

Analysis of experimental data in structural analysis of polymers: Missed opportunities and successes.

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Abstract

Papers submitted for publication end up all too frequently with sentences of the type: "Further experiments are needed to answer the questions raised by the present observations". Such statements are frequently an easy way out of difficulties. The presentation will illustrate different (mostly structural) problems for which the published data were sufficient to reach the correct interpretation. In many cases what was required was not more experimental data but more time and effort spent on their analysis in order to reach the correct model. Several classical but also some personal experiences will be presented – both successes and failures. In most cases, the structural problems were known and the data were available in the literature - sometimes for decades. In some cases, the structural model existed, but its more general validity was not perceived. There are of course exceptions, but these examples suggest that a significant part of our research time should be devoted to "sit and think" rather than to collect yet more experimental data.



Bernard Lotz was born in Alsace, France, where he has spent most of his research career at the Centre de Recherches sur les Macromolécules, which became later the Institut Charles Sadron (ICS), a laboratory owned and run by the French Centre National de la Recherche Scientifique (CNRS). He is currently Emeritus Directeur de Recherche at CNRS. He has held various positions as visiting scientist and visiting professor at several American and Japanese Universities and Research Institutes. His research interests include the phase transitions, structure and morphology of crystalline polymers and biopolymers, and block copolymers. He has authored or coauthored over 300 research papers, reviews, and book chapters.