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## 4 THE FOUNDATION AND DEVELOPMENT OF MACROMOLECULAR CHEMISTRY

*Introduction by W. Gerhard Pohl*

When I started in 1962 as a Ph.D. student of Werner Kuhn in Basel, I heard a lot about his contributions in the early years of polymer science. After his unexpected death in 1963 I became acquainted with the correspondence of Werner Kuhn with Hermann Mark. Recently I found unpublished correspondence of Kuhn with Hermann Staudinger and with Hermann Mark in the archives of the University of Basel. These letters throw a light on the development of polymer science, which is not well known even among historians of chemistry. So I thought it might be of interest to produce a paper on that topic. After reading the tribute to Hermann Staudinger's 50 years Nobel Prize anniversary in 2003, by Helmut Ringsdorf, I approached him suggesting to organise with me a session on the early history of polymer science at the Leuven conference. Ringsdorf was the last graduate student accepted by Staudinger and continued in polymer research later, whereas I moved into the field of biophysical chemistry after finishing my dissertation. Professor Ringsdorf accepted my suggestion and contributed knowledge and enthusiasm to organising this special session about the origin of the science of macromolecules and about polymer science. Four papers were accepted for the session and were arranged in historical sequence:

- Gary Patterson (Pittsburgh). *The Emergence of Macromolecular Paradigm in the World of Chemistry.*
- W. Gerhard Pohl (Linz). *Historical Notes from the Development of Macromolecular Chemistry between 1920 and 1940.*
- Johannes Feichtinger (Vienna). *Hermann Mark. The Viennese Born Ambassador of Macromolecular Research.*
- Marcel Van Beylen (Leuven). *Professor Georges Smets. The Development of Macromolecular Chemistry in Belgium.*

Because Gary Patterson could not attend the conference his paper was read by Peter J. T. Morris (London). The other papers were given by the authors.

Helmut Ringsdorf (Mainz) was the ideal chairman for this special session, because he had known Hermann Staudinger, Hermann Mark and Werner Kuhn personally. He added several high lights after the presentation of the papers and contributed significantly during the lively discussions. For instance he pointed out that Hermann Staudinger's dreams belonged to the unity of chemistry and biology. It was a coincidence that in 1953, when Staudinger received the Nobel Prize "for his discoveries in the field of macromolecular chemistry", the structure of DNA had been found by James Watson and Francis Crick. The chemical structure of that macromolecule catalysed the development of molecular biology and is the basis of gene technology.

Several chemists, mentioned that they had known Staudinger as the "father of macromolecular chemistry", but they did not know how difficult it had been for him to convince the chemical community that giant molecules can exist. They were also surprised that Staudinger for many years had not accepted the results from physical chemistry about the structure of macromolecules in solution.