



Investigative Analysis of Rheological Behavior of Biopolymer (ecovio® F Film C2331)

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Abstract:

Due to the vital significance and characteristic of Ecovio C2331 bio based polymer in diverse approaches of environment and health fields, the melt characteristics and morphological behaviour have been investigated through an experimental study concerning the internal configuration. Two different kinds of computerized rheometer devices have been utilized to illustrate the thermo rheological behavior of Ecovio C2331 at temperature range varying between 150 and 220 °C in various analyzing mechanisms. The linear results of oscillatory measurements have been compared with non-linear results of steady-state method ranging (0.001-1) s⁻¹. Moreover, further viscosity investigations have been carried out at elevated shear rate varying from 5 to 1000 s⁻¹ by utilizing capillary rheometer module. The outcome results revealed the storage and the loss modulus of (ecovio® F Film C2331) molten in terms of angular frequency (0.05-628.3) rad/s, and described the model of Cox-Merz by employing rotational geometry of rheometer (plate-plate) instrument. Eventually, the present research proposed Cross model as an empirical correlation for examining and analyzing the statistics of experimental result.

Biography:

Shatha K. Muallah. Bio-Chemical Engineering Department, Al-Khwarizmi Engineering College, University of Baghdad. Abstract. Rheological instrument .



Publication of speakers:

- R. Polymerization, "R7.1 Polymerization, " in Chemical Reactor Theory, 2nd ed., 1977, pp. 354–383.
- 2010 Chakrabarty, Tina et al., "Chitosan Based Membranes for Separation, Pervaporation and Fuel Cell Applications : Recent Developments, " pp. 5–8, 2010.
- "Biopolymers."
- F. Blend, "ecovio ® F Film C2203, " 2013.
- S. K. Muallah, "Experimental Determination of the Elastic and Viscous Behavior of Polycarbonate Melts at Different Temperatures and Their Relationship to the Steady State Viscosity via the Cox-Merz Rule, " Iraqi J. Chem. Pet. Eng., vol. 15, no. 2, pp. 49–59, 2014.

<https://www.meetingsint.com/chemical-engineering-conferences/biopolymers>

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