

**Dyes, Electroplating, Metal Treatment, Paints,  
Pigments, Plastics, Resin, Rubber, Surface  
Coating, Textile Spinning & Processing,  
Varnishes, Lacquer, Thinner, solvent,  
Enamel, Textile Printing, weaving,  
Finishing, Polymer**

[Modern Technology of Plastic Processing Industries \(2nd Edition\)](#)

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI22

**Pages:** 592

**ISBN:** 8186623426

**Price:** Rs. 975.00 US\$ 100.00

Plastics are contemporary, synthetic materials. Plastics are oil and gas based, and consumes less than four per cent of our oil and gas reserves. Plastic in fact saves the energy it takes less energy to convert into plastic from raw materials. Throughout their whole life circle one-third less energy needs than making paper bags. Without plastic, whole packaging would take almost double energy by around 160 percent. The better-quality properties of plastics such as sanitized or germ free barrier properties, light weight, and durability contribute appreciably to our health and quality to way of life. The Plastic industry has been witnessing a continuous increase in demand from a long time attracting many towards it. To all those who are looking forward for a proper understanding of technology and methodology used in the plastic industries so that they could penetrate into plastics industries with a consideration of the current industry trend then this book provides you about certain very essential information about Plastic. PVC can be processed by all the conventional conversion processes as used for other thermoplastics but with some modifications. This book covers an intensive study of Current Trends in Conducting Polymers with a significant and detail explanation of thermosetting, thermoplastic material and products environment health and the future prospects. The content of the book includes information about plastic and allied products equipped with latest technology. It also includes comprehensive information on the development of the sector and manufacturing process. The several chapters of the book contain information about: Processing of PVC, Applications of PVC and so on. The book also has chapter that will provide you with some very interesting, feasible and profitable plastic project profiles that will act as guide in proper understanding and analysis of the sector. Recent Developments in Plastics Extrusion and Environment Health and Future Prospects, Constructive use of HDPE, The Processing of Fibre Re-in forced Thermo- plastics Using Co-Rotating Twin Screw Extruders, Economical Film Extrusions with Modular Systems these are few chapters that are very informational and will help you in deep penetration of the industry. Along with these feature the book also encloses a directory section which list all major manufacturers of plastic processing machinery and raw material suppliers.

# Profitable Plastic Industries

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI24

**Pages:** 248

**ISBN:** 818662323X

**Price:** Rs. 250.00 **US\$** 50.00

Plastic has brought immense benefits to the society in a number of ways. A number of industries have been benefitted by plastic. In actuality, plastic has helped aeronautics technology take massive steps forward over the past 50 years, including advancements in satellites, shuttles, aircraft, and missiles. In addition, pharmaceuticals industry, the building and construction, electronics, packaging, and transportation industries have all benefited greatly from plastic. Plastic is superior, light, sturdy and economical to produce. There are numerous benefits of using plastic. It does not decay but it can instead be recycled. Unlike aluminium cans, plastic bottles can be reused and stored for a longer period of time. Plastic is usually unbreakable and it is transparent. It's light-weight and odourless. Plastics are oil and gas based, and consumes less than four per cent of our oil and gas reserves. To sum up modern day advancement is highly dependable on plastic industry. Plastic has emerged as one of the most important invention of mankind with utmost tendency to grow. Thorough knowledge of profitable plastic industry can help you to get deeper penetration and reap advantage. Besides you can also get better understanding of plastic industry if you read on profitable plastic profiles. So that if you try your hands you are altogether not perplexed. This book gives you a brief summary of profitable plastic profiles. Let's talk about the introductory chapter that is on Disposable Plastic Syringes, Needles & Needle Tube Plant. With the development of pharmaceutical industries the use of syringes and disposable needles has also witnessed an increase in demand. This means that the projects aims at manufacturing each and every components of a syringe within the plant and assemble them into a complete syringe for sale under its own reliable brand name. Similarly the other chapters of the book like Electroplating of Plastics, Disposable Plastic Cups and Glass, Polyester Resin Etc deal in topics with great detail. The book provides you with comprehensive information on installation of entire equipments needed for an integrated Disposable syringe plant. The book aims to provide you with many other profitable profiles, the manufacturing process, and details of present manufacturer of the profile dealt.

# Manufacture of Paint, Varnish & Allied Products (2nd Revised Edition)

**Author:** NPCS Board

**Format:** Hardcover

**Book Code:** NI25

**Pages:** 132

**ISBN:** 9789381039175

**Price:** Rs. 1,495.00 **US\$** 150.00

\*\*\*\*\*Limited Edition- available in Photostat Version

Only\*\*\*\*\* Paint is any liquid, liquefiable, or mastic composition that, after application to a substrate in a thin layer, converts to a solid film. It is most commonly used to protect, color, or provide texture to objects. Paint can be made or purchased in many colors—and in many different types, such as watercolor, artificial, etc. Paint is typically stored, sold, and applied as a liquid, but dries into a solid. Varnish is a transparent, hard, protective finish or film primarily used in wood finishing but also for other materials. Varnish is traditionally a combination of a drying oil, a resin, and a thinner or solvent. Varnish finishes are usually glossy but may be designed to produce satin or semi-gloss sheens by the addition of "flatting" agents. Varnish has little or no color, is transparent, and has no added pigment, as opposed to paints or wood stains, which contain pigment and generally range from opaque to translucent. The technology of paints, varnishes and allied products is changing rapidly and becoming more complex each day. The paint industry is an important segment of the chemical industry. Paint technology utilizes the science of chemistry, physics and engineering. The paint industry is broadly classified into decorative and industrial segment. Decorative paints consist 70% of market. Paints, varnishes, and allied product industry is gaining ground at a rapid pace in modern time accompanied with closed advance in surface coating technology. They are formulated for specific purposes like outside house paints and exterior varnishes are intended to give good service when exposed to weathering; interior wall paints are formulated to give excellent coverage. The Rs 40,600-crore Indian paint industry is likely to see a 20 per cent compounded annual growth rate until 2016. The industry will reach the level of Rs 62,000 crore in the next two years. The rural market grew 20 per cent. Rural India's incremental consumption expenditure is growing well. And, the rural sector has a major share of the decorative paints segment. In FY14, per capita consumption of paint increased to a little over four kg, of which the decorative segment contributed 73 per cent at Rs 29,638 crore. The remaining Rs 10,962 crore was contributed by the industrial segment. The unorganized sector has around 35 per cent of the paint market. In the unorganized segment, there are about 2,500 units. The future for industrial paints, varnishes and allied product is bright. The content of the

book includes information about Paint, Varnish & Allied Products. The major contents of this book are project profiles of projects like Paint industry in India, Acrylic emulsion paints, Aluminium Paint, Cement Paint, Industrial paint, N.C. Thinner, Oil Based Paint, Paint Additives, Red Oxide Paint, Stoving Paint, insulating Varnishes etc. Project profile contains information like properties, B.I.S specification, market survey, manufacturing process, suppliers of raw material, process flow diagram, plant economics, land and building, plant and machinery, fixed capital, working capital requirement/month, total working capital/month, cost of project, total capital investment, turn over/annum, profit sales ratio, rate of return, breakeven point (B.E.P). This book is very useful for new entrepreneurs, technical institutions, existing units and technocrats.

