International Webinar on Gels and Networks

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Rouse processes in the linear viscoelastic response of transient polymer networks

ABSTRACT: These last years, several works have shown that combining two different dynamics within the same polymer system can lead to very interesting viscoelastic properties. These samples can be, for example, transient networks (dual or interpenetrated) which combine supramolecular and disentanglement dynamics, or which combine two different supramolecular dynamics, governed by different sticker lifetimes.

In the present work, we analyze the linear viscoelastic response of several transient networks to discuss their (partial) Rouse relaxation. While the relaxation of simple transient networks built from unentangled chains is well described by a sticky Rouse process, we investigate how this model can be extended to unentangled networks governed by two different reversible junctions. We also discuss the presence of Rouse relaxation in the case of entangled double dynamics networks, mainly due to Constraint Release process induced by the fast relaxing component, and see how it can be quantified.

GOALS:

- Detect and analyze Rouse processes in the viscoelastic response of transient polymer networks
- Learn more about sticky Rouse model and Constraint Release Rouse process

ABOUT THE WEBINAR:

Due to the ongoing global crisis involving COVID-19, there is little chance for the soft matter community to meet to learn about gels and networks. We propose this seminar as a way for members of the European and Asian communities to share our research and learn from each other, even when social distancing is necessary. The tone of this webinar is informal, and questions can be freely asked at any time. We welcome open discussion, and hope that all who attend will learn a lot!

Webinar website: http://www.fp.a.u-tokyo.ac.jp/lab/sozai/seminar.html

Registration: https://zoom.us/meeting/register/tJ0ofu6vqj4vE9GUnlEdthldF1-gP7d4J1hD
Date: Friday, January 29th, 2021
Time: 17:00-18:30 JST, 9:00-10:30 CET
Cost: Free

Organizers:
Daniel King (Hokkaido University)
Koichi Mayumi (University of Tokyo)
Tetsuo Yamaguchi (University of Tokyo)
Tetsuharu Narita (ESPCI Paris)