

**B.Sc. Semester-VI
Organic Chemistry
Paper-XIV**

2. Synthetic Polymers

Coverage:

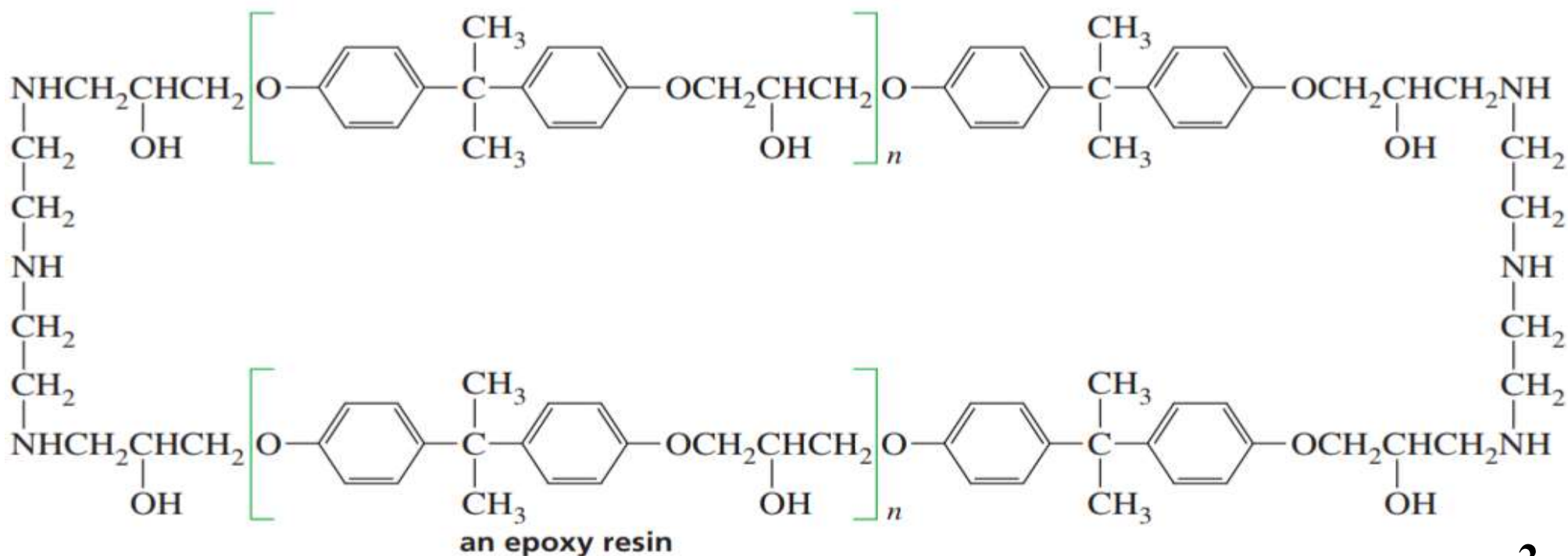
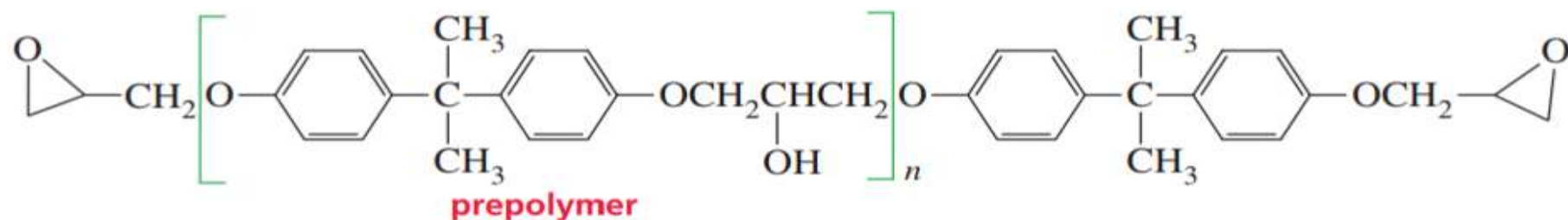
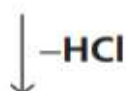
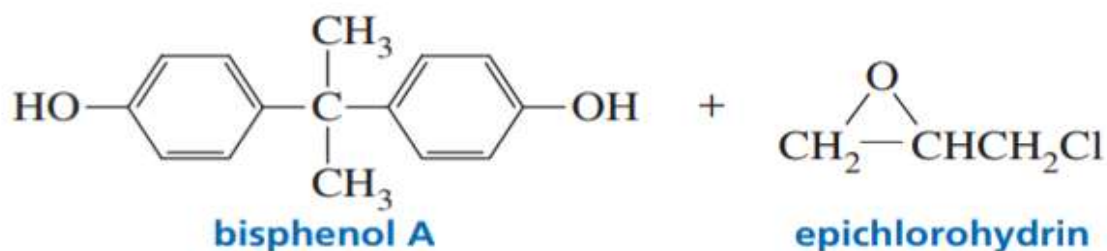
11. Epoxy Resins