# Handbook on Biodegradable Plastics (Eco Friendly Plastics)



**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI26

**Pages:** 276

**ISBN:** 8186623531

**Price:** Rs. 600.00 US\$ 100.00

Plastic has brought immense benefits to the whole human race. The light weight, cheap chemical resistant and strong material has got almost omnipotent presence. When we talk of its strength we talk of the time till it survives and to everyone's knowledge plastic does not bio-degrade. Yes, plastic the greatest invention of mankind has the power to even destroy mankind. Plastic that is not biodegradable brings a lot of environmental issues. It deteriorates the ozone layer. For the most part plastic is produced from oil. The world is progressively running out of oil. Research says plastic brings number of harms not only to humans but also the entire cosmos. The plastic which cannot be recycled has to be disposed off in some or the other way. Let's say if we dispose in water it has the tendency to destroy marine life. So the only way left to reduce the ill effects of plastic is to use eco-friendly or biodegradable plastic. Biodegradable plastics are plastics that will decay in usual aerobic environments. These include plastics that are made from vegetable oil and other organic matter. The book, Handbook on Bio Degradable Plastics (Eco friendly plastics) is one of its kinds which give the information about biodegradable plastics. The book gives comprehensive information about Standard Methods for Biodegradation of Plastics, Commercialization of Eco-Friendly Plastics, and multipurpose exploitation of municipal solid waste (plastics), management of non recoverable plastic waste, guidelines to be followed in recycling of plastic and several other crucial topics required for the understanding of recycling of plastic. According to a report out of 200 million plastic produced in the world 26 million is produced by the United States and only 6%(approximately) of plastic waste gets recycled posing both a challenge and opportunity. Challenge in the sense that it is causing environmental issue and opportunity for the young entrepreneurs to penetrate in this sector. The book provides important and descriptive information on the whole topic of biodegradable plastic, the benefits and the techniques used. The book also contains information on topics arising social concern like present technologies for recycling of polyethylene terephthalate (pet) waste, how to minimise the impact of packaging materials on the environment and also provides information on new bio-degradable plastic, as business options for entrepreneurs. The book at the end contains a list of directory providing information on List of Plant & Machinery,

List of Raw Material, Plant/Machinery Suppliers, Overseas Suppliers of Machinery and Raw Material Suppliers.

# Electroplating, Anodizing & Metal Treatment Hand Book

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

**Format:** Paperback

**Book Code:** NI63

**Pages:** 720

**ISBN:** 9788178331386

**Price:** Rs. 1,475.00 **US\$** 150.00

Surface finishing is a broad range of industrial processes that alter the surface of a manufactured item to achieve a certain property. Currently, the trend is towards surface treatments. Surface engineering techniques are generally used to develop a wide range of functional properties, including physical, chemical, electrical, electronic, magnetic, mechanical, wear-resistant and corrosion-resistant properties at the required substrate surfaces. In general, coatings are desirable, or even necessary, for a variety of reasons including economics, material conservation, unique properties, or the engineering and design flexibility which can be obtained by separating the surface properties from the bulk properties. Surface engineered products thus increase performance, reduce costs, control surface properties independently of the substrate and medium, thus offering an enormous potential in the finishing Industry. Electro depositing of metals is a very significant industrial process. Electroplating is both an art and science. It entailed adhering a thin metal coating to an object by immersing it into an electrically charged solvent containing the dissolved plating metal. Electroplating served a number of functions, such as protecting from corrosion and wear, decoration, and electrical shielding. Anodizing most closely resembles standard electroplating. Anodizing or anodizing is an electrolytic passivation process used to increase the thickness of the natural oxide layer on the surface of metal parts. Anodizing increases corrosion resistance and wears resistance, and provides better adhesion for paint primers and glues than bare metal. Anodic films are most commonly applied to protect aluminium alloys. The aim of this handbook is to give the reader a perspective on several metal surface treatment techniques which are generally followed in the finishing Industry. This is a unique compilation and it draws together in a single source technical principles of surface science and surface treatments technologies of plastics, elastomers, and metals along with various formulae of bath solutions, current density, deposit thickness, manufacturing processes, various ingredients used in these processes. It is a very useful guide for the readers, engineers, scientists, practitioners of surface treatment, researchers, students, entrepreneurs and others involved in materials adhesion and processing.

# [The Complete Book on Resins \(Alkyd, Amino, Phenolic, Polyurethane, Epoxy, Silicone, Acrylic\), Paints, Varnishes, Pigments & Additives \(Surface Coating Products with Formulae\)\(3rd Revised Edition\)](#)

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

**Format:** Paperback

**Book Code:** NI64

**Pages:** 632

**ISBN:** 9788178331652

**Price:** Rs. 1,995.00 US\$ 150.00

Surface coating is the application of decorative or protective materials in liquid or powder form to substrates. These coatings normally include general solvent type paints, varnishes, lacquers, and water thinned paints. Surface coating involves different types of products for example paints, varnishes, resins, polyesters, pigments etc. Alkyd resin is complex oil modified polyester that serves as the film coating agent in some paints and clear coatings. Varnish is one of the important parts of surface coating industry. They are used as clear, transparent coatings or as vehicles for a wide variety of pigmented, opaque coatings for architectural and industrial purposes. India's strong economic growth has propelled the paint industry to double digit growth over the past few years and has made it Asia Pacific fastest growing paint market. The spurt in the economic growth over the past few years has caused a tremendous increase in the size of the industry. The field of surface coatings is now so extensive, and is developing rapidly. This handbook covers all aspects of coating technology including composition, preparation, application, manufacturing process and photographs of plant & machinery with supplier's contact details. The major contents of the book are oleoresinous media, varnishes: composition, manufacture & use, alkyd resin technology, manufacture of alkyd resins, polyesters, amino resins, phenolic resins, polyurethane resins, epoxy resins, silicone resins, acrylic solution resins, emulsion polymerization theory, emulsion polymers, water reducible resins, water soluble polymers, solvents, inorganic pigments, titanium dioxide pigments, organic pigments, paint driers and architectural paints etc. It will be a standard reference book for professionals, entrepreneurs, food technologists, those studying and researching in this important area and others interested in the field of resins, paints, varnishes, pigments & additive industry.

