
Polymer Industrial Research: Challenges and Opportunities

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In early 1900s, polymer industrial research emerged as a new frontier in the area of chemical industry. It has rapidly become the major driving force behind the explosive development of polymer industries for a century. From the first commercialized synthetic polymer in 1910 to the tens of thousands' polymeric products in today's market place, polymer materials have penetrated in the most areas of our daily lives. It has evolved from natural polymers to modified natural polymers and finally to a mature synthetic industry after a stellar expansion. Many believe that the development of synthetic polymer industry will be marked as an important era after "Stone Age", "Bronze Age", and "Iron Age" in the history.

The maturation of synthetic polymer industry, however, brings in many significant challenges to polymer industrial research, especially in many global companies. Slower growth rate and eroding profit margin have forced many companies to reorganize the R&D programs, and look for new directions. This presentation will briefly review the impact of the industrial research on the development of polymer industry in the past, and discuss the challenges we all face today and the opportunities for the research as well as the industry in the future.