

## ABSTRACTS

friction of viscose and vinylon fibers treated with surfactants of various types. Minimum values of the coefficient of friction were observed at the velocity of about 1 m/min. with fibers treated with anionic and cationic type surfactants as well as nonionic type. This discrepancy to the result reported by Röder was discussed.

The convenient apparatus to estimate the coefficient of static and kinetic friction of yarn was constructed using the loading pendulum of K.S. Senimeter (a single fiber tensile tester). Results obtained with this apparatus were compared with results obtained with Röder type apparatus or the loading weight method and some differences were observed.

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### **Studies on the Second-Order Transition Temperature of Polyvinyl Alcohol. (I)**

#### **Influence of Water on the Second-Order Transition Temperature of Polyvinyl Alcohol**

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*Chemistry of High Polymers (Kobunshi Kagaku)*, **14**, 574 (1957)

The relation between the second-order transition temperature  $T_g$  and the water content of polyvinyl alcohol was discussed. The water content of samples of polyvinyl alcohol filament were 0, 1.8, 2.4, 8.6, 14.0, 25.0, 35.9, 48.5, 61.6% respectively. The  $T_g$  of completely dried sample was 73°C, but the temperature fell gradually with increasing water content of samples. Another transition temperature  $T_g'$  were observed by the samples whose water content were greater than 8.6 %.

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### **Studies on the Second-Order Transition Temperature of Polyvinyl Alcohol. (II)**

#### **Influence of Rate of Heating and Degrees of Polymerization on the Second-Order Transition Temperature of Polyvinyl Alcohol**

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*Chemistry of High Polymers (Kobunshi Kagaku)*, **14**, 577 (1957)

At first the influence of the rate of heating on the second-order transition temperature of polyvinyl alcohol (PVA) was studied. The samples used in this series were air dried PVA filament and completely dried PVA film. In no case the influence of the rate of heating were observed. In the second series of this