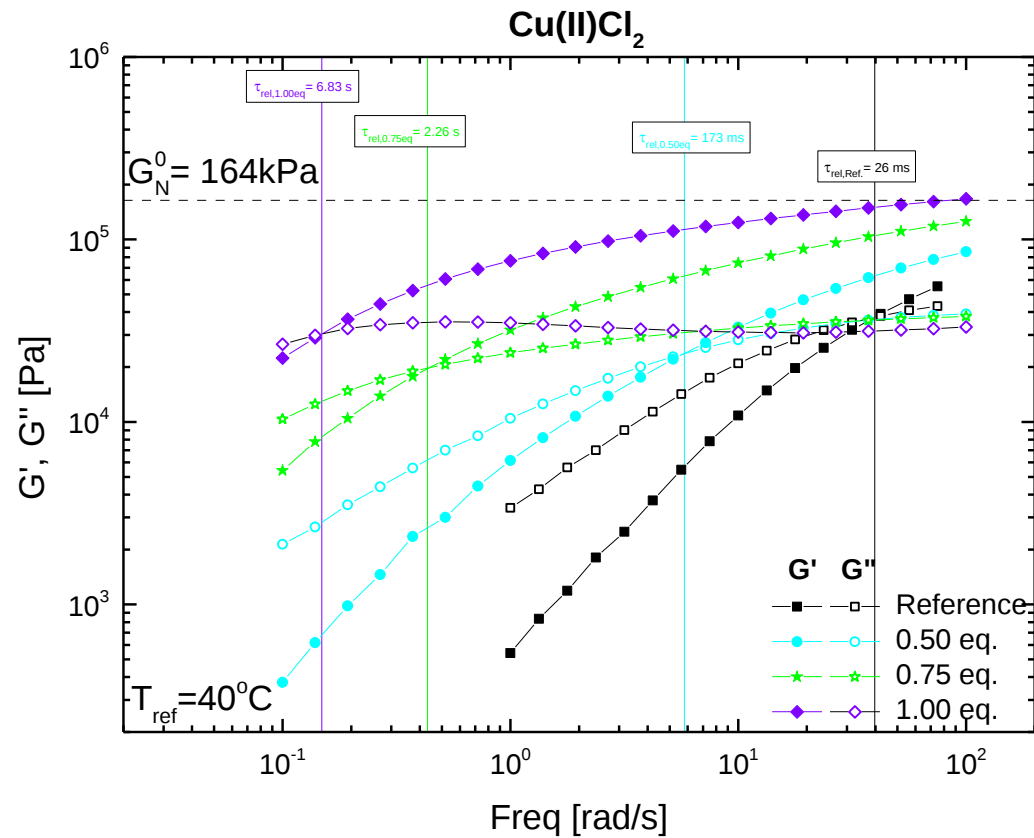
- How altering the temperature, the stoichiometric amount or the nature of metal ions, could be used for designing single and double responsive networks with desired properties?

Objectives

- Investigation of nonlinear shear behavior & correlation with:
 1. Model systems structure, composition and possible inhomogeneities
 2. LVE behavior
 3. Transient elongation properties
- Linear and nonlinear creep for understanding the relationship with adhesive properties, the role of entanglements and the loss of macroscopic cohesion
- Understanding the origin and influence of shear thinning / thickening behavior

Results

- ✓ The influence of metal ions is higher at lower temperature



- ✓ More stable network
- ✓ Higher cross-linking density

Training-Outreach Activities-Future Plans

- Training
 - ✓ Measurement Techniques → Linear and Nonlinear Shear Rheology
 - ✓ Data Analysis and modeling
 - ✓ Teaching assistanship
- Outreach Activities
 - ✓ European Researchers' Night
- Future Plans
 - ✓ Industrial Secondment at DSM
 - ✓ Modelling at UCL
 - ✓ Extensional Rheology at DTU
 - ✓ Dynamic Light Scattering at FORTH and JGU

Thank you for your attention!

