

LETTER TO THE EDITOR

Inverse Creep and Inverse Relaxation

Although the recent result presented by Nachane¹ as a note in this journal, on the phenomenon of "inverse" creep, is at first sight intriguing, this "inverse" behavior is not a recently observed phenomenon as suggested. Leaderman² presents an account of the experiments performed by Kohlrausch in the 1870s; in these experiments the above phenomenon was used to demonstrate the qualitative existence of a superposition process. The classical theory of linear viscoelastic behavior is based on the Boltzmann Superposition Principle and adequately explains both "inverse creep" and the related behavior of "inverse relaxation."³⁻⁵ These empirically unexpected behaviors have a simple physical basis.

Journal of Applied Polymer Science, Vol. 57, 653 (1995)
© 1995 John Wiley & Sons, Inc. CCC 0021-8995/95/050653-01

References

1. R. P. Nachane, *J. Appl. Polym. Sci.*, **53**, 1123 (1994).
2. H. Leaderman, *Elastic and Creep Properties of Filamentous Materials and Other High Polymers*, Textile Foundation, Inc., Washington, DC, 1944, Chapt. 1.
3. R. P. Nachane, G. F. S. Hussain, G. S. Patel, and K. R. Krishna Iyer, *J. Appl. Polym. Sci.*, **38**, 21 (1989).
4. L. Vangheluwe, *Textile Res. J.*, **63**, 552 (1993).
5. A. M. Manich and M. D. de Castellar, *Textile Res. J.*, **62**, 196 (1992).

ANTHONY P. PIERLOT

CSIRO Division of Wool Technology
Belmont, Victoria 3216
Australia