

Product Manufacturing And Cost Estimating Using Cadcae The Computer Aided Engineering Design Series By Chang Kuang Hua 2013 08 02 Hardcover

This revision of the author's bestselling earlier work on cost estimating has been updated to provide currently applicable examples, data and techniques. Two new chapters have been added covering: computer tools and models for cost estimating, where to get these tools, and the features to look for; software cost estimating with special emphasis on the effect of CASE tools on software productivities and resulting software costs. A complete set of inflation tables is now included to permit conversion from any year dollars to any other year dollars from 1959 through 1997. Retains its comprehensive coverage of the elements needed to embark on a cost estimating task. Strengthened are the invaluable parts of the book which tell the estimator how to produce a competitive and credible cost estimate. Manufacturing standards for hardware and electronics are retained as are handy tables for determining the costs of engineering, design, documentation, drafting and testing.

“Collaborative Product and Service Life Cycle Management for a Sustainable World” gathers together papers from the 15th ISPE International Conference on Concurrent Engineering (CE2008), to stimulate the new thinking that is so crucial to our sustained productivity enhancement and quality of life. It is already evident in this new century that the desire for sustainable development is increasingly driving the market to reach for new and innovative solutions that more effectively utilize the resources we have inherited from previous generations; with the obvious responsibility to future generations. Human productivity and progress can be positively engineered and managed in harmony with the provision and needs of our natural environment. One century on from the industrial revolution, this is now the time of the sustainable revolution; requiring holistic technological, process and people integrated solutions to sustained socio-economic enhancement. Construction Cost Estimating equips a new generation of students and early-career professionals with the skills they need to bid successfully on projects. From developing bid strategies to submitting a completed bid, this innovative textbook introduces the fundamentals of construction estimating through a real-life case study that unfolds across its 24 chapters. Exercises at the end of each chapter offer hands-on practice with core concepts such as quantity take-offs, pricing, and estimating for subcontractor work. Online resources provide instant access to examples of authentic construction documents, including complete, detailed direct work estimates, subcontractor work estimates, general conditions estimates, markups, and summary schedules. Through its unique mix of real-world examples and classroom-tested insights, Construction Cost Estimating ensures that readers are familiar with the entire estimating process even

before setting foot on the jobsite.

In its first centennial, aerospace has matured from a pioneering activity to an indispensable enabler of our daily life activities. In the next twenty to thirty years, aerospace will face a tremendous challenge - the development of flying objects that do not depend on fossil fuels. The twenty-three chapters in this book capture some of the new technologies and methods that are currently being developed to enable sustainable air transport and space flight. It clearly illustrates the multi-disciplinary character of aerospace engineering, and the fact that the challenges of air transportation and space missions continue to call for the most innovative solutions and daring concepts.

In today's hyper-competitive, global marketplace, a manufacturing company needs a competitive edge if it is to survive and grow. That edge could be anything from superior manufacturing technology to innovative product design; from patent protection to solid, well-established customer relationships. One competitive edge available to all manufacturers, but realized by only a few, is the ability to accurately measure, control, and optimize costs throughout a product's entire life cycle. The lack of a methodology to engineer cost optimization into every product makes attaining and maintaining profitability all that the more difficult. Cost Engineering provides a means for a manufacturer to achieve and sustain profitability by designing and manufacturing products to specific cost requirements. It incorporates a variety of proven methodologies including cost estimating, cost control, and cost optimization. Features: ? Describes the components and organization of an effective cost optimization process ? Provides detailed explanations of cost estimating techniques for many of the most common manufacturing processes ? Explains the selection and use of appropriate cost allocation methods ? Presents the fundamentals of cost-based negotiation ? Includes both proper and improper executions of cost engineering principles The details presented in this book are important to design engineers, manufacturing engineers, buyers, accountants, cost estimators, cost optimization specialists, and their managers and provides CEOs, COOs, general managers, product line managers, and plant managers with guidance on improving and sustaining profitability. . Hailed as a groundbreaking and important textbook upon its initial publication, the latest iteration of Product Design for Manufacture and Assembly does not rest on those laurels. In addition to the expected updating of data in all chapters, this third edition has been revised to provide a top-notch textbook for university-level courses in product

