

## Oscillatory squeeze flow for the study of linear viscoelastic behavior - DTU Orbit (08/11/2017)

### Oscillatory squeeze flow for the study of linear viscoelastic behavior

The squeezing of a sample between parallel plates has been used for many years to characterize the rheological behavior of soft, purely viscous materials, and in recent times, small-amplitude oscillatory squeezing has been proposed as a means to determine the linear viscoelastic properties of molten polymers and suspensions. The principal advantage of squeeze flow rheometer over rotational devices is the simplicity of the apparatus. It has no air bearing and is much less expensive and easier to use. Accuracy may be somewhat reduced, but for quality control purposes, it could be quite useful. It might also find application as the central component of a high-throughput rheometer for evaluating experimental materials. The deformation is not simple shear, but equations have been derived to show that the oscillatory compressive (normal) force that is measured can serve as a basis for calculating the storage and loss moduli. These theories as well as instruments that have been developed to generate the required deformation are described, and applications to a variety of materials are described.

### General information

State: Published

Organisations: Department of Chemical and Biochemical Engineering, The Danish Polymer Centre, Drexel University, McGill University

Authors: Wingstrand, S. L. (Intern), Alvarez, N. J. (Ekstern), Hassager, O. (Intern), Dealy, J. M. (Ekstern)

Pages: 407-418

Publication date: 2016

Main Research Area: Technical/natural sciences

### Publication information

Journal: Journal of Rheology

Volume: 60

Issue number: 3

ISSN (Print): 0148-6055

Ratings:

BFI (2017): BFI-level 2

Web of Science (2017): Indexed yes

BFI (2016): BFI-level 2

Scopus rating (2016): CiteScore 3.1 SJR 1.414 SNIP 1.553

Web of Science (2016): Indexed yes

BFI (2015): BFI-level 2

Scopus rating (2015): SJR 1.413 SNIP 1.573 CiteScore 2.67

Web of Science (2015): Indexed yes

BFI (2014): BFI-level 2

Scopus rating (2014): SJR 1.692 SNIP 1.584 CiteScore 3.29

BFI (2013): BFI-level 2

Scopus rating (2013): SJR 1.297 SNIP 1.583 CiteScore 2.96

ISI indexed (2013): ISI indexed yes

Web of Science (2013): Indexed yes

BFI (2012): BFI-level 2

Scopus rating (2012): SJR 1.347 SNIP 1.62 CiteScore 2.72

ISI indexed (2012): ISI indexed yes

Web of Science (2012): Indexed yes

BFI (2011): BFI-level 2

Scopus rating (2011): SJR 1.974 SNIP 1.824 CiteScore 3.34

ISI indexed (2011): ISI indexed yes

Web of Science (2011): Indexed yes

BFI (2010): BFI-level 2

Scopus rating (2010): SJR 1.821 SNIP 1.504

Web of Science (2010): Indexed yes

BFI (2009): BFI-level 2

Scopus rating (2009): SJR 1.762 SNIP 1.526

Web of Science (2009): Indexed yes

BFI (2008): BFI-level 1

Scopus rating (2008): SJR 1.909 SNIP 2.504

Web of Science (2008): Indexed yes

Scopus rating (2007): SJR 1.762 SNIP 1.78

Scopus rating (2006): SJR 1.455 SNIP 1.638

Web of Science (2006): Indexed yes

Scopus rating (2005): SJR 1.903 SNIP 1.652

Web of Science (2005): Indexed yes

Scopus rating (2004): SJR 1.704 SNIP 1.785

Scopus rating (2003): SJR 1.793 SNIP 1.745

Web of Science (2003): Indexed yes

Scopus rating (2002): SJR 1.856 SNIP 1.994

Web of Science (2002): Indexed yes

Scopus rating (2001): SJR 2.571 SNIP 1.942

Web of Science (2001): Indexed yes

Scopus rating (2000): SJR 2.024 SNIP 1.799

Web of Science (2000): Indexed yes

Scopus rating (1999): SJR 2.005 SNIP 2.053

Original language: English

DOIs:

10.1122/1.4943984

Source: FindIt

Source-ID: 2303140937

Publication: Research - peer-review › Journal article – Annual report year: 2016