

# **Solution Polymerization Process**

## **Dynamics, Control, and Optimization of Free-radical Solution and Emulsion Polymerization Processes**

Large numbers of chemical engineers work with polymerization reactions and the problems and the challenges particular to the production of polymers. These problems have no counterparts in small-molecule reactions, and thus usually are neglected in standard reactor courses. This book provides a clearly written, comprehensive textbook on polymerization reactor engineering, appropriate for senior-level undergraduate and 1st- and 2nd-year graduate students. It focuses on polymer structure and structure-property relationships conditions that can play a role in dictating structure.

## **Polymerization Process Modeling**

This reference and text provides an in-depth description of developments in control techniques and their application to polymerization reactors and offers important introductory background information on polymerization reaction engineering.;Discussing modelling, identification, linear, nonlinear and multivariable schemes, Control of Polymerization Reactors: presents all available techniques that can be used to control reactors properly for optimal performance; shows how to manipulate pivotal variables that affect reactor control; examines methods for deriving dynamic process models to improve reactor efficiency; reviews reactor control problems and points out end-use properties; supplies methods for measuring process variables, and ways to estimate variables that can't be measured; and explains how single-input, single-output (SISO) strategies can be effectively used for control.;Filled with illustrative examples to clarify concepts, including more than 730 figures, tables and equations, Control of Polymerization Reactors is intended for use as a reference for chemical, process development, process design, research and development, control systems, and polymer engineers; and polymer chemists and physicists; as well as a text for upper-level undergraduate and graduate students in polymerization reactor control courses.

## **Control of Polymerization Reactors**

Radical polymerization is one of the most widely used means of producing vinyl polymers, supporting a myriad of commercial uses. Maintaining the quality of the

critically acclaimed first edition, the Handbook of Vinyl Polymers: Radical Polymerization, Process, and Technology, Second Edition provides a fully updated, single-volume source on the chemistry, technology, and applications of vinyl polymers. Emphasizes radical initiating systems and mechanisms of action... Written by renowned researchers in the field, this handbook is primarily concerned with the physical and organic chemistry of radical vinyl polymerization. The authors survey the most recent advances, processing methods, technologies, and applications of free radical vinyl polymerization. The book features thorough coverage of polymer functionalization, photo initiation, block and graft copolymers, and polymer composites. Analyzes living/controlled radical polymerization, one of the latest developments in the field... Combining fundamental aspects with the latest advances, processing methods, and applications in free radical vinyl polymerization and polymer technology, this invaluable reference provides a unified, in-depth, and innovative perspective of radical vinyl polymerization.

## **Handbook of Vinyl Polymers**

PLASTIC AND RESIN PROCESSES; AIR EMISSIONS; WASTEWATERS; SOLID WASTE.

## **Polymer Manufacturing**

Understand quantitative model step-growth polymerization plans and how to predict properties of the product polymer with the essential information in Step-Growth Polymerization Process Modeling and Product Design. If you want to learn how to simulate step-growth polymerization processes using commercial software and seek an in-depth, quantitative understanding of how to develop, use, and deploy these simulations, consult this must-have guide. The book focuses on quantitative relationships between key process input variables (KPIVs) and key process output variables (KPOVs), and the integrated modeling of an entire polymer manufacturing train.

## **Step-Growth Polymerization Process Modeling and Product Design**

Polymers are an example of “products-by-process”, where the final product properties are mostly determined during manufacture, in the reactor. An understanding of processes occurring in the polymerization reactor is therefore crucial to achieving efficient, consistent, safe and environmentally friendly production of polymeric materials. Polymer Reaction Engineering provides the link between the fundamentals of polymerization kinetics and polymer microstructure achieved in the reactor. Organized according to the type of polymerization, each chapter starts with a

description of the main polymers produced by the particular method, their key microstructural features and their applications. Polymerization kinetics and its effect on reactor configuration, mass and energy balances and scale-up are covered in detail. The text is illustrated with examples emphasizing general concepts, principles and methodology. Written as an authoritative guide for chemists and chemical engineers in industry and academe, Polymer Reaction Engineering will also be a key reference source for advanced courses in polymer chemistry and technology.