Modern Manufacturing Technology & Cost Estimation offers a systematic coverage of essential advanced manufacturing processes. Throughout the book authors stress practical approach to near-net-shape and non-traditional (EDM, ECM) processes. Technological developments have recently advanced along with materials, tooling and machines. This book serves as the concise resource related to: Electrophysical and electrochemical methods and principles Near-net-shape processes and applications Technological Knowledge systems developments material - process: cost relationships; technology-oriented published, Internet and periodical information This book enables a practitioner: efficiently perform feasibility study develop a basis for cost-oriented decision support acquire new knowledge or to refresh

knowledge related to manufacturing analysis and characteristics. This on-the-job book will support cost justification studies, reduce decision time which is critical for busy professionals. Furthermore, it offers common engineering vision for the cross-functional team of manufacturing engineer, product designer, purchasing specialist, sales and marketing professionals. It is written for a practitioner who does not have time to undertake the long hours needed to research the subject. The cost reduction course presented in this book can become a model for a set of training courses. Additionally, the book contains useful visual models and templates, examples and diagrams. If technologies described in this book can replace several traditional operations, consolidate product features and improve quality, that means, based on Modern Manufacturing Technology & Cost Estimation a practitioner will be able: generate more creative and cost saving ideas, concepts correctly diagnose a manufacturing problem optimize material and process selection improve mold and die manufacturing processes. Despite the numerous competitive advantages of one-of-a-kind production (OKP), the low efficiency and high costs associated with OKP companies threaten to push their business opportunities into the hands of cheaper overseas suppliers. One-of-a-Kind Production introduces a novel strategy and technology to help OKP companies to efficiently mass-produce customized products. In One-of-a-Kind Production, case studies from OKP companies are used to validate the feasibility and effectiveness of the OKP strategy and technology. These case studies include: a structural steel construction company, a manufacturer of specifically ordered compressors and refrigeration systems, a customized high pressure vessel manufacturing company, and a custom window and door manufacturer. To help readers understand OKP strategy and technology, the authors offer a year's free access to the OKP Management and Control Software System. This system is based on a new integrated production control and management concept, namely product production structure. It is a useful tool – and One-of-a-Kind Production is a valuable guide – for production engineers and managerial staff in manufacturing companies, as well as for university researchers and graduate students.

In today's hypercompetitive global marketplace, accurate cost estimating is crucial to bottom-line results. Nowhere is this more evident than in the design and development of new products and services. Among managing engineers responsible for developing realistic cost estimates for new product designs, the number-one source of information and guidance has been the Cost Estimator's Reference Manual. Comprehensive, authoritative, and practical, the Manual instructs readers in the full range of cost estimating techniques and procedures currently used in the fields of development, testing, manufacturing, production, construction, software, general services, government contracting, engineering services, scientific projects, and proposal preparation. The authors clearly explain how to go about gathering the data essential to preparing a realistic estimate of costs and guide the reader step by step through each procedure. This new Second Edition incorporates a decade of progress in the methods, procedures, and strategies of cost estimating. All the material has been updated and five new chapters have been added to reflect the most recent information on such increasingly important topics as activity-based costing, software estimating, design-to-cost techniques, and cost implications of new concurrent engineering and systems engineering approaches to projects. Indispensable to virtually anyone whose work requires accurate cost estimates, the Cost Estimator's Reference Manual will be especially valuable to engineers, estimators, accountants, and contractors of products, projects, processes, and services to both government and industry. The essential ready-reference for the techniques, methods, and procedures of cost estimating COST ESTIMATOR'S REFERENCE MANUAL Second Edition Indispensable for anyone who depends on accurate cost estimates for engineering projects, the Cost Estimator's Reference Manual guides the user through both the basic and more sophisticated aspects of the estimating process. Authoritative and comprehensive, the Manual seamlessly integrates the many functions--accounting, financial, statistical, and management--of modern cost estimating practice. Its

Bookmark File PDF Product Manufacturing And Cost Estimating Using Cadcae The Computer Aided Engineering Design Series By Chang Kuang Hua 2013 08 02 Hardcover

broad coverage includes estimating procedures applied to such areas as: * Production * Software * Development * General services * Testing * Government contracting * Manufacturing * Engineering * Proposal preparation * Scientific projects * Construction This updated and expanded Second Edition incorporates all the most important recent developments in cost estimating, such as activity-based costing, software estimating, design-to-cost techniques, computer-aided estimating tools, concurrent engineering, and life cycle costing. For engineers, estimators, accountants, planners, and others who are involved in the cost aspects of projects, the Cost Estimator's Reference Manual is an invaluable information source that will pay for itself many times over.

