1005-76-96　　　　**David O Olagunju*** (`olagunju@math.udel.edu`), Dept of Mathematical Sciences, University of Delaware, Newark, DE 19716. *Non-isothermal viscoelastic parallel-plate flow.*

Effect of viscous heating on creeping flow of a viscoelatic fluid between two coaxial discs will be discussed. Analytical and numerical results will be presented which show the existence of secondary flows. Implications for applications in rheology will also be discussed. (Received February 01, 2005)