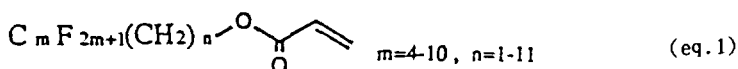


THE RELATIONSHIP BETWEEN STRUCTURES AND DYNAMIC SURFACE PROPERTIES  
OF PERFLUOROALKYL CONTAINING POLYMERS

Takashige Maekawa, Satoshi Kamata, Masashi Matsuo

Research Center, Asahi Glass Co., Ltd., Hazawa-cho, Kanagawa-ku, Yokohama 221,  
Japan

A homologous series of acrylic polymers with various side chains of Rf group were prepared (eq.1).



The melting temperatures of Rf-aggregates in the polymers were measured by DSC, and their structures in the thin film were observed by the X-ray scattering analysis. These structural data were related to their dynamic surface tensions measured by the Wilhelmy plate technique using several polar liquids. Higher receding contact angle were observed in the case of the polymer with higher melting temperatures and the potential abilities of self-alignment of the side chains in the forms of crystals and lamellae structures. The surfaces of the polymer with such side chains were found to be stable and keep their initial hydrophobic properties even after exposed to various conditions. These results suggested that the tendency of aggregation and self-alignment of Rf groups were important to control their dynamic surface properties. The model structures of the thin film composed of such polymers and the principle of the enhanced hydrophobic surfaces will be discussed.