"This textbook covers how to apply managerial accounting techniques to problems in areas such as cost estimation, cost control, product pricing, and business segment discontinuation. It also discusses how to assess and evaluate cost and profitability analysis of financial projects. Cost Analysis for Engineers and Scientists introduces managerial accounting techniques that can be applied to problems in the areas of cost estimation, cost control, product line or business segment discontinuation, profitability analysis, and project management. It also presents product costing and manufacturing cost allocation to an individual as well as joint products. The concepts and applications of cost-volume-profit and breakeven analysis for single-product and multiple products are also discussed. This textbook is intended for short-term courses and seminars conducted to train professionals and practitioners in engineering and manufacturing cost analysis. A solutions manual and PowerPoint slides are available for qualified textbook adoptions"--

least, the author wishes to thank his constantly helpful wife Maggie and his secretary Pat Weimer; the former for her patience, encouragement, and for acting as a sounding-board, and the latter who toiled endlessly, cheerfully, and most competently on the book's preparation. CONTENTS Preface / iii 1. INTRODUCTION / 1 Frequently Used Economic Studies / 2 Basic Economic Subjects / 3 Priorities / 3 Problems / 6 Appendixes / 6 References / 6 2. EQUIPMENT COST ESTIMATING / 8 Manufacturers' Quotations / 8 Estimating Charts / 10 Size Factoring Exponents / 11 Inflation Cost Indexes / 13 Installation Factor / 16 Module Factor / 18 Estimating Accuracy / 19 Estimating Example / 19 References / 21 3. PLANT COST ESTIMATES / 22 Accuracy and Costs of Estimates / 22 Cost Overruns / 25 Plant Cost Estimating Factors / 26 Equipment Installation / 28 Instrumentation / 30 v vi CONTENTS Piping / 30 Insulation / 30 Electrical / 30 Buildings / 32 Environmental Control / 32 Painting, Fire Protection, Safety Miscellaneous / 32 Yard Improvements / 32 Utilities / 32 Land / 33 Construction and Engineering Expense, Contractor's Fee, Contingency / 33 Total Multiplier / 34 Complete Plant Estimating Charts / 34 Cost per Ton of Product / 35 Capital Ratio (Turnover Ratio) / 35 Factoring Exponents / 37 Plant Modifications / 38 Other Components of Total Capital Investment / 38 Off-Site Facilities / 38 Distribution Facilities / 39 Research and Development, Engineering, Licensing / 40 Working Capital / 40

Cost estimating is a powerful tool in industry and business. Anyone involved in cost estimating will find this book extremely useful because of the real life examples, which mean they can use the information in real situations immediately.

Presents an accessible approach to the cost estimation tools, concepts, and techniques needed to support analytical and cost decisions Written with an easy-to-understand approach, Cost Estimation: Methods and Tools provides comprehensive coverage of the quantitative techniques needed by professional cost estimators and for those wanting to learn about this vibrant career field. Featuring the underlying mathematical and analytical principles of cost estimation, the book focuses on the tools and methods used to predict the research and development, production, and operating and support costs for successful cost estimation in

industrial, business, and manufacturing processes. The book begins with a detailed historical perspective and key terms of the cost estimating field in order to develop the necessary background prior to implementing the presented quantitative methods. The book proceeds to fundamental cost estimation methods utilized in the field of cost estimation, including working with inflation indices, regression analysis, learning curves, analogies, cost factors, and wrap rates. With a step-by-step introduction to the practicality of cost estimation and the available resources for obtaining relevant data, Cost Estimation: Methods and Tools also features: Various cost estimating tools, concepts, and techniques needed to support business decisions Multiple questions at the end of each chapter to help readers obtain a deeper understanding of the discussed methods and techniques An overview of the software used in cost estimation, as well as an introduction to the application of risk and uncertainty analysis A Foreword from Dr. Douglas A. Brook, a professor in the Graduate School of Business and Public Policy at the Naval Postgraduate School, who spent many years working in the Department of Defense acquisition environment Cost Estimation: Methods and Tools is an excellent reference for academics and practitioners in decision science, operations research, operations management, business, and systems and industrial engineering, as well as a useful guide in support of professional cost estimation training and certification courses for practitioners. The book is also appropriate for graduate-level courses in operations research, operations management, engineering economics, and manufacturing and/or production processes.