## **Polymer Reaction Engineering**

Comprising one volume of Functional and Modified Polymeric Materials, Two-Volume Set, this well-organized collection of papers by Professor Eli Ruckenstein and co-workers focuses on functional and modified polymeric materials prepared mainly through solution polymerization and surface polymerization. Although solution polymerization has been broadly utilized for the preparation of polymeric materials, the book shows significant approaches to special classes of polymeric materials including functional polymers by living ionic polymerization, degradable and decrosslinkable polymers, semi- and interpenetrating polymer network pervaporation membranes, and soluble conducting polymers. It also focuses on preparing and modifying conductive surface of polymer or polymer-based materials.

## **Solution and Surface Polymerization**

With such a wide diversity of properties and applications, is it any wonder that industry and academia have such a fascination with polymers? A solid introduction to such an enormous and important field is critical to the modern polymer scientist-to-be, but most of the available books do not stress practical problem solving or include recent advances. Serving as the polymer book for the new millennium, Introduction to Polymer Science and Chemistry: A Problem Solving Approach unites the fundamentals of polymer science and polymer chemistry in a seamless presentation. Emphasizing polymerization kinetics, the author uses a unique question-and-answer approach when developing theory or introducing new concepts. The first four chapters introduce polymer science, focusing on physical and molecular properties, solution behavior, and molecular weights. The remainder of the book explores polymer chemistry, devoting individual, self-contained chapters to the main types of polymerization reactions: condensation; free radical; ionic; coordination; and ring-opening. It introduces recent advances such as supramolecular polymerization, hyperbranching, photoemulsion polymerization, the grafting-from polymerization process, polymer brushes, living/controlled radical polymerization, and immobilized metallocene catalysts. With numerical problems accompanying the discussion at every step along with numerous end-of-chapter exercises, Introduction to Chemical Polymer Science: A Problem Solving

Approach is an ideal introductory text and self-study vehicle for mastering the principles and methodologies of modern polymer science and chemistry.

## **Introduction to Polymer Science and Chemistry**

Historical Overview of (Mini)emulsion Polymerizations and Preparation of Hybrid Latex Particles, by A.M. van Herk; \* Physical Methods for the Preparation of Hybrid Nanocomposite Polymer Latex Particles, by R. F.A. Teixeira and S. A.F. Bon; \* Organic/Inorganic Composite Latexes: The Marriage of Emulsion Polymerization and Inorganic Chemistry, by Elodie Bourgeat-Lami and Muriel Lansalot; \* Preparation of Hybrid Latex Particles and Core-Shell Particles Through the Use of Controlled Radical Polymerization Techniques in Aqueous Media, by Bernadette Charleux, Franck D'Agosto, and Guillaume Delaître; \* Miniemulsion Polymerization as a Means to Encapsulate Organic and Inorganic Materials, by Clemens K. Weiss and Katharina Landfester; \* Organic-Inorganic Hybrid Magnetic Latex, by Md Mahbubor Rahman and Abdelhamid Elaissari

## **Hybrid Latex Particles**

Summarizes the current state of the art concerning the effect of organization of monomers on the polymerization process. Some of the techniques covered that bring about such ordering include thermotropic and lyotropic liquid crystalline media, gas-water and gas-solid interfaces, micelles and microemulsions. Potential applications range from novel composite media to biopolymer synthesis. Annotation copyright by Book News, Inc., Portland, OR

## **Polymerization in Organized Media**

Offers new strategies to optimize polymer reactions With contributions from leading macromolecular scientists and engineers, this book provides a practical guide to polymerization monitoring. It enables laboratory researchers to optimize polymer reactions by providing them with a better understanding of the underlying reaction kinetics and mechanisms. Moreover, it opens the door to improved industrial-scale reactions, including enhanced product quality and reduced harmful emissions. Monitoring Polymerization Reactions begins with a review of the basic elements of polymer reactions and their kinetics, including an overview of stimuli-responsive polymers. Next, it explains why certain polymer and reaction characteristics need to be monitored. The book then explores a variety of practical topics, including: Principles and applications of important polymer characterization tools, such as light scattering, gel permeation chromatography, calorimetry, rheology, and spectroscopy Automatic continuous online monitoring of polymerization (ACOMP) reactions, a flexible platform

that enables characterization tools to be employed simultaneously during reactions in order to obtain a complete record of multiple reaction features Modeling of polymerization reactions and numerical approaches Applications that optimize the manufacture of industrially important polymers Throughout the book, the authors provide step-by-step strategies for implementation. In addition, ample use of case studies helps readers understand the benefits of various monitoring strategies and approaches, enabling them to choose the best one to match their needs. As new stimuli-responsive and \"intelligent\" polymers continue to be developed, the ability to monitor reactions will become increasingly important. With this book as their guide, polymer scientists and engineers can take full advantage of the latest monitoring strategies to optimize reactions in both the lab and the manufacturing plant.