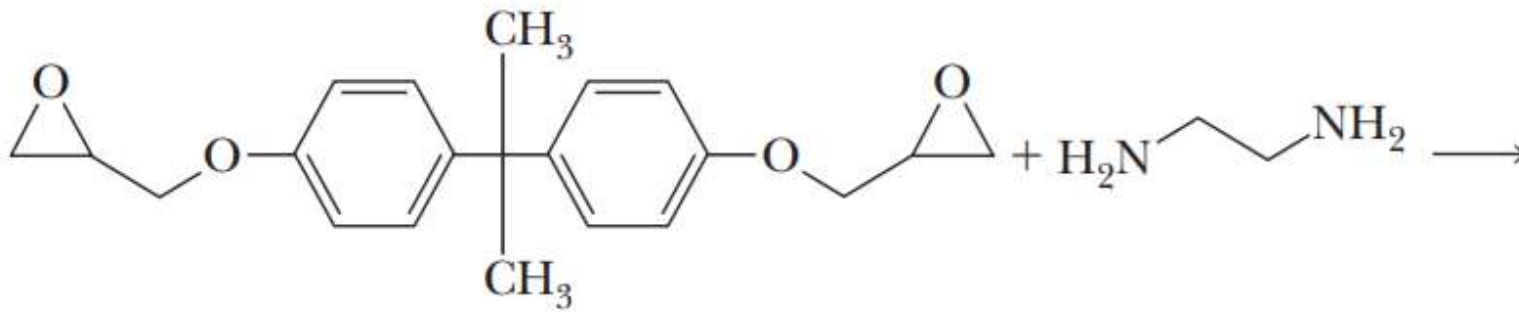
Dr. Rajeev Ranjan
University Department of Chemistry
Dr. Shyama Prasad Mukherjee University, Ranchi

11. Epoxy Resins

Epoxy resins are the strongest adhesives known. They can adhere to almost any kind of surface and are resistant to solvents and to extremes of temperature. When an epoxy cement is used, a low-molecular-weight *prepolymer* (the most common is a polymer of bisphenol A and epichlorohydrin) is mixed with a *hardener*—a compound that will react with the prepolymer to form a cross-linked polymer.

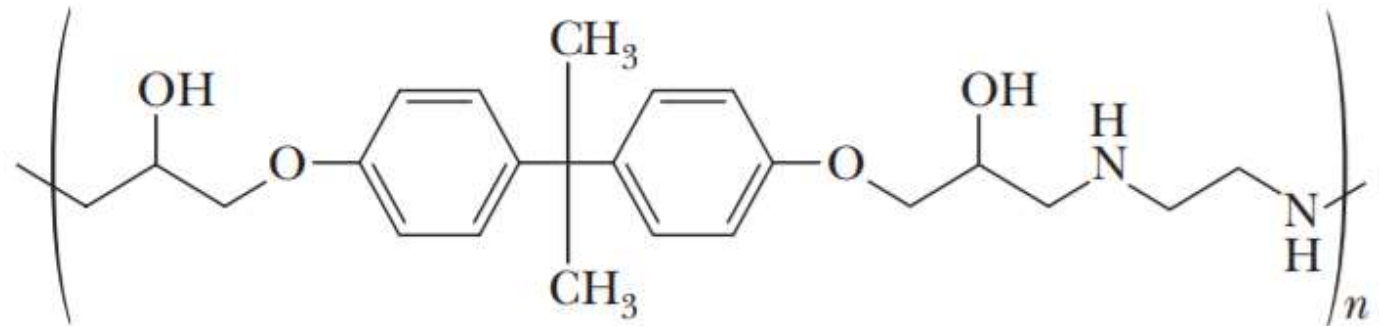


Epoxy Resins



A diepoxide

A diamine



An epoxy resin

Epoxy resins are widely used as adhesives and insulating surface coatings. They have good electrical insulating properties, which leads to their use for encapsulating electrical components ranging from integrated circuit boards to switch coils and insulators for power transmission systems. They are also used as composites with other materials, such as glass fiber, paper, metal foils, and other synthetic fibers to create structural components for jet aircraft, rocket motor casings, and so on.