The most effective way to generate an estimate of a new product's cost engineering change cost, or innovation cost is through a detailed cost investigation. Analysis of the available materials and processes leads to the most economical and financial decisions. Now in its third edition, Realistic Cost Estimating for Manufacturing has been used by students and practitioners since 1968 in this endeavor. Revised and expanded, the book recognizes the extremely important role estimating is playing in today's highly competitive global economy. Realistic Cost Estimating for Manufacturing provides a survey of the myriad manufacturing processes and practices and combines this with in-depth explanations and examples of costing methods and tools. A comprehensive, standardized approach to their application is given. Among the manufacturing processes surveyed are: machining, casting, stamping, forging, welding, plastics technology, finishing, and rapid prototyping. To develop realistic baseline estimates, an engineering or costing professional must have an in-depth understanding of costing methods and techniques. As a fundamental reference, the book provides insight into the art, science, and functions of cost estimation in a wide range of activities: product design and manufacturing, engineering change control, proposal development, make or buy studies, identifying cost reduction opportunities, component costing, reverse engineering, benchmarking, and examining alternative processes, materials, machines, and tooling. As examples, it will aid the practitioner in efforts to justify the replacement or improvement of existing technology with new creative solutions; perform a feasibility study; develop a basis for cost-oriented decision support; improve supply chain evaluation and sourcing analysis; and minimize costs. The third edition has been greatly enhanced with new chapters and material dedicated to the roles of economics and finance, cost reduction, continuous improvement, plastic parts, electronics cost estimating, costing studies, advanced manufacturing processes, and quality costs. Further, the existing chapters have been

Bookmark File PDF Product Manufacturing And Cost Estimating Using Cadcae The Computer Aided Engineering Design Series By Chang Kuang Hua 2013 08 02 Hardcover

significantly expanded to include new processes and operations and examples to enhance learning. Since nontraditional technology is widely applied in manufacturing, its costing aspects are also explored. Five Appendices provide additional information on productivity based on efficiency, cost reduction, matching part features to manufacturing processes, packaging cost, and inspection and measurement costs. As with its previous editions, instructors of cost estimating courses can rely on the book to provide a solid foundation for manufacturing engineering courses and programs of study. The book is also useful for on-the-job training courses for engineers, managers, estimators, designers, and practitioners. It can be applied in seminars and workshops specifically dedicated to product or component cost reduction, alternative cost analysis, engineering change cost control, or proposal development. As in the previous editions, there are multiple equations and calculation examples, as well as end-of-chapter questions to test student's knowledge. An instructor's guide is also available.

This is the second part of a four part series that covers discussion of computer design tools throughout the design process. Through this book, the reader will... ..understand basic design principles and all digital design paradigms. ...understand CAD/CAE/CAM tools available for various design related tasks. ...understand how to put an integrated system together to conduct All Digital Design (ADD). ...understand industrial practices in employing ADD and tools for product development. Provides a comprehensive and thorough coverage of essential elements for product manufacturing and cost estimating using the computer aided engineering paradigm Covers CAD/CAE in virtual manufacturing, tool path generation, rapid prototyping, and cost estimating; each chapter includes both analytical methods and computer-aided design methods, reflecting the use of modern computational tools in engineering design and practice A case study and tutorial example at the end of each chapter provides hands-on practice in implementing off-the-shelf computer design tools Provides two projects at the end of the book showing the use of Pro/ENGINEER® and SolidWorks® to implement concepts discussed in the book

