

UNIVERSITY OF ILLINOIS
AT URBANA - CHAMPAIGN

Department of Chemical and Biomolecular Engineering
114 Roger Adams Laboratory, Box C-3
600 S. Mathews Avenue
Urbana, IL 61801-3602 USA



Dr. Simon Rogers
Assistant Professor
209 Roger Adams Laboratory
(217) 333-0020

June 30 , 2018

Dear Dr. Upponi,

Please find enclosed a manuscript entitled, "Measuring and understanding large amplitude oscillatory shear: A case study of concentrated polymeric systems" authored by Johnny Ching-Wei Lee, Jun Dong Park, and myself, which I submit to you for publication in the Journal of Visualized Experiments.

The paper contains original research on how to perform large amplitude oscillatory shear (LAOS) measurements using a TwinDrive MCR 702 rheometer from Anton Paar. Using this experimental equipment and procedure, we identify the sequence of processes undergone by two industrially and environmentally important concentrated polymer suspensions using a freely-available MATLAB-based software package based on the newly-published SPP framework. We describe in depth the instrument setup, the experimental procedure, and using the analysis software. We demonstrate a clear link between the results of the LAOS experiments and results obtained from other traditional rheological measurements, providing a generic approach to understanding the nonlinear rheology of concentrated polymer suspensions that can be applied by other researchers investigating other systems, which we think makes it a good fit for the Journal of Visualized Experiments.

I anticipate that this research will be of interest to the Journal of Visualized Experiments viewership as a collective, but more specifically to researchers interested in polymeric suspensions and transient nonlinear rheology.

I look forward to hearing from you regarding the publication of this manuscript.

Simon Rogers