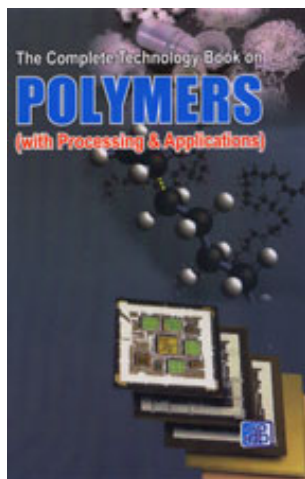


# The Complete Technology Book on Polymers (with Processing & Applications)



**Author:** NIIR Board of Consultants & Engineers

**Format:** Paperback

**ISBN:** 8178330105

**Code:** NI181

**Pages:** 560

**Price:** Rs. 1,100.00 **US\$** 125.00

**Publisher:** Asia Pacific Business Press Inc.

Usually ships within **5** days

Three factors are essential for any successful processing of polymers, namely materials, machinery and process control. The materials presently used comprise all existing thermoplastics and thermosets in the molecular weight range from 15000 to several million. Polymers have importance in manufacturing of various domestic and industrial products.

## Contents

### 1. INTRODUCTION

VIEWPOINT OF THE CONSUMER

VIEWPOINT OF THE INDUSTRIAL DESIGNER

VIEWPOINT OF THE FABRICATOR

VIEWPOINT OF THE PHYSICAL CHEMIST

VIEWPOINT OF THE ORGANIC CHEMIST

VIEWPOINT OF THE CHEMICAL ENGINEER

VIEWPOINT OF THE ECONOMIST

### 2. MODIFIED NATURAL PRODUCTS

CUPRAMMONIUM RAYON

VISCOSE RAYON

REGENERATED CELLULOSE FILM

CELLULOSIC DERIVATIVES

Cellulose Esters

Cellulose Nitrate

CELLULOSE ACETATE

CELLULOSE PROPIONATE

HIGHER CELLULOSE ESTERS

MIXED ESTERS OF CELLULOSE

CELLULOSE ETHERS  
METHYL CELLULOSE  
ETHYL CELLULOSE  
CARBOXYMETHYL CELLULOSE  
HYDROXYETHYL CELLULOSE  
CYANOETHYL CELLULOSE  
3. SYNTHETIC CONDENSATION PRODUCTS  
PHENOPLASTS  
Other Aldehydes  
OTHER PHENOLS  
FILLERS  
OIL-SOLUBLE RESINS  
CAST RESINS  
MANUFACTURE  
APPLICATIONS  
Urea-Formaldehyde Resins  
MELAMINE-FORMALDEHYDE RESINS  
ANILINE-FORMALDEHYDE RESINS  
MISCELLANEOUS AMINOPLASTS  
SULFONAMIDE-FORMALDEHYDE RESINS  
POLYESTERS  
Saturated Polyesters  
Linear Polycarbonates  
Unsaturated Polyesters  
Polymerized Oils  
Alkyd Resins  
Unsaturated Polyester Resins  
LINEAR POLYAMIDES  
POLYURETHANES  
SILICONES  
POLYOXYMETHYLENES  
POLYOXYETHYLENES  
EPOXY RESINS  
THIOPLASTS  
FURAN RESINS  
4. SYNTHETIC ADDITION PRODUCTS  
ALIPHATIC HYDROCARBONS AND DERIVATIVES POLYETHYLENE  
High-Pressure Process  
Low-Pressure Process  
Irradiated Polyethylene  
Chlorosulfonated Polyethylene  
POLYTETRAFLUOROETHYLENE  
POLYCHLOROTRIFLUOROETHYLENE  
POLYPROPYLENE  
POLYBUTENES  
Butyl Rubber  
POLYSULFONES  
POLY(VINYL ACETATE)  
POLY(VINYL ALCOHOL)  
POLY(VINYL CETALS)  
POLY(VINYL AND VINYLIDENE ETHERS)  
POLY (VINYL KETONES AND ALDEHYDES)  
POLY(VINYLIDENE CHLORIDE)

VINYLDENE CHLORIDE COPOLYMERS

POLYACRYLONITRILE

Vinylidene Cyanide

ALIPHATIC DIENES

Polyisoprene

POLYCHLOROPRENE

POLYBUTADIENE

Butadiene-Acrylonitril Copolymers

Butadiene-Styrene Copolymers

AROMATIC VINYL COMPOUNDS

Polystyrene

POLY(A-METHYL STYRENE)

POLY (VINYL TOLUENES)

POLY(DIVINYL BENZENES)

HETEROCYCLIC VINYL COMPOUNDS

poly(N-vinyl carbazole)

POLY(N-VINYL PYRROLIDONE)

POLY(VINYL PYRIDINES)

CYCLIC UNSATURATED COMPOUNDS

Coumarone-Indene Resins

POLYCYCLOPENTADIENE

POLYTERPENES

5. POWDER TECHNOLOGY FOR COATING OF PLASTICS

WHY POWDER COAT PLASTICS

EFFECT OF COSMIC RADIATION

RESISTANCE TO MECHANICAL WEAR

ELECTRICAL PROCESSING CHARACTERISTICS

IMPROVING WEATHER RESISTANCE

EXTERNAL POWDER DRAIN TREATMENT

PRETREATMENT OF PLASTICS

ELECTRICAL CHARACTERISTICS

6. ACRYLIC AND POLYURETHANE DISPERSIONS IN INDUSTRIAL COATINGS FOR PLASTICS

INTRODUCTION

PLASTICS NEED COATINGS

PROBLEMS WHEN PAINTING PLASTICS

WATER-BORNE COATINGS FOR PLASTICS

ADHESION OF WATER-BORNE COATINGS ON PLASTICS

HARDNESS

WATER RESISTANCE

CHEMICAL AND SOLVENT RESISTANCES

SELECTION OF PRODUCTS FOR WATER-BASED PLASTIC COATINGS

CONCLUSIONS

7. FABRICATING AND PROCESSING

MOLDING

Cold Compression Molding

Hot Compression Molding

Transfer Molding

Injection Molding

Jet Molding

EXTRUDING

CALENDERING

SKIVING

SHEET FORMING

## ATMOSPHERIC PRESSURE FORMING

- Cold Bending
- Hot Bending
- Stretch Forming
- Plug-and-Ring Forming
- Slip Forming
- Drawing
- Die Pressing
- Rotoforming
- Veneering
- Postforming

## FLUID-PRESSURE FORMING

- Vacuum-Forming Methods
- Pressure-Forming Methods

## LAMINATING AND IMPREGNATING

- Cellular Laminates

## COATING

- Surface Coatings
- Strippable Coatings

## EXPANDING

## CASTING AND EMBEDDING

## SPINNING

## FINISHING OF PLASTICS

## 8. APPLICATION

### FIBERS

### PLASTICS

- Constructional Uses

- Thermal, Electrical, and Optical Uses

- Ion Exchange

- Adhesives, Coatings, and Films

### ADHESIVES

### COATINGS

### FILMS

### ELASTOMERS

## About NIIR

**NIIR Project Consultancy Services (NPCS)** is a reliable name in the industrial world for offering integrated technical consultancy services. Its various services are: Pre-feasibility study, New Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Preparation of Project Profiles and Pre-Investment and Pre-Feasibility Studies, Market Surveys and Studies, Preparation of Techno-Economic Feasibility Reports, Identification and Selection of Plant and Machinery, Manufacturing Process and or Equipment required, General Guidance, Technical and Commercial Counseling for setting up new industrial projects and industry.

NPCS also publishes various technology books, directory, databases, detailed project reports, market survey reports on various industries and profit making business. Besides being used by manufacturers, industrialists and entrepreneurs, our publications are also used by Indian and overseas professionals including project engineers, information services bureau, consultants and consultancy firms as one of the input in their research.