## **Monitoring Polymerization Reactions**

This book is a compilation from technical journals in both chemistry and chemical engineering. It covers rate expressions for polymerization reactions pertaining to the analysis, optimal design, and optimal operation of polymerization reactors.

## **Rate Equations of Polymerization Reactions**

Polymers are ubiquitous and pervasive in industry, science, and technology. These giant molecules have great significance not only in terms of products such as plastics, films, elastomers, fibers, adhesives, and coatings but also less obviously though none the less importantly in many leading industries (aerospace, electronics, automotive, biomedical, etc.). Well over half the chemists and chemical engineers who graduate in the United States will at some time work in the polymer industries. If the professionals working with polymers in the other industries are taken into account, the overall number swells to a much greater total. It is obvious that knowledge and understanding of polymers is essential for any engineer or scientist whose professional activities involve them with these macromolecules. Not too long ago, formal education relating to polymers was very limited, indeed, almost nonexistent. Speaking from a personal viewpoint, I can recall my first job after completing my Ph.D. The job with E.I. Du Pont de Nemours dealt with polymers, an area in which I had no university training. There were no courses in polymers offered at my alma mater. My experience, incidentally, was the rule and not the exception.

## **Encyclopedia of Polymer Science and Engineering: Liquid Crystalline polymers**

It is particularly appropriate that this symposium on the emulsion polymerization of vinyl acetate was held in recognition of the industrial importance of poly(vinyl acetate)

and vinyl acetate copolymers, and their rather unique properties among emulsion polymers in general. Poly(vinyl acetate) latexes were the first synthetic polymer latexes to be made on a commercial scale: their production using polyvinyl alcohol as emulsifier began in Germany during the mid-1930s and has continued to the present day, growing steadily with the years. Indeed, poly(vinyl acetate) latexes prepared with polyvinyl alcohol are still one of the mainstays of the adhesives industry. With the passing of time, however, vinyl acetate copolymers have been developed: copolymers with maleate esters such as dibutyl maleate, acrylate esters such as ethyl acrylate and butyl acrylate, versatic acid esters, and, more recently, ethylene. These versatile copolymers have found increasing use in more sophisticated adhesives with specialized properties, adhesives for clay coatings on paper, carpet backing, and interior and exterior paints. Thus more than 45 years after the first commercial production of vinyl acetate latexes, their use is still growing, both in actual quantities and different applications. The industrial importance of vinyl acetate latexes makes the mechanism and kinetics of their emulsion polymerization of practical as well as scientific interest.

## **Polymer Process Engineering**

Stereospecific Polymerization of Isoprene, a doctoral dissertation by Dr. Elena Ceaulescu, is a study of the synthesis of cis-1, 4-polyisoprene rubber, an elastomer of synthetic rubber whose structure and properties are similar to that of natural rubber. This elastomer is primarily used in the manufacture of tires, belts, hoses, matting, flooring, dampeners, and other synthetic rubber goods. The book is organized into two parts. Part I, the Ph.D. thesis, focuses on the explanation and exposition of the polymerization reaction; properties of the polymer; and certain theoretical aspects related to the polymer's reaction mechanism and kinetics. Part II presents data derived from an extensive variety of experiments and tests intended to serve as a basis for the industrial production of cis-1, 4-polyisoprene rubber. The text will be an interesting book for materials engineers, industrial engineers, chemists, and science students engaged in the study of polymers.

## **Emulsion Polymerization of Vinyl Acetate**

Fast Polymerization Processes presents fundamental results of investigation in the field of fast polymerization processes. A practical approach to the studying and modeling of polymerization processes is highlighted, taking into consideration the influence of such issues as the reactants' concentration, flow velocities, densities, heat conductivities, and hydrodynamics parameters. Particular attention is devoted to an in-depth description of previously unknown rules which are characteristic of fast polymerization processes.

## **Stereospecific Polymerization of Isoprene**

Amidst developments in nanotechnology and successes in catalytic emulsion polymerization of olefins, polymerization in dispersed media is arousing an increasing interest from both practical and fundamental points of view. This text describes ultramodern approaches to synthesis, preparation, characterization, and functionalization of latexes, nanopa

## **Fast Polymerization Processes**

Maintaining a balance between depth and breadth, the Sixth Edition of Principles of Polymer Systems continues to present an integrated approach to polymer science and engineering. A classic text in the field, the new edition offers a comprehensive exploration of polymers at a level geared toward upper-level undergraduates and beginning graduate students. Revisions to the sixth edition include: A more detailed discussion of crystallization kinetics, strain-induced crystallization, block copolymers, liquid crystal polymers, and gels New, powerful radical polymerization methods Additional polymerization process flow sheets and discussion of the polymerization of polystyrene and poly(vinyl chloride) New discussions on the elongational viscosity of polymers and coarse-grained bead-spring molecular and tube models Updated information on models and experimental results of rubber elasticity Expanded sections on fracture of glassy and semicrystalline polymers New sections on fracture of elastomers, diffusion in polymers, and membrane formation New coverage of polymers from renewable resources New section on X-ray methods and dielectric relaxation All chapters have been updated and out-of-date material removed. The text contains more theoretical background for some of the fundamental concepts pertaining to polymer structure and behavior, while also providing an up-to-date discussion of the latest developments in polymerization systems. Example problems in the text help students through step-by-step solutions and nearly 300 end-of-chapter problems, many new to this edition, reinforce the concepts presented.

## **Colloidal Polymers**

This reference and text provides an in-depth description of developments in control techniques and their application to polymerization reactors and offers important introductory background information on polymerization reaction engineering.;Discussing modelling, identification, linear, nonlinear and multivariable schemes, Control of Polymerization Reactors: presents all available techniques that can be used to control reactors properly for optimal performance; shows how to manipulate pivotal variables that affect reactor control; examines methods for deriving dynamic process models to improve reactor efficiency; reviews reactor control

problems and points out end-use properties; supplies methods for measuring process variables, and ways to estimate variables that can't be measured; and explains how single-input, single-output (SISO) strategies can be effectively used for control.; Filled with illustrative examples to clarify concepts, including more than 730 figures, tables and equations, Control of Polymerization Reactors is intended for use as a reference for chemical, process development, process design, research and development, control systems, and polymer engineers; and polymer chemists and physicists; as well as a text for upper-level undergraduate and graduate students in polymerization reactor control courses.

## **Principles of Polymer Systems, Sixth Edition**

\* Provides a concise source of information on synthetic techniques, purification, and characterization methods for free-radical polymers. \* Presents information on future trends in the synthesis of free-radical polymers.

## **Control of Polymerization Reactors**

This volume represents the proceedings of the 3rd Berlin International Workshop on Polymer Reaction Engineering, held at the Technical University of Berlin, September, 1989. The meeting provided a forum for the presentation and discussion of major new advances in the broad and rapidly developing field of polymerization engineering and brought together scientists from all parts of the world. The Proceedings volume comprises thirty-six papers which were presented in the form of general lectures, short lectures, or posters by numerous experts from university and industry. According to the increasing importance of scientific computing, many papers are concerned with computer simulations and computer-aided design, monitoring, and control of polymerization processes.

## **Handbook of Radical Polymerization**

"The polymer industry has become one of the fastest growing areas in the materials industry for several decades, and would be continue to do so in the foreseeable future. However, due to growing environmental and health concern, the polymer manufacturers have faced increasing pressure to apply environmentally benign technologies in order to accommodate tightened environmental regulations. In the process of searching for clean and low emission polymerization techniques, supercritical fluid technology and sonochemistry have attracted more and more interest because of their unique advantages over conventional techniques. The present study is to expand our knowledge of polymer synthesis processes involving supercritical fluid, sonochemistry and microemulsion technologies. This study included



three affiliated projects as supercritical dispersion polymerization, ultrasonically initiated polymerization in near-critical environment and ultrasound assisted microemulsion polymerization in aqueous solution. The success of projects will significantly broaden the application potential for these advanced chemical processes in both conventional and unconventional systems. In the study of dispersion polymerization in  $\text{scCO}_2$ , a new PDMS macromonomer has been successfully applied as surfactant to stabilize the polymerization process. The polymerization results indicated that the conversion is increasing with the increasing of stabilizer concentration, and the particle morphology become more uniform at the same time. In the study of ultrasound irradiation in high-pressure medium, it has been confirmed that sonication alone could initiate the polymerization process. The monomer:  $\text{CO}_2$  ratio and ultrasound irradiation time appeared to have impact on the molecular weight and its distribution of the polymeric products. Discrete morphology from SEM image suggested that the polymer particles could be stabilized without surfactant during the polymerization process. In the study of ultrasound assisted microemulsion polymerization, ultrasound irradiation has been proved crucial to achieve a stable microemulsion polymerization. The kinetics study suggested that sonication could facilitate the polymerization dramatically. The ultrasound irradiation has also been proved to be an effective approach to control the particle size and its distribution of resultant polymer solution.\"--Abstract.