# Modern Technology of Paints, Varnishes & Lacquers (2nd Edition)

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI66

**Pages:** 682

**ISBN:** 8178330881

**Price:** Rs. 1,075.00 **US\$** 125.00

Surface coating industry is one of the most popular industries. Paints, varnishes and lacquers industry is gaining ground at a rapid pace in modern time accompanied with closed advance in surface coating technology. They are formulated for specific purposes: outside house paints and exterior varnishes are intended to give good service when exposed to weathering; interior wall paints are formulated to give excellent coverage and good wash ability; and lacquers are formulated for rapid drying. Varnish is one of the important parts of surface coating industry. Varnish is a transparent, hard, protective finish or film primarily used in wood finishing but also for other materials. They are used to change the surface gloss, making the surface more matte or higher gloss, or to provide the various areas of a painting with a more unified finish. Varnishes are also applied over wood stains as a final step to achieve a film for gloss and protection. Some products are marketed as a combined stain and varnish. Paint is any liquid, liquefiable, or mastic composition which after application to a substrate in a thin layer is converted to an opaque solid film. It is most commonly used to protect, colour or provide texture to objects. The paint industry volume in India has been growing at 15% per annum for quite some years now. As far as the future growth prospects are concerned, the industry is expected to grow at 12 to 13% annually over the next five years. The technology is required to produce different type of new paints and varnishes based on different type of uses. The paint and coatings industry plays an integral role in sustainability; coatings protect the objects we depend on every day, preserve our possessions, so they last longer and provide for a sustainable future. They are indispensable products that extend the useful life of everyday objects by acting as a protective barrier. These newer products have enabled paint manufacturers to improve the performance properties of their paints and coatings and so satisfy the more stringent requirements of our modern industrial society. The future for industrial paints, varnishes and lacquers is bright. In the next few years its value will go up gradually in line with the global trend. The major contents of the book are application of paints, fundamentals of paint, varnishes and lacquers, manufacturing of different type of paints, paint formulation, pigment dispersion, emulsion paints, and so on.

The book deals with fundamentals of paints, Varnishes and lacquers, pigments, Oils used in paints and varnishes, solvents, dryers, plasticizers, additives for surface coating, various types of paint manufacturing etc. The book is very useful for new entrepreneurs, existing units, technocrats, technical institutions and for those who wants to diversify in the field of paints manufacturing.



# Modern Technology of Textile Dyes & Pigments (2nd Revised Edition)

**Author:** Dr. H. Panda

**Format:** Paperback

**Book Code:** NI67

**Pages:** 512

**ISBN:** 9789381039717

**Price:** Rs. 1,675.00 **US\$** 150.00

Dyestuff sector is one of the core chemical industries in India. There are two types of colorants dyes and pigments. Dyes are soluble substances used to pass color to the substrate and find applications primarily in textiles and leather. Pigments are coloring materials, which are water insoluble. Key end-user industries of pigments include wood-coloring, stone, textiles, paints & coatings, food and metals. Pigment are usually manufactured as dry colorants and grounded into fine powder. The dyes market, meanwhile, largely depends upon the fortunes of its principal end-user, textiles, which account for about 70 percent of the total demand. Their importance has grown in almost every area of an economic activity. In the colorants market, Asia-Pacific accounts for the largest share. This region is one of the key markets for dyes and pigments production. In the Asia-Pacific, India and China are the important countries contributing towards the growth of colorants market. Rising consumer spending will drive increased demand for colorants in textiles. Increases in value demand will reflect the growing importance of expensive, higher value dyes and pigments that meet increasingly stringent performance standards. Growing demand for high-quality value-added pigments is one of the key factors expected to result in a spurt in growth. This book describes the various formulae, manufacturing processes and photographs of plant & machinery with supplier's contact details. The major contents of the book are metal pigments, black pigments, inorganic colour pigments, organic colour pigments, extender pigments, white pigments, photocatalytic activity of titanium dioxide pigment, azo pigments, bisazo pyridine pigments, high grade organic pigments, high temperature stable inorganic pigments, anti corrosive pigments, metals and metal ions in pigmentary systems, control of organic pigment dispersion properties, pigments for plastics, rubber & cosmetics, pigments for printing inks, vat dyes, reactive dyes, disperse dyes, direct dyes and sulphur dyes etc. It will be a standard reference book for professionals, entrepreneurs, those studying and researching in this important area and others interested in the field of textile dyes & pigments.

# Modern Technology of Plastic & Polymer Processing Industries

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI83

**Pages:** 429

**ISBN:** 8178330776

**Price:** Rs. 750.00 US\$ 100.00

The Indian plastic and polymer industry has taken great strides. In the last few decades, the industry has grown to the status of a leading sector in the country with a sizable base. The material is gaining notable importance in different spheres of activity and the per capita consumption is increasing at a fast pace. Continuous advancements and developments in polymer technology, processing machineries, expertise and cost effective manufacturing is fast replacing the typical materials in different segments with plastics. Plastics play a very important role in our daily lives. Throughout the world the demand for plastic, particularly plastic packaging, continues to rapidly grow. Polymer processing industry deals with the manufacture and production of polymer and synthetic substances for example acrylic plastics: poly (methyl methacrylate), poly vinyl chloride (PVC), polyamides, polyesters, cellulose plastics etc. Plastic is incredibly versatile and can be made from different ingredients, moulded into any shape, and put to a huge range of uses across industry and the rest of society. Polymer Energy system is an award winning, innovative, proprietary process to convert waste plastics into renewable energy. Polymers are the most rapidly growing sector of the materials industry. No wonder polymers are found in everything from compact discs to high tech aerospace applications. On the basis of value added, Indian share of plastic products industry is about 0.5% of national GDP. This book majorly deals with properties and applications of engineering, the strength of thermoplastic composites, and the application of thermoplastic structural composites, applications of differential scanning, calorimetry and polymer characterization, polymer degradation and stabilization, advances in photo degradation and stabilization of polyurethanes and so on. This book also consists of raw material suppliers for plastic and plastic products, manufacturers of plastic processing machinery, plastics processing machinery and equipment (foreign), machinery and equipment for plastic converting, extruders and extrusion lines, injection moulding machines and so on. This book offers, in standardized and readily accessible information on the synthesis, structure, properties and applications of the most important polymeric materials. It has been designed as a text giving a balanced coverage of the science and

technology of polymers finding major applications plastics.  
This book is very useful for industrialists, consultants,  
research scholars and institutes.

# Polymers and Plastics Technology Handbook

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI84

**Pages:** 424

**ISBN:** 8178330768

**Price:** Rs. 750.00 US\$ 100.00

Plastics play a very important role in our daily lives. Throughout the world the demand for plastic, particularly plastic packaging, continues to rapidly grow. Polymer technology deals with the manufacture and production of polymer and synthetic substances. Plastic is incredibly versatile and can be made from different ingredients, moulded into any shape, and put to a huge range of uses across industry and the rest of society, from carrier bags to electrical cables. Polymer energy system is an award winning, innovative, proprietary process to convert waste plastics into renewable energy. Some of the important example of polymers and plastics are polytetra fluoroethylene (PTFE), polyether sulphone (PES), phenol-formaldehyde (PF), polyolefins, vinyl polymers, thermoplastic polyesters, polysulfones, poly(phenylene sulfide), etc. Polymers are the most rapidly growing sector of the materials industry. The Indian plastic industry has taken great strides. In the last few decades, the industry has grown to the status of a leading sector in the country with a sizable base. The material is gaining notable importance in different spheres of activity and the per capita consumption is increasing at a fast pace. Continuous advancements and developments in polymer technology, processing machineries, expertise, and cost effective manufacturing is fast replacing the typical materials in different segments with plastics. On the basis of value added, Indian share of plastic products industry is about 0.5% of national GDP. The major contents of the book are properties and applications of speciality plastics, thermoset plastics, applications of recycle plastics, introduction of polymer science, polymer additives, blends and composites, commodity thermoplastics and fibres etc. This book also consists of raw material suppliers for plastic and plastic products, manufacturers of plastic, processing machinery, plastics processing machinery and equipment (foreign), machinery and equipment for plastic converting, extruders and extrusion lines, injection moulding machines, presses and accessories, blow moulding and thermoforming machines etc. The book has been designed with the idea of blending and integrating basic polymer science and the technology of plastics into a composite structure. This book is an outcome of an endeavour in the direction of polymer and plastic processing. It would be of immense use to entrepreneurs, consultants, students and libraries etc.

# The Complete Technology Book on Dyes & Dye Intermediates

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI91

**Pages:** 730

**ISBN:** 8186623795

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

Dyeing is the process of imparting colours to a textile material. Different classes of dyes are used for different types of fiber and at different stages of the textile production process, from loose fibres through yarn and cloth to completed garments. Dyes are any substance, natural or synthetic, used to colour various materials, and have wide industry applications ranging textiles, leather, and food, paper etc. They are available in widest ranges for different applications like acid dyes for wool and nylon, direct dyes for cotton, etc. Dyes and its intermediates are specifically used to make the textiles decorative and attractive. At present, India contributes about 6% of the share in the global market with a CAGR of more than 15% in the last decade. The organized sector dominates, with 65% share of the total market, while the unorganized sector controls the remaining 35% of the market. The demand for dyes and dye intermediates is expected to grow at around 6%, backed by strong demand from the textiles, leather, and inks industries. Dyestuff sector is one of the core chemical industries in India. It is also the second highest export segment in chemical industry. The major users of dyes in India are textiles, paper, plastics, printing ink and foodstuffs. The textiles sector consumes around 80% of the total production due to high demand for polyester and cotton, globally. Globally the dyestuffs industry has seen an impressive growth. This book majorly deals with classification & nomenclature of dyes, commercial form of dyes, properties, formulae, applications of dyes, manufacturing process of dye intermediates, plant and machinery used etc. The major contents of the book are diazotization, coupling, azo coupling, oxidative coupling, anthraquinone dyes; disperse dyes, dispersion, effect of dispersing agents etc. Due to increasing growth of textile industries, demand of dyes and dye Intermediates are also increasing very fast in domestic as well as in global market. The book gives stress on syntheses of different types of dyes and dye Intermediates. The formulae and processes have been described in very proper way. Professionals, corporate houses and new entrepreneurs will find this book very useful.



# The Complete Technology Book on Textile Spinning, Weaving, Finishing and Printing (3rd Revised Edition)

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

**Format:** Paperback

**Book Code:** NI107

**Pages:** 564

**ISBN:** 9788178331638

**Price:** Rs. 1,725.00 US\$ 150.00

Textile industry is one of the few basic industries, which is characterised as a necessary component of human life. One may classify it as a more glamorous industry, but whatever it is, it provides with the basic requirement called clothes.

Spinning is the process of converting cotton or manmade fibre into yarn to be used for weaving and knitting. Weaving is a method of textile production in which two distinct sets of yarns or threads are interlaced at right angles to form a fabric or cloth. Finishing refers to the processes that convert the woven or knitted cloth into a usable material. Printing is the process of applying colour to fabric in definite patterns or designs. The textile industry occupies an important position in the total volume of merchandise trade across countries.

Developing countries account for little over two-third of world exports in textiles and clothing. It is the second largest employer after agriculture, providing employment to over 45 million people directly and 60 million people indirectly. The future for the textile industry looks promising, buoyed by both strong domestic consumption as well as export demand. This book is based on the latest technology involved in textile industry, which describes the processes available at the spinning and fabric forming stages coupled with the complexities of the finishing and colouration processes to the production of wide ranges of products. The major contents of the book are dyeing of textile materials, principles of spinning, process preparatory to spinning, principles of weaving, textile chemicals, yarn preparation, weaving and woven fabrics, knitting and knit fabrics, nonconventional fabrics, cellulose, mixed fibers, printing compositions, printing processes, transfer dyes, transfer inks etc. It describes the manufacturing processes and photographs of plant & machinery with supplier's contact details. It will be a standard reference book for professionals, entrepreneurs, textile mill owners, those studying and researching in this important area and others interested in the field of textile industry.

# The Complete Technology Book on Textile Processing with Effluent Treatment

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI108

**Pages:** 584

**ISBN:** 8178330504

**Price:** Rs. 1,000.00 US\$ 100.00

Textile manufacturing is a major industry, it is based in the conversion of three types of fibre into yarn, then fabric, then textiles. These are then fabricated into clothes or other artefacts. Cotton remains the most important natural fibre, so is treated in depth. There are many variable processes available at the weaving and fabric forming stages coupled with the complexities of the finishing and colouration processes to the production of wide ranges of products. Certain other fiber properties increase its value and desirability in its intended end use but are not necessary properties essential to make a textile fiber. Such secondary properties include moisture absorption characteristics, fiber resiliency, abrasion resistance, density, luster, chemical resistance, thermal characteristics, and flammability. Some primary properties of textile fibers are: fiber length to width ratio, fiber uniformity, fiber strength and flexibility, fiber extensibility and elasticity, and fiber cohesiveness. Some, mostly larger, firms operate in the organized sector where firms must comply with numerous government labour and tax regulations. Most firms, however, operate in the small scale unorganized sector where regulations are less stringent and more easily evaded. The textile industry occupies a unique place in our country. One of the earliest to come into existence in India, it accounts for 14% of the total Industrial production, contributes to nearly 20% of the total exports. Being the largest foreign exchange earner, it accounts for more than 5 per cent of GDP. This book majorly deals with characteristics of cotton textile processing, characteristics of effluents, characteristics and treatment of synthetic, textiles processing effluents, processes, volume and characteristics of effluents, treatment, the properties of textile fibres, important properties of fibres, basic aspects of textile fibres etc. The book covers complete details of textile processing with the standard parameters of effluents treatment which is the burning problem for the textile processors. Needless to say that this book will be of immense use to textile processors, consultants and chemists engaged in water and waste water treatment, research institutions etc.

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**[The Complete Technology Book on Electroplating, Phosphating,](#)**

# Powder Coating And Metal Finishing

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI129

**Pages:** 696

**ISBN:** 8178330555

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

Electroplating and Metal Finishing concerns itself with the development and applications of composites and non metallic coatings. These coatings are used for decorative, protective and functional application. Some of the other common metal surface finishing technologies are phosphating, pickling, electroforming, powder coating etc. Electroplating is the process of applying a metallic coating to an article by passing an electric current through an electrolyte in contact with the article, thereby forming a surface having properties or dimensions different from those of the article. Metal finishing has now come to be known as surface engineering. Surface engineering techniques are generally used to develop a wide range of functional properties. In addition to the decorative aspects, metal finishing aids the protection of metals and alloys from corrosion and rusting. A great potential exists for development of new materials involving, for example, coatings of metals composites particle incorporated anodic coatings and even films of sapphire like materials, porous films of niobium etc. and coating of refractory metals like molybdenum and tungsten. Phosphate coatings have a wide field of application in manufacturing industry, both as an aid to mechanical production operations and in surface finishing. The major applications for phosphate treatments fall into four areas; pre treatment prior to organic coatings, protection against corrosion, anti wear coatings and phosphating as a production aid. Powder coating of aluminium, extrusions in particular, has become an important feature in the finishing of aluminium. There are several advantages of powder; powder coating overspray can be recycled and thus it is possible to achieve nearly 100% use of the coating, powder coating production lines produce less hazardous waste than conventional liquid coatings, capital equipment and operating costs for a powder line are generally less than for conventional liquid lines. Surface finishing is a broad range of industrial processes that alter the surface of a manufactured item to achieve a certain property. Currently, the trend is towards surface treatments. Industries in developing countries like India have to be increasingly aware of the need not only for up gradation of existing technologies but also for indigenization of new technologies on a time bound basis. The content of the book includes information about technology involved in surface engineering of metals; some of

them are electroplating plant, barrel plating plant, electroplating equipment, cleaning, pickling and dipping, equipment for hot alkaline cleaners, electrolytic and chemical processes for the polishing of metals, canning stainless steel electro-polishing solution, electroforming in gramophone record production, silver plating, fluoborate plating, gold plating (gilding), cadmium plating, zinc plating, chemical finishing of aluminium, powder coating of aluminium, bright nickel electro plating, copper plating, etc. This book covers an intensive study of technology of electroplating, phosphating, powder coating and metal finishing. The first hand information on these technologies is dealt in the book and can be very useful for those looking for entrepreneurship opportunity in the said industry.

# Synthetic Resins Technology Handbook

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

**Format:** Paperback

**Book Code:** NI150

**Pages:** 588

**ISBN:** 8178330261

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

Synthetic resin is typically manufactured using a chemical polymerization process. This process then results in the creation of polymers that are more stable and homogeneous than naturally occurring resin. Since they are more stable and are cheaper, various forms of synthetic resin are used in a variety of products such as plastics, paints, varnishes, and textiles. There are various kinds of synthetic resins; acetal resins, amino resins, phenolic resins, epoxy resins, fufuryl alcohol: resins, fluorocarbon resins, polyurethane resins, etc. Resins are polymeric compound which are available in nature and are also manufactured by synthetic routes. Some resins are also manufactured by partial modification of natural precursor polymer by chemical. The classic variety is epoxy resin, manufactured through polymerization, used as a thermoset polymer for adhesives and composites. Epoxy resin is two times stronger than concrete, seamless and waterproof. Various thermoplastic thermosetting polymers, including elastomers, have been incorporated to modify the properties for the cured epoxy resin products. Elastomers provide greater elongation and impact strength. Polysulfides, the most commonly used elastomer to flexibilise epoxy resins. Heat resistant polymers are employed for the various uses; heat flame resistant fibers plus ultra high strength, high modulus fibers; films, laminating varnishes and wire enamels; structural adhesives and molding powders. The Synthetic Resin Manufacturing industry initially enjoyed strong growth over its earlier history as plastics began to increasingly replace traditional materials such as wood, leather and metal. Plastic is estimated to have been the most used material globally. The book basically deals with new raw materials for cost reduction of alkyds and unsaturated polyester, amino resins, polyester based resins, enzymatic synthesis of phenolic copolymers, radiation curable hybrid formulation, self polishing anti fouling, epoxy resins, epoxy resins from methyl epichlorohydrin, fillers, reinforcements, and other additives, cardanol modified epoxy resins, baking coatings from epoxy derived from cardanol, phenolic resins, polyurethane resins, aqueous polyurethane dispersion technology, heat resistant resins, etc. The resin have wide industrial uses like in lacquers, paints, textiles, varnishes, printing inks and cosmetic etc. this book contains formulae, processes and applications of various resins. This book will



be very resourceful to new entrepreneurs, consultants, technical institutions, libraries and for those who wants to venture into this field.

# The Complete Technology Book on Synthetic Resins with Formulae & Processes

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

**Format:** Paperback

**Book Code:** NI151

**Pages:** 512

**ISBN:** 818662399X

**Price:** Rs. 1,150.00 **US\$** 125.00

Synthetic resin is typically manufactured using a chemical polymerization process. This process then results in the creation of polymers that are more stable and homogeneous than naturally occurring resin. Since they are more stable and are cheaper, various forms of synthetic resin are used in a variety of products such as plastics, paints, varnishes, and textiles. There are various kinds of synthetic resins; silicones resins, polyvinyl pyrrolidone, gum arabic, epoxy resins, guar gum, carrageenan, carboxymethyl cellulose, etc. Resins are polymeric compound which are available in nature and are also manufactured by synthetic routes. Some resins are also manufactured by partial modification of natural precursor polymer by chemical. Silicones are unique among the commercially important polymers both in chemistry and in variety of industrial applications. Silicones can be applied as high temperature insulating varnishes, impregnates to be used with glass, asbestos, mica products and encapsulating agents for electrical components. Water borne dispersions or emulsions, for example emulsions of vinyl or acrylic copolymers are popular in decorative coatings. The applications of synthetic resins are seen in some important industries like paint industry, adhesive industry, the textile industry, paper, paint, agricultural industry, petroleum industry etc. As it can be seen that there is an enormous scope of application of resins hence it is one of the major field to venture. Some of the fundamentals of the book are electrodepositable pigmented coating compositions based on alkyd resins, phosphorus containing allyl resins, vapour permeation cure technology, characterization of water soluble anodic electrodepositive pigmented coating compositions, protection of concrete substrates, zinc rich coatings, electro deposition primers, developments in thermosetting powder coatings, application of powder coatings, polyethylene glycol, petroleum recovery and processing, industries using polyethylene glycols, silicones resins, preparation & formulation of silicone resin based coatings, pigments and dyes etc. Synthetic Resins are used by lot of industries. Yet, little emphasis has been placed on the comparative value on functionality of polymeric material as a class. These resins have been classified in separate categories, usually in terms of their Chemistry, sources or end uses. The present book contains formulae, processes and other valuable details for

various synthetic resins. This is very useful book for those concerned with development, consultants, research scholars, new entrepreneurs existing units, institutional libraries etc.

# Natural Fibers Handbook with Cultivation & Uses

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

**Format:** Paperback

**Book Code:** NI154

**Pages:** 560

**ISBN:** 8186623981

**Price: Rs. 1,275.00 US\$ 125.00**

Natural fibers production, processing and export are vital to the economies of many developing countries and the livelihoods of millions of small scale farmers and low wage workers. Almost all natural fibers are produced by agriculture, and the major part is harvested in the developing world. It is convenient to classify natural fiber in two ways; morphologically, according to the part of plant from which they are obtained and practically according to the uses to which they are put, which in turn depend on their properties. From the view point of the uses vegetable fibers may be classified into following groups; textile fibers, cordage fibers, brush and mat fibers, stuffing and upholstery materials, paper making materials etc. Fibers from the view point of the part are classified as hair fibers, leaf fibers, woody fibers, bast fibers, etc. The use of fibers for paper making differs completely from their use in textiles, in that in papermaking it is ultimate fiber cells which are used; thus in papermaking process consists in breaking down the strands of fiber into the ultimate fibers. Jute, the most important textile fiber apart from cotton, is obtained from two species of corchorus(white jute) and *C.olitorius*L. (tossa jute). Farmers around the world produce a wide variety of natural fibres, planting crops and rearing animals. Plant fibres may be from the plant fruit (e.g. cotton), stems (e.g. flax and jute) or leaf (e.g.sisal). Natural fibres are generally considered more environment friendly than synthetics in their production and disposal. However, there is great variation depending on the fibre and the growing conditions. Many chemicals are used to contain pests and weeds. Chemicals are also used in the processing and dyeing which can lead to water contamination. Processing of some natural fibers can lead to high levels of water pollutants, but they consist mostly of biodegradable compounds, in contrast to the persistent chemicals, including heavy metals, released in the effluent from synthetic fiber processing. Farming and production of natural fibres also plays a significant role in eradicating poverty as an important source of farming income and contribution to food security in developing countries. Demand for natural fiber composites are largely driven by increasing environmental awareness. Due to low cost, low density, acceptable specific properties, ease of separation, enhanced energy recovery, CO<sub>2</sub> neutrality, biodegradability and recyclable properties, natural fiber use in composites is

gaining as demand grows for component materials that are durable, reliable, light weight, with mechanical properties better than those of traditional materials. Total global natural fiber composite market expected to grow at 11% CAGR. Some of the fundamentals of the book are the occurrence and nature of vegetable fibres, conditions necessary for growing flax, mulberry family (moraceae), lime family (titliaceae), experiments on mechanized production of jute, mallow family (malvaceae), kenaf production in various other countries, the use of unretted kenaf ribbons for sack manufacture, pea family (leguminosae), sterculia family (sterculiaceae), agave family (agavaceae), structure of the sisal industry, narcissus family (amaryllidaceae), lily family (liliaceae), pineapple family (bromeliaceae), fibres from other species of musa and a related genus, brush making fibres, etc. The book contains process and other parameters for the manufacturing of fibers arrive from natural sources. Due to eco friendly nature there is very good domestic and export potentiality for natural fiber. This is very useful book for new generation entrepreneurs, consultant institutional libraries, and existing units.

# Speciality Plastics, Foams (Urethane, Flexible, Rigid) Pet & Preform Processing Technology Handbook



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

**Format:** Paperback

**Book Code:** NI156

**Pages:** 672

**ISBN:** 8178330288

**Price:** Rs. 1,275.00 **US\$** 125.00

Plastic technology is one of the fields where people can show their ability and performance both theoretically and practically. The Indian plastic and polymer industry has taken great strides. In the last few decades, the industry has grown to the status of a leading sector in the country with a sizable base. The material is gaining notable importance in different spheres of activity and the per capita consumption is increasing at a fast pace. Continuous advancements and developments in polymer technology, processing machineries, expertise and cost effective manufacturing is fast replacing the typical materials in different segments with plastics. Some examples of the specialty plastics are polytetra fluoroethylene (PTFE) , thermoplastic polyurethanes (TPU), polysulphones (PSO), polyester sulphone (PES), polyarylates, polyamide imide (PAI), etc. Polyurethane is polymer composed of a chain of organic units joined by carbamate (urethane) links. Polyurethane polymers are formed by combining two bi or higher functional monomers. Urethane foam is an artificial material with several different uses. The manufacturing process can produce foams of varying densities and flexibilities. This means it can serve functions as diverse as bedding, packaging and footwear. It is important to note that urethane foam is most commonly used to refer to a material made from polyurethane. Furniture, bedding, automotive interiors, energy management, footwear and insulation utilize flexible foam technology due to its wide range of density, cushioning ability and versatility of use. Appliance (refrigeration, water heaters), construction panels, roofing boardstock, and spray applied insulation utilize rigid polyurethane foam due its superior insulating and mechanical properties to reduce energy consumption and enhance structural integrity of the finished product. The versatility of the technology and processability makes rigid polyurethane foam uniquely suited for other applications, like architectural molding, energy absorbing materials in automobiles, entry doors, and even picnic coolers. Polymer Energy system is an award winning, innovative, proprietary process to convert waste plastics into renewable energy. Polymers are the most rapidly growing sector of the materials industry. Some fundamentals of the book are properties and applications of speciality plastics, thermoplastic polyurethanes, formation of urethane foams,

flexible foams, variables in the preparation of prepolymers, procedures for the preparation of prepolymers, catalyzed prepolymer preparation, application of flexible foams, applications of rigid foams, one-stage injection stretch blow moulding, pet material and applications, injection and co-injection preform technologies, pet film and sheet, plastics as safe & hygienic medium for packaging food & food products The book covers processes and other required information for the manufacturing of different specialty plastics, Foams, PET and Pre form PET etc. This is very useful book for new entrepreneurs, technocrats, existing units, institutional libraries etc.

