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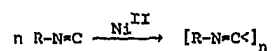
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POLY(IMINOMETHYLENES) WITH CORONAND SIDE CHAINS. A MODEL OF A MOLECULAR CHANNEL FOR METAL ION TRANSPORT

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Isocyanides can be polymerized to poly(iminomethylenes) with NiCl_2 as a catalyst¹.



The polymers have a rigid, helical structure with 4 repeating units per turn and a helical periodicity of 0.4 nm. The side chains of the polymers are arranged in 4 stacks parallel to the axis of the helix.

We have prepared a poly(iminomethylene) which contains coronand side chains by polymerizing 4-(1-isocyanosthyl)benzo-18-crown-6 with nickel chloride. The coronands in the polymer form 4 molecular channels (Fig. 1), which strongly bind alkali and ammonium cations. The polymer provides a model for the study of ion transport through molecular channels in biological membranes.

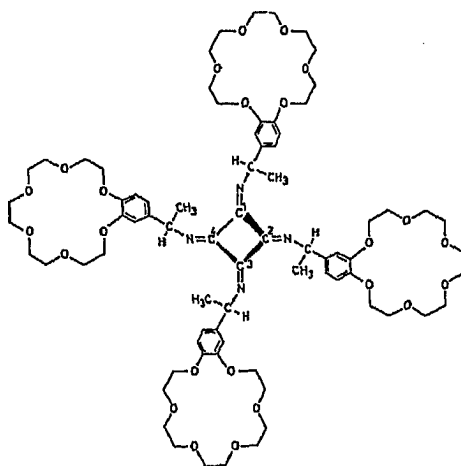


Fig. 1. Projection along polymer helix axis. The 5th repeating unit is behind the first, the 6th behind the second, etc.

1. W. Drenth and R.J.M. Nolte, *Acc. Chem. Res.* 12, 30 (1979).