This practical reference/text provides a thorough overview of cost estimating as applied to various manufacturing industries, with special emphasis on metal manufacturing concerns. It presents examples and study problems illustrating potential applications and the techniques involved in estimating costs.;Containing both US and metric units for easy conversion of world-wide manufacturing data, Estimating and Costing for the Metal Manufacturing Industries: outlines professional societies and publications dealing with cost estimating and cost analysis; details the four basic metalworking processes - machining, casting, forming, and joining; reveals five techniques for capital cost estimating, including the new AACE International's Recommended Practice 16R-90 and the new knowledge and experience method; discusses the effect of scrap rates and operation costs upon unit costs; offers four formula methods for conceptual cost estimating and examines material-design-cost relationships; describes cost indexes, cost capacity factors, multiple-improvement curves, and facility cost estimation techniques; offers a generalized metal cutting economics model for comparison with traditional economic models; and more.;Estimating and Costing for the Metal Manufacturing Industries serves as an on-the-job, single-source reference for cost, manufacturing, and industrial engineers and as a text for upper-level undergraduate, graduate, and postgraduate students in cost estimating, engineering economics, and

production operations courses.;A Solutions manual to the end-of-chapter problems is available free of charge to instructors only. Requests for the manual must be made on official school stationery.

This report presents a cost analysis of Lactic Acid production from glucose syrup using a fermentation process. The process examined is similar to Corbion process. In this process, a 70 wt% glucose-water syrup is used as raw material. The fermentation broth is acidified in order to recover Lactic Acid and the product purification is realized by the use of a solvent. An 88 wt% Lactic Acid solution in water is generated as final product. This report examines one-time costs associated with the construction of a United States-based plant and the continuing costs associated with the daily operation of such a plant. More specifically, it discusses: * Capital Investment, broken down by: - Total fixed capital required, divided in production unit (ISBL); infrastructure (OSBL) and contingency - Alternative perspective on the total fixed capital, divided in direct costs, indirect costs and contingency - Working capital and costs incurred during industrial plant commissioning and start-up * Production cost, broken down by: - Manufacturing variable costs (raw materials, utilities) - Manufacturing fixed costs (maintenance costs, operating charges, plant overhead, local taxes and insurance) - Depreciation and corporate overhead costs * Raw materials consumption, products generation and labor requirements * Process block flow diagram and description of industrial site installations (production unit and infrastructure) This report was developed based essentially on the following reference(s): (1) US Patent 7867736, issued to Purac (now Corbion) in 2011; (2) US Patent 6747173, issued to Purac (now Corbion) in 2004 Keywords: Dextrose, 2-Hydroxypropanoic Acid, Anaerobic Fermentation, Calcium Carbonate, Sulfuric Acid

e-Design: Computer-Aided Engineering Design, Revised First Edition is the first book to integrate a discussion of computer design tools throughout the design process. Through the use of this book, the reader will understand basic design principles and all-digital design paradigms, the CAD/CAE/CAM tools available for various design related tasks, how to put an integrated system together to conduct All-Digital Design (ADD), industrial practices in employing ADD, and tools for product development. Comprehensive coverage of essential elements for understanding and practicing the e-Design paradigm in support of product design, including design method and process, and computer based tools and technology Part I: Product Design Modeling discusses virtual mockup of the product created in the CAD environment, including not only solid modeling and assembly theories, but also the critical design parameterization that converts the product solid model into parametric representation, enabling the search for better design alternatives Part II: Product Performance Evaluation focuses on applying CAE technologies and software tools to support evaluation of product performance, including structural analysis, fatigue and fracture, rigid body kinematics and dynamics, and failure probability prediction and reliability analysis Part III: Product Manufacturing and Cost Estimating introduces CAM technology to support manufacturing simulations and process planning, sheet forming simulation, RP technology and computer numerical control (CNC) machining for fast product prototyping, as well as manufacturing cost estimate that can be incorporated into product cost calculations Part IV: Design Theory and Methods discusses modern decision-making theory and the application of the theory to engineering design, introduces the mainstream design optimization methods for both single and multi-objectives problems

through both batch and interactive design modes, and provides a brief discussion on sensitivity analysis, which is essential for designs using gradient-based approaches Tutorial lessons and case studies are offered for readers to gain hands-on experiences in practicing e-Design paradigm using two suites of engineering software: Pro/ENGINEER-based, including Pro/MECHANICA Structure, Pro/ENGINEER Mechanism Design, and Pro/MFG; and SolidWorks-based, including SolidWorks Simulation, SolidWorks Motion, and CAMWorks. Available on the companion website <http://booksite.elsevier.com/9780123820389>