# The Complete book on Natural Dyes & Pigments

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

**Format:** Paperback

**Book Code:** NI160

**Pages:** 448

**ISBN:** 8178330326

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

Natural dyes are dyes or colorants derived from plants, invertebrates, or minerals. The majority of natural dyes are vegetable dyes from plant sources. Dyeing is the process of imparting colors to a textile material. Different classes of dyes are used for different types of fiber and at different stages of the textile production process, from loose fibers through yarn and cloth to completed garments. There are technologies that manufacture the pigments for plastics, rubber and cosmetics. Therefore; dyes and pigments have a vast area of applications and have a huge demand in industry. Contrary to popular opinion, natural dyes are often neither safer nor more ecologically sound than synthetic dyes. They are less permanent, more difficult to apply, wash out more easily, and often involve the use of highly toxic mordant. Of course, the colour possibilities are far more limited; the color of any natural dye may be easily copied by mixing synthetic dyes, but many other colors are not easily obtained with natural dyes. However, some mordant are not very toxic, and the idea of natural dyestuffs is aesthetically pleasing. Applying natural dyes in your fabric production using enzymes will reduce your production cost and improve control. There are various kind of natural dyes; quinonoid dyes, cyanine dyes, azo dyes, biflavyonyl dyes, omochromes, anthraquinone, coprosma gesus etc. The use of natural dyes in cloth making can be seen as a necessary luxury to trigger off a change in habits. Dyes which stand out for their beauty and ecological attributes would never be employed on just any material but on noble fabrics such as wool, silk, linen or cotton, made to last more than one season. Market value will benefit from consumer preferences for environmentally friendly products, which will support consumption of high performance dyes and organic pigments. This book basically deals with the use of carotenoids as food colours , bianthraquinones and related compounds, intermediate degradation products of biflavonyls, dyestuffs containing nuclear sulphonic and carboxylic acid groups, quinonoid dyes, cyanine dyes, optical whitening agents, natural dyes for food, stability of natural colourants in foods effect of additives, pyrimidine pigments, the total synthesis of the polyene pigments, red pigment from geniposidic acid and amino compound, effect of acid and amine on the formation of red pigment from geniposidic acid, effect of the substituted position of amino group and chain length of amino compound

etc. Due to pollution problems in synthetic dyes and pigments industry, the whole world is shifting towards the manufacturing of natural dyes and pigments. The present book contains techniques of producing different natural dyes and pigments, which has huge demand in domestic as well as in foreign market. It is hoped that entrepreneurs, technocrats, existing units, institutional libraries will find this book very useful.

**Directory/ Database/ List of Rubber Industries/ Companies in India  
(Manufacturers of Rubber & Rubber Products, Rubber Chemicals,  
Machinery Suppliers etc.) 4th Edition [.xlsx, excel format]**

**Format:** CD-Rom

**Book Code:** NID84

**Price:** Rs. 4,130.00 **US\$** 150.00

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## [The Complete Book on Rubber Processing and Compounding](#)

## Technology (with Machinery Details) 2nd Revised Edition

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

**Format:** Paperback

**Book Code:** NI174

**Pages:** 680

**ISBN:** 9788178331621

**Price: Rs.** 1,875.00 **US\$** 150.00

The production of rubber and rubber products is a large and diverse industry. The rubber product manufacturing industry is basically divided into two major sectors: tyre and non-tyre. The tyre sector produces all types of automotive and nonautomotive tyres whereas the non-tyre sector produces high technology and sophisticated products like conveyor belts , rubber seals etc. The wide range of rubber products manufactured by the rubber industry comprises all types of heavy duty earth moving tyres, auto tyres, tubes, automobile parts, footwear, beltings etc. The rubber industry has been growing tremendously over the years. The future of the rubber industry is tied to the global economy. Rapidly growing automotive sector in developing economies and increased demand for high-performance tyres are expected to contribute to the growth of the global industrial rubber market. The current scenario reveals that there is a tremendous scope for the development of rubber processing industries. The global market for industrial rubber products is projected to increase 5.8 % per year. Investment in rubber industry is expected to offer significant opportunities in the near future and realizing returns to investors willing to explore this sector. This book deals with all aspects of rubber processing; mixing, milling, extrusion and molding, reclaiming and manufacturing process of rubber products. The major contents of the book are rubbers materials and processing, mixing technology of rubber, techniques of vulcanization, rubber vulcanization, rubber compounding, rubber reclaiming, manufacture of rubber products, latex and foam rubber, silicone rubber, polybutadiene and polyisoprene, styrene butadiene rubber, rubber natural etc. The book contains addresses of plant & machinery suppliers with their Photographs. It will be a standard reference book for professionals, entrepreneurs, those studying and researching in this important area and others interested in the field of rubber processing technology.

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## Handbook on Natural Dyes for Industrial Applications (Extraction of Dyestuff from Flowers, Leaves, Vegetables) 2nd Revised Edition



**Author:** Dr. Padma S Vankar

**Format:** Paperback

**Book Code:** NI195

**Pages:** 432

**ISBN:** 9789381039755

**Price:** Rs. 1,575.00 US\$ 150.00

Dyeing is the process of imparting colors to a textile material. Natural dyes are friendly and satisfying to use. They are obtained from sources like flowers, leaves, insects, bark roots etc. however, they are not readily available and involve an extraction process. With the advancement of chemical industry, all finishing procedures of textile materials have been growing constantly and, sustainable and ecological production techniques have become extremely crucial. This is a single book which has information related to extraction of dyestuff from 19 common flowers, weeds, bark or leaves and its application on cotton silk and wool fabrics for textile industry. The Handbook describes the step wise methodology of extraction, mordanting, dyeing with photos of the actual plants part used for extraction of Natural dye. Shade cards have been incorporated so that the full gamut of colors can be visualized from each dyestuff. Major contents of the book are nature of material to be dyed, history of natural dyes, promotion of natural dyes, sources of natural dyes, mordanting the textiles for natural dyeing, quality standards for vegetable dyes, methods of dye extraction, dyeing methodology, chemistry of dye, some recent publications on natural dyes. This handbook is designed for use by everyone engaged in the natural dye manufacturing and explains different methods of dye extraction. Also contains addresses of machinery suppliers with their photographs. It will be a standard reference book for professionals, entrepreneurs, those studying and researching in this important area. About Author The Author Dr. Padma S Vankar, works as Principal Research Scientist, in Facility for Ecological and Analytical Testing (FEAT) at Indian Institute of Technology, Kanpur. She has been engaged in the screening and characterization of newer natural dyes for the past 10 years. She also works in the area of designing synthetic strategies for Eco-friendly dyes using microwave heating system. Using innovative technology for natural dyeing has been her main emphasis. The author has conducted several workshops throughout India in order to popularize natural dyeing.

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## **[Handbook on Textile Auxiliaries, Dyes and Dye Intermediates Technology](#)**

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

**Format:** Paperback

**Book Code:** NI221

**Pages:** 736

**ISBN:** 9788178331225

**Price:** Rs. 1,575.00 US\$ 150.00

Textile auxiliaries are defined as chemicals of formulated chemical products which enables a processing operation in preparation, dyeing, printing of finishing to be carried out more effectively or which is essential if a given effect is to be obtained. Certain Textile Auxiliaries are also required in order to produce special finishing effects such as wash & wear, water repellence, flame retardancy, aroma finish, anti odour, colour deepening etc. The prime consideration in the choice of Textile materials is the purpose for which they are intended, but colour has been termed the best salesman in the present scenario. The modern tendency is towards an insistence on colour which is fast to light, washing, rubbing, and bleaching; this movement makes a great demand on the science of dyeing. Auxiliaries, dyes and dye intermediates play a vital role in textile processing industries. The manufacture and use of dyes is an important part of modern technology. Because of the variety of materials that must be dyed in a complete spectrum of hues, manufacturer now offer many hundreds of distinctly different dyes. The major uses of dyes are in coloration of textile fibers and paper. The substrates can be grouped into two major classes-hydrophobic and hydrophilic. Hydrophilic substances such as cotton, wool, silk, and paper are readily swollen by water making access of the dye to substrate relatively easy. On other hand hydrophobic fibers, synthetic polyesters, acrylics, polyamides and polyolefin fibers are not readily swollen by water hence, higher application temperatures and smaller molecules are generally required. Dye, are classified according to the application method. Some of the examples of dyes are acid dyes, basic or cationic dyes, direct dyes, sulfur dyes, vat dyes, reactive dyes, mordant dyes etc. Colorants and auxiliaries will remain the biggest product segment, while faster gains will be seen in finishing chemicals. World demand for dyes and organic pigments is forecast to increase 3.9 percent per year through 2013, in line with real gains in manufacturing activity. Volume demand will grow 3.5 percent annually. While the textile industry will remain the largest consumer of dyes and organic pigments, faster growth is expected in other markets such as printing inks, paint and coatings, and plastics. Market value will benefit from consumer preferences for environmentally friendly products, which will support consumption of high performance dyes and organic pigments. Some of the fundamentals of the book are antimony and other inorganic compounds,

halogenated flame retardants, phosphorous compounds, dyes and dye intermediates, textile fibers, pigment dyeing and printing, dry cleaning agents, dry cleaning detergents, acrylic ester resins, alginic acid, polyvinyl chloride, sodium carboxy methyl cellulose, guar gum, industries using guar gum, gum tragacanth, hydroxyethyl cellulose, polyethylene glycol, industries using polyethylene glycols, etc. The book covers details of antimony and other inorganic compounds, halogenated flame retardants, silicone oils, solvents, dyes and dye intermediates, dry cleaning agents, different types of gums used in textile industries, starch, flame retardants for textile and many more. This is very resourceful book for new entrepreneurs, technologists, research scholars and technical institutions related to textile.

## [A Concise Guide on Textile Dyes, Pigments and Dye Intermediates with Textile Printing Technology](#)

**Author:** Dr. H. Panda

**Format:** Paperback

**Book Code:** NI249

**Pages:** 512

**ISBN:** 9789381039205

**Price:** Rs. 1,675.00 US\$ 150.00

In the past, only organic matter was available for making dyes. Today, there are numerous options and methods for the colorization of textiles. While today's methods capitalize on efficiency, there is question as to whether the use of chemicals is harmful to the environment. A reputation for harming the earth could be detrimental to a company in a society becoming more and more focused on the environment and its preservation. Today, with the invention of synthetic materials used in textiles, many new types of dyes have been developed and put into regular use. There are two basic ways to color textiles: dyes and pigments. Pigments are not a dye but rather resins mechanically bound to fibers. Dyes are divided into classes according to the types of fibers they are most compatible with. Textile printing is related to dyeing but, whereas in dyeing proper the whole fabric is uniformly covered with one color, in printing one or more colors are applied to it in certain parts only, and in sharply defined patterns. Dyes will yield the softest hand (the "hand" is the feel of the fabric) and maintain the fabric's luster but the process is expensive. Pigments are much more economical to use. Pigments are generally more lightfast, more colorfast, and give greater color control. Pigment technology has developed tremendously in the past 15 years. 85% of the textile printing in the World is pigment printing. This book contains manufacturing process and other related details about Azine dyes, Azoic dyes, Azo dyes, Thiazole dyes, Triphenylmethane dyes, scientific classification of Vat dyes, fluorination of dyes, different types of pigments, applications, usages of dyes and pigments, quality control and evaluation of pigments and many more. This book will serve as a guide to Textile Technologists, Scientists and existing as well as upcoming industries.

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## [Epoxy Resins Technology Handbook \(Manufacturing Process, Synthesis, Epoxy Resin Adhesives and Epoxy Coatings\)](#)

**Author:** Dr. H. Panda

**Format:** Paperback

**Book Code:** NI305

**Pages:** 560

**ISBN:** 9788178331744

**Price:** Rs. 1,695.00 US\$ 150.00

Epoxy is a term used to denote both the basic components and the cured end products of epoxy resins, as well as a colloquial name for the epoxide functional group. Epoxy resin are a class of thermoset materials used extensively in structural and specialty composite applications because they offer a unique combination of properties that are unattainable with other thermoset resins. Epoxies are monomers or prepolymers that further reacts with curing agents to yield high performance thermosetting plastics. They have gained wide acceptance in protecting coatings, electrical and structural applications because of their exceptional combination of properties such as toughness, adhesion, chemical resistance and superior electrical properties. Epoxy resins are characterized by the presence of a three membered cycle ether group commonly referred to as an epoxy group 1,2-epoxide, or oxirane. The most widely used epoxy resins are diglycidyl ethers of bisphenol-A derived from bisphenol-A and epichlorohydrin. The market of epoxy resins are growing day by day. Today the total business of this product is more than 100 crores. Epoxy resins are used for about 75% of wind blades currently produced worldwide, while polyester resins account for the remaining 25%. A standard 1.5-MW (megawatt) wind turbine has approximately 10 tonnes of epoxy in its blades. Traditionally, the markets for epoxy resins have been driven by demand generated primarily in areas of adhesives, building and civil construction, electrical insulation, printed circuit boards, and protective coatings for consumer durables, amongst others. The major contents of the book are synthesis and characteristics of epoxy resin, manufacture of epoxy resins, epoxide curing reactions, the dynamic mechanical properties of epoxy resins, physical and chemical properties of epoxy resins, epoxy resin adhesives, epoxy resin coatings, epoxy coating give into water, electrical and electronic applications, analysis of epoxides and epoxy resins and the toxicology of epoxy resins. It will be a standard reference book for professionals and entrepreneurs. Those who are interested in this field can find the complete information from manufacture to final uses of epoxy resin. This presentation will be very helpful to new entrepreneurs, technocrats, research scholars, libraries and existing units.

# About NIIR

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