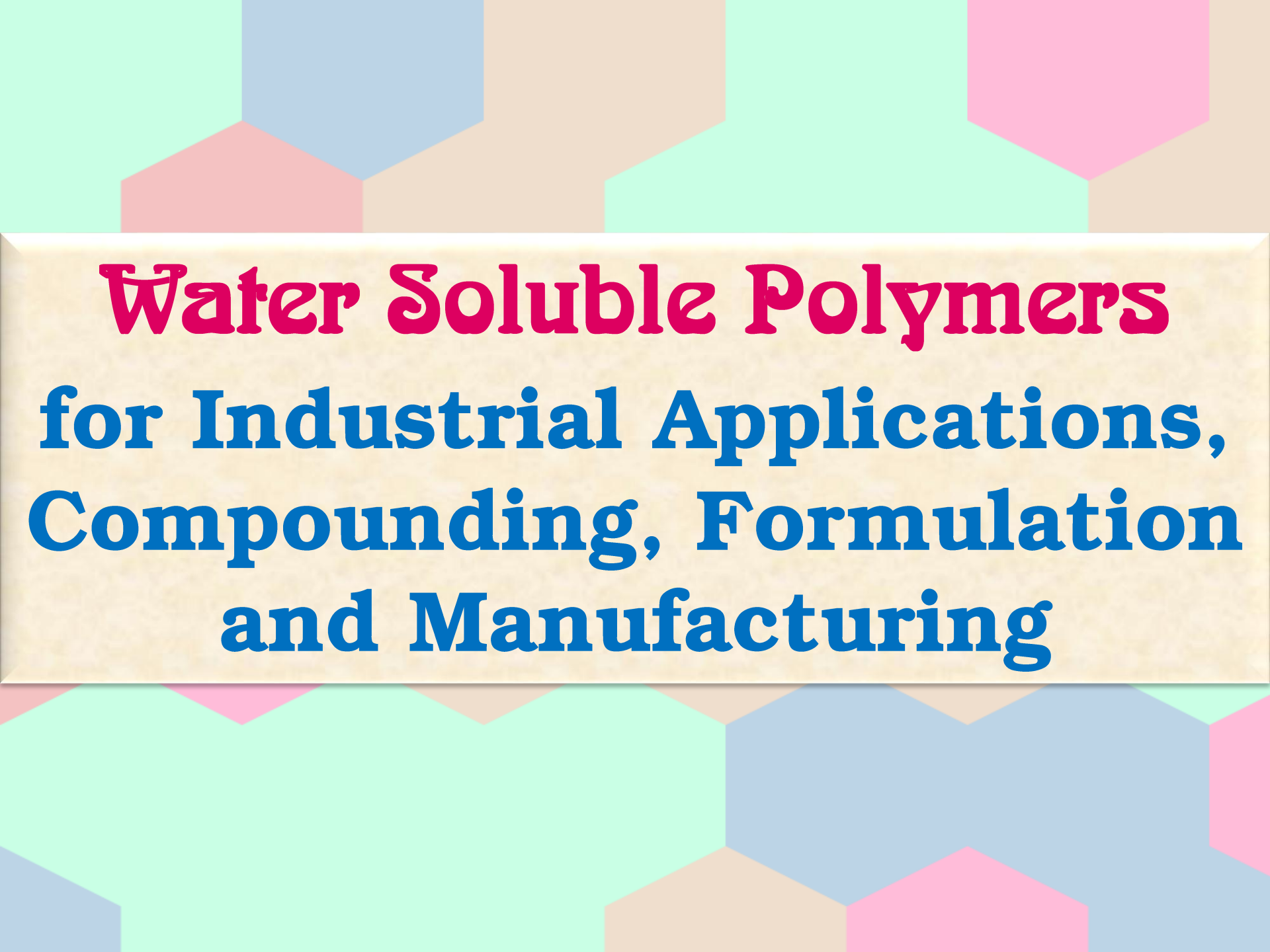


The background of the slide features a repeating pattern of interlocking hexagons in various colors including light green, light blue, light orange, and light pink. A central horizontal band with a light beige, textured background contains the main text.

Water Soluble Polymers **for Industrial Applications,** **Compounding, Formulation** **and Manufacturing**

Introduction

Water-soluble polymers, which perform various useful functions such as thickening, gelling, flocculating, rheology modifying and stabilizing in any given application, are used for a wide variety of applications including food processing, water treatment, paper, enhanced oil and natural gas recovery, mineral processing, detergents, textiles, personal care products, pharmaceuticals, petroleum production, and surface coatings.

Water-soluble polymers can be categorized into the following three groups:

- **Synthetic, which are produced by the polymerization of monomers synthesized from petroleum- or natural gas-derived raw materials**
- **Semisynthetic, which are manufactured by chemical derivatization of natural organic materials, generally polysaccharides such as cellulose**
- **Natural, including microbial-, plant- and animal-derived materials**

Water-soluble polymers are used primarily to disperse, suspend (thicken and gel), or stabilize particulate matter. However, they may perform any of the following functions:

Binding

Coagulating

Dispersing, suspending, stabilizing

Film forming

Flocculating

Lubrication and friction reduction

Rheology modification and control

Thickening, gelling

Water soluble polymers cover a wide range of highly varied families of products of natural or synthetic origin, and have numerous uses. A water soluble polymer is a polymer that can be diluted in water, with or without the assistance of co solvents and neutralizing agents, to form transparent solutions. They may be classified into two types, totally synthetic polymers and natural products together with their chemically modified derivatives and further can be grouped into three main headings; naturally occurring, semi synthetic and completely synthetic polymers.

The water based polymers are quick drying non inflammable, having mild odour and more environmentally acceptability than any other polymers. Most conventional coating polymers at present can be produced in a form that will allow them to be solubilized in water. These include alkydes, polyesters, acrylics epoxies. There are various types of polymerization methods of water soluble polymers such as bulk polymerization, solution polymerization, copolymerization, emulsion polymerization and suspension polymerization. Water soluble polymers are used widely as stabilizers or protective colloids in emulsion polymerization.

Its most common use are gum acacia, starch either etherified or in its degraded form, dextrin, polyvinyl alcohol and hydroxyethyl cellulose. Polymers find many applications in oil recovery and production, including areas such as; drilling fluids, cementation of well bore, reservoir fracturing, controlling fluid flow in the reservoir and multistage processes of oil production and refining. The water soluble polymers market encompasses several categories, including starch, cellulose ethers, polyvinylacetate, polyvinyl alcohol and other synthetic water soluble polymers. The starch market is the largest.

This book basically deals with flow characteristics of water soluble polymer solutions, emulsion polymerization, water reducible resins, silicone modified alkyds and polyesters, cross linking of water soluble coatings, formulation of water soluble coatings, trouble shooting with water soluble polymers, acrylic solution resins, polyvinylpyrrolidone, commercial uses: compounding and formulating adhesives, methods of polymerization, methods for polymerization of acrylamide, fabrication of water soluble polymers, excluded volume interactions of neutral polymers etc.

The book covers classification of water soluble polymers, processes, properties, uses and applications of water soluble polymers with lot of other information. This book will be very resourceful for new entrepreneurs, existing units, technocrats, researchers and technical libraries.

Continued growth in water-soluble polymers is expected during 2012–2017. In general, demand for water-soluble polymers is growing at rates near or slightly higher than the gross domestic product (GDP), particularly in regions with expanding manufacturing sectors of the economy.

Water treatment dominated the application market and accounted for more than 20% of the total market in 2012. Detergents & household products are anticipated to grow at CAGR of 5.6% from 2013 to 2019 owing to increasing penetration of FMCG companies especially in the high GDP BRICS countries.

Furthermore, the growing shale gas drilling activities is one of the major factors driving the demand for water soluble polymers in petroleum applications. Paper making is another key market for water soluble polymers. Other water soluble polymer applications include Adhesives, pharmaceuticals, agriculture, textiles etc.

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Our Approach

Requirement collection



Thorough analysis of the project



Economic feasibility study of the Project



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- *Electrical, Electronic And Computer based Projects*
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- *Fibre Glass & Float Glass*
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- *Spices And Snacks Food*
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