Various combinations of commercially available technologies could greatly reduce fuel consumption in passenger cars, sport-utility vehicles, minivans, and other light-duty vehicles without compromising vehicle performance or safety. Assessment of Technologies for Improving Light Duty Vehicle Fuel Economy estimates the potential fuel savings and costs to consumers of available technology combinations for three types of engines: spark-ignition gasoline, compression-ignition diesel, and hybrid. According to its estimates, adopting the full combination of improved technologies in medium and large cars and pickup trucks with spark-ignition engines could reduce fuel consumption by 29 percent at an additional cost of \$2,200 to the consumer. Replacing spark-ignition engines with diesel engines and components would yield fuel savings of about 37 percent at an added cost of approximately \$5,900 per vehicle, and replacing spark-ignition engines with hybrid engines and components would reduce fuel consumption by 43 percent at an increase of \$6,000 per vehicle. The book focuses on fuel consumption--the amount of fuel consumed in a given driving distance--because energy savings are directly related to the amount of fuel used. In contrast, fuel economy measures how far a vehicle will travel with a gallon of fuel. Because fuel consumption data indicate money saved on fuel purchases and reductions in carbon dioxide emissions, the book finds that vehicle stickers should provide consumers with fuel consumption data in addition to fuel economy information.

This report presents a cost analysis of Ethylene Dichloride (EDC) production from ethylene and chlorine using a direct chlorination process. The process examined is similar to Vinnolit process. This process consists in a liquid-phase low temperature chlorination (LTC). This report examines one-time costs associated with the construction of a United States-based plant and the continuing costs associated with the daily operation of such a plant. More specifically, it discusses:

- * Capital Investment, broken down by: - Total fixed capital required, divided in production unit (ISBL); infrastructure (OSBL) and contingency - Alternative perspective on the total fixed capital, divided in direct costs, indirect costs and contingency - Working capital and costs incurred during industrial plant commissioning and start-up
- * Production cost, broken down by: - Manufacturing variable costs (raw materials, utilities) - Manufacturing fixed costs (maintenance costs, operating charges, plant overhead, local taxes and insurance) - Depreciation and corporate overhead costs
- * Raw materials consumption, products generation and labor requirements
- * Process block flow diagram and description of industrial site installations (production unit and infrastructure)

Keywords: Ethene, 1,2-Dichloroethane, Vinnolit, Westlake

This report presents a cost analysis of Propylene Glycol production from glycerol using a vapor-phase process. The process examined is similar to Davy Technologies process. In this process, technical grade glycerol (99.5 wt% glycerol content) is used as feedstock and ethylene glycol is generated as by-product. This report examines one-time costs associated with the construction of a United States-based plant and the continuing costs associated with the daily operation of such a plant. More specifically, it discusses:

- * Capital Investment, broken down by: - Total fixed capital required, divided in production unit (ISBL); infrastructure (OSBL) and contingency - Alternative perspective on the total fixed capital, divided in direct costs, indirect costs and contingency - Working capital and costs incurred during industrial plant commissioning

Bookmark File PDF Product Manufacturing And Cost Estimating Using Cadcae The Computer Aided Engineering Design Series By Chang Kuang Hua 2013 08 02 Hardcover

and start-up * Production cost, broken down by: - Manufacturing variable costs (raw materials, utilities) - Manufacturing fixed costs (maintenance costs, operating charges, plant overhead, local taxes and insurance) - Depreciation and corporate overhead costs * Raw materials consumption, products generation and labor requirements * Process block flow diagram and description of industrial site installations (production unit and infrastructure) Keywords: Glycerin, Davy Process Technology, DPT, Propane-1,2-diol, Hydrogenolysis, Cargill, Ashland

In complex aerospace system design, making effective decision requires knowledge from all disciplines, both product and process perspectives. Manufacturing knowledge integration is most valuable during the early phase of the design since designers have more freedom, and design changes are relatively inexpensive. Yet, there is still lack of structured methodology that will allow feedback from the process perspective to show the impact of the design decisions in a quantifiable manner. The major metrics in the design decision as far as process is concerned are cost, time, and manufacturability. To incorporate these considerations in the decision making process without sacrificing agility and flexibility required during conceptual and preliminary design phases, a new set of software analysis tools are proposed. To demonstrate the applicability of this concept, a Hybrid Lifecycle Cost Estimating Tool (HLCET) is developed, and integrated to existