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Preface

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Preface

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The first international symposium on poly(vinyl chloride), which was an IUPAC microsposium, was held in Prague in September 1970. After that date, at least two PVC meetings were held, in Chicago (August 1973) and Darmstadt (September 1974), respectively. The constant interest in PVC induced us to organize a Second International Symposium which was held at the Claude Bernard University in Lyon-Villeurbanne, July 5-9 1976.

This symposium was a Colloque International of the Centre National de la Recherche Scientifique (C. N. R. S.) and was jointly sponsored by IUPAC and by the Groupe Français d'Études et d'Applications des Polymères (G. F. P.).

After the opening session the program began. It was divided into eight main sessions, covering the whole range of scientific and technical activities concerning this polymer, namely: Polymerization, Chemical Modifications, Characterization, Rheology and Viscoelasticity, Processing, Properties, Degradation and Stabilization, and finally Combustion and Toxicity.

An effort was made to avoid parallel sessions, in order to allow everyone to listen to the main contributions to all eight topics. But, because of the large number and the good level of the contributed papers, on Thursday, July 8 in the morning, a set of five parallel sessions was organized. Each topic was developed in a half-day session without any parallel event (except of course the ladies' program) and finally a parallel session on Thursday morning.

Each main session was composed of an invited main lecture, a set of four to six contributed papers, and a rather long (one hour and a half) panel discussion with invited outstanding scientists.

The symposium began with the session on polymerization. In the absence of the Russian main lecturer, the Symposium was opened by a very interesting movie produced by Dr. E. A. Collins (B. F. Goodrich, Cleveland, U. S. A.) about the formation of the polymer grain, showing very well the skin of the suspended pearls and the different steps of the grain and agglomerate formation. Four contributed papers were presented after that, all of them on the nascent morphology of PVC either in a unique droplet (Dr. Zichy, I. C. I., U. K.) or in the autoclave under continuous addition of monomer (Dr. Allsopp, I. C. I., U. K.) for the suspension process. Grain formation and the influence of various parameters in the bulk process were discussed by Dr. Palma (Montedison, Italy) and Dr. Boissel (Rhône-Poulenc, France). During the panel discussion, Pr. Geil discussed how to study the morphology, especially how to look at the evidence for the 100 Å primary particles. Then Dr. Uglestad (Trondheim, Norway) presented a review of the model postulated to describe the kinetics of polymerization and discussed the main interest and deficiencies of all of them. This review was completed by a presentation by Dr. Olaj, who showed that some models were definitely to be rejected and also discussed the correlations between the polymerization kinetics and the nascent morphology.

Another aspect of the problem namely, the changes introduced by copolymerization, was presented by Dr. Kolinsky (Prague, Czechoslovakia) the organizer of the first PVC symposium. After the four formal presentations the time for the open discussion was limited so that after a few questions and answers the discussion was postponed to the parallel session. A second motion picture was presented at this parallel session which described the bulk process which was developed in the Saint-Fons plant in the Lyon suburbs; after the film and a presentation by Dr. Chatelain, about 50 participants were allowed to visit the plant. In the meantime the session was continued and in a first part, a set of papers were presented dealing with the polymerization kinetics in bulk (Dr. Olaj, Pr. Hamielec), suspension (Dr. George and Dr. Sorvick), or emulsion polymerization (Dr. Liegeois). A second part of the session dealt with modified polymerization with the contributions of Dr. Matsuda and Dr. Lambla. Dr. Berens of the B. F. Goodrich acted as the discussion leader.

From all the data presented at the symposium it seems that, although the question of the understanding of the kinetics is far from closed, the main interest now lies in the nascent morphology. The reason is that it has been recognized that the final morphology, and

thus the final properties of the polymer in the processing, is already fixed at a low conversion stage (generally less than 0.5%). It is then important to attain better control and understanding of what happens at the very beginning of the polymerization, and this will probably be the subject of most of the studies now.

The material from other topics of this symposium related to chemistry, namely, chemical modifications, degradation, and stabilization, combustion and toxicity, will be published in this journal. Material related to the characterization, rheology, processing, and properties will be published in Journal of Macromolecular Science-Physics. Finally, the full text of the main lectures will be published in IUPAC journal Pure and Applied Chemistry.