## **Polymer Reaction Engineering**

With such a wide diversity of properties and applications, is it any wonder that industry and academia have such a fascination with polymers? A solid introduction to such an enormous and important field is critical to the modern polymer scientist-to-be, but most of the available books do not stress practical problem solving or include recent advances. Serving as the polymer book for the new millennium, Introduction to Polymer Science and Chemistry: A Problem Solving Approach unites the fundamentals of polymer science and polymer chemistry in a seamless presentation. Emphasizing polymerization kinetics, the author uses a unique question-and-answer approach when developing theory or introducing new concepts. The first four chapters introduce polymer science, focusing on physical and molecular properties, solution behavior, and molecular weights. The remainder of the book explores polymer chemistry, devoting individual, self-contained chapters to the main types of polymerization reactions: condensation; free radical; ionic; coordination; and ring-opening. It introduces recent advances such as supramolecular polymerization, hyperbranching, photoemulsion polymerization, the grafting-from polymerization process, polymer brushes, living/controlled radical polymerization, and immobilized metallocene catalysts. With numerical problems accompanying the discussion at every step along with numerous

end-of-chapter exercises, Introduction to Chemical Polymer Science: A Problem Solving Approach is an ideal introductory text and self-study vehicle for mastering the principles and methodologies of modern polymer science and chemistry.

## **Applications of Unconventional Processes in Polymer Synthesis- supercritical Fluids and Sonochemistry**

In this special volume on polymer particles, recent trends and developments in the synthesis of nano- to micron-sized polymer particles by radical polymerization (Emulsion, Miniemulsion, Microemulsion, and Dispersion Polymerizations) of vinyl monomers in environmentally friendly heterogeneous aqueous and supercritical carbon dioxide fluid media are reviewed by prominent worldwide researchers. In addition to the important challenges and possibilities with regards to design and preparation of functionalized polymer particles of controlled size, the topics described are of great current interest due to the increased awareness of environmental issues.

## **Introduction to Polymer Science and Chemistry**

At publication, The Control Handbook immediately became the definitive resource that engineers working with modern control systems required. Among its many accolades, that first edition was cited by the AAP as the Best Engineering Handbook of 1996. Now, 15 years later, William Levine has once again compiled the most comprehensive and authoritative resource on control engineering. He has fully reorganized the text to reflect the technical advances achieved since the last edition and has expanded its contents to include the multidisciplinary perspective that is making control engineering a critical component in so many fields. Now expanded from one to three volumes, The Control Handbook, Second Edition brilliantly organizes cutting-edge contributions from more than 200 leading experts representing every corner of the globe. They cover everything from basic closed-loop systems to multi-agent adaptive systems and from the control of electric motors to the control of complex networks. Progressively organized, the three volume set includes: Control System Fundamentals Control System Applications Control System Advanced Methods Any practicing engineer, student, or researcher working in fields as diverse as electronics, aeronautics, or biomedicine will find this handbook to be a time-saving resource filled with invaluable formulas, models, methods, and innovative thinking. In fact, any physicist, biologist, mathematician, or researcher in any number of fields developing or improving products and systems will find the answers and ideas they need. As with the first edition, the new edition not only stands as a record of accomplishment in control engineering but provides researchers with the means to make further advances.

## **Polymer Particles**

Providing insight on the free-radical retrograde-precipitation polymerization process, this volume examines the phenomenological aspects in comparison to other materials, such as nanoscale confinement behavior and nucleated hot spots.

