AD-A194 501 QUASI-LIQUID CRYSTALLINE MATERIALS WITH SPECIAL ELECTRO-OPTIC PROPERTIES(U) WEIZMANN INST OF SCIENCE REHOVOTH (ISRAEL) V KRONGAUZ MAY 88 R/D-4633-CH-01 1/1

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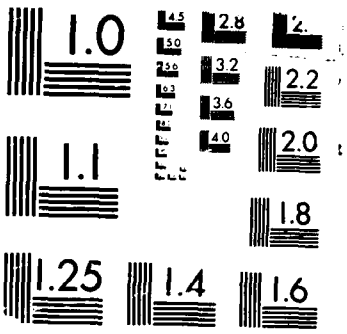

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QUASI-LIQUID CRYSTALLINE MATERIALS WITH SPECIAL ELECTRO-OPTIC PROPERTIES

6th Period Report

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During the past six months our main efforts were directed towards investigation of photochromic liquid crystal polymers with different photochromic and mesogenic groups in order to study the effect of the structure of the groups on:

a) photosensitivity of the polymers;

b) stability of the colored merocyanine form formed on irradiation and,

c) their capability to aggregate and crosslink the macromolecules.

Side chain liquid crystal polysiloxanes and polyacrylates with rod-shaped (Fig. 1) and T-shaped (Fig. 2) spiropyrans attached as side groups were synthesized by the polymer analagous reactions and by free radical polymerization.

Examination of these polymers showed that there is a substantial difference in their behaviour. The rod-shaped photochromes give the merocyanine dyes with a very strong trend to aggregation while T-shaped photochomes give mainly non-aggregated merocyanine groups. The structural, spectral and thermodynamic properties of these two types of polmers are also different.

Our research plans include examination of electro-optical properties of the polymers.

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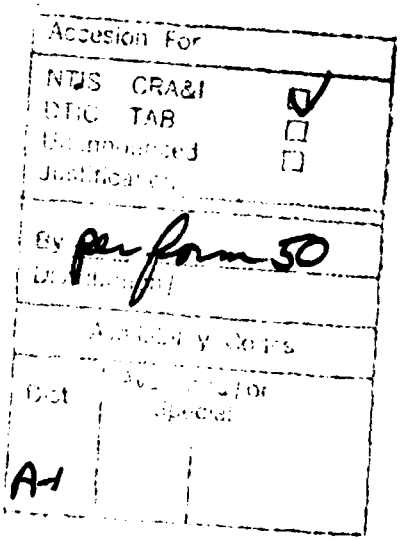

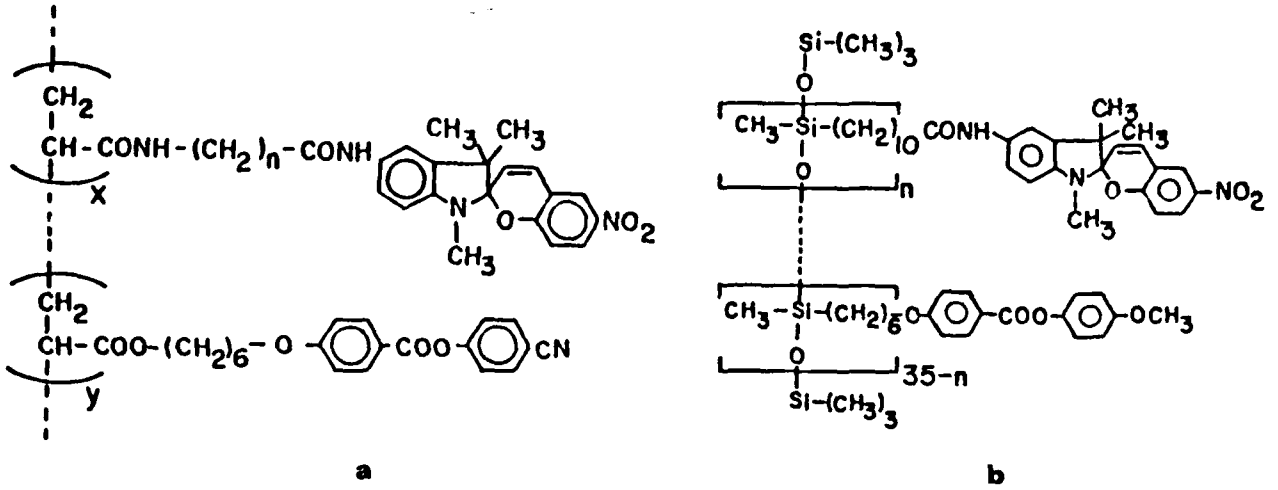

Fig. 1 Rod-shaped polyacrylates (a) and polysiloxane (b)

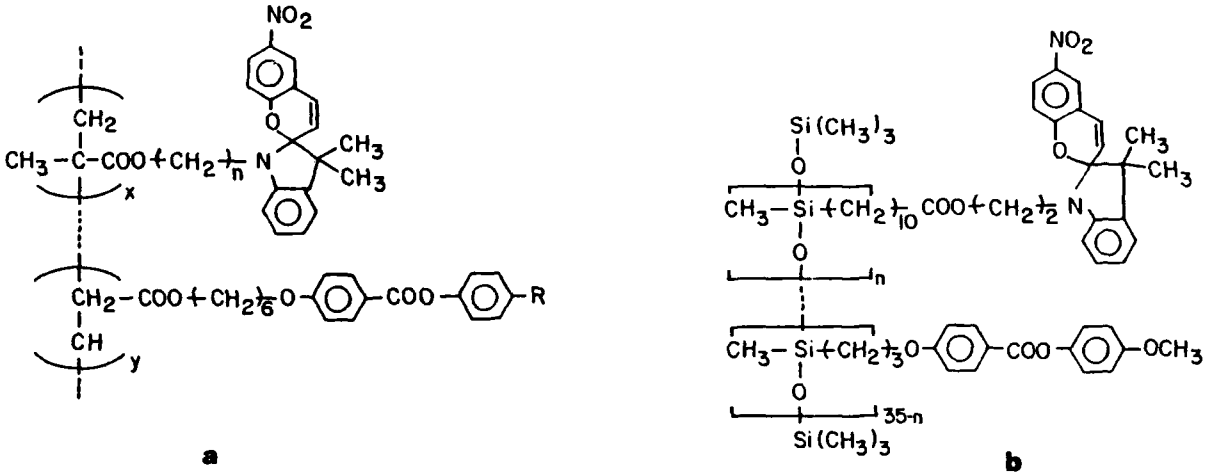

Fig. 2. T-shaped polyacrylates (a) and polysiloxane (b)

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