## **The Control Handbook (three volume set)**

The most current guide to solid state polymerization Solid State Polymerization (SSP) is an indispensable tool in the design, manufacture, and study of polymers, plastics, and fibers. SSP presents significant advantages over other polymerization techniques due to low operating temperatures, inexpensive equipment, and simple and environmentally sound procedures. Combining fundamentals of polymer science, chemistry, physical chemistry, and engineering, SSP also offers many research applications for a wide range of students and investigators. Gathering and filtering the latest literature on SSP, Solid Solid State Polymerization offers a unique, one-stop resource on this important process. With chapters contributed by leaders in the field, this text summarizes SSP, and provides essential coverage that includes: An introduction to SSP, with chemical and physical steps, apparatus, advantages, and parameters SSP physical chemistry and mechanisms Kinetic aspects of polyesters and polyamides SSP Catalysis in SSP processes Application of SSP under high pressure conditions in the laboratory Engineering aspects regarding process modeling and industrial application Recent developments and future possibilities Solid State Polymerization provides the most up-to-date coverage of this constantly developing field to academic and industry professionals, as well as graduate and postgraduate-level students in chemical engineering, materials science and engineering, polymer chemistry, polymer processing and polymer engineering.

## **Commodity Thermoplastics**

The book systematically presents fundamental principles, properties, implementation methodologies, technologies and applications of polymer synthesis. Ring opening metathesis polymerization, click chemistry, macromolecular self-assembly, carbon nanomaterials and their modification with polymers are discussed in detail. With abundant illustrations, it is an essential reference for polymer chemists, material scientists, and graduate students.

## **Vinyl Monomers and Polymers**

Up-to-date coverage of methods of emulsion polymerization This book provides a comprehensive reference on emulsion polymerization methods, focusing on the fundamental mechanisms and kinetics of each process, as well as how they can be

applied to the manufacture of environmentally friendly polymeric materials. Topics covered include: Conventional emulsion polymerization Miniemulsion polymerization Microemulsion polymerization Industrial emulsion polymerization processes (primarily the semibatch and continuous reactions systems) The role of various colloidal phenomena in emulsion polymerization Important end-use properties of emulsion polymer (latex) products Information on industrial applications in paints, coatings, adhesives, paper and board, and more This is a hands-on reference for graduate students and professionals in polymerchemistry, chemical engineering, and materials science who are involved in researchon coatings, adhesives, rubber, latex, paints, finishes, and other materials that can becreated using various methods of emulsion polymerization.

## **Free-Radical Retrograde-Precipitation Polymerization (FRRPP)**

A comprehensive and up to date survey of the science and technology of polymeric dispersions. The book discusses the kinetics and mechanisms of polymerization in dispersed media, examines the processes controlling particle morphology, presents both off-line and on-line methods for the characterization of polymer colloids, considers reactor engineering and control, and covers a wide variety of applications, such as latex paint formulations, encapsulation of inorganic particles, reactive latexes, adhesives, paper coating, and biomedical and pharmaceutical applications. Audience: A valuable resource for scientists and engineers, academic and industrial, who are involved in the manufacture or application of polymeric dispersions.

## **Dispersed Systems**

This is the first complete book of polymer terminology ever published. It contains more than 7,500 polymeric material terms. Supplementary electronic material brings important relationships to life, and audio supplements include pronunciation of each term.

## **Polymerization Processes**

This work examines the science and technology used in the manufacture of acrylic fibre for both mass-produced commodity products and premium products. It elucidates the chemistry and fibre production techniques of speciality acrylics such as flame-retardant, water-reversible bicomponent, producer dyed and others. Capacity figures for developing countries are published here.;This work is intended for: polymer, fibre and textile scientists, chemists and engineers; physical and dye chemists; textile company managers; and upper-level undergraduate and graduate students in these disciplines.

## Processes for Major Addition-type Plastics and Their Monomers

### Solid State Polymerization

<https://www.unidesktesting.motion.ac.in/dinjurut/X36755L/simagina/X63105L195/rs+agrawa>

<https://www.unidesktesting.motion.ac.in/wspucifyb/476BO64/qpiopg/759BO36931/carrier+int>

<https://www.unidesktesting.motion.ac.in/cconstryctr/42E958K/bpiopu/99E77556K3/cagiva+t4>

<https://www.unidesktesting.motion.ac.in/cgute/W90661K/ifeallg/W9066308K1/canon+xl1+us>

<https://www.unidesktesting.motion.ac.in/gpramptb/570ZK85/jsintinciw/179ZK00002/sumit+g>

<https://www.unidesktesting.motion.ac.in/astaruy/8L3701T/lilictv/1L168749T2/iec+61355+1.p>

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<https://www.unidesktesting.motion.ac.in/achargud/2NA9256/zshivirf/6NA1967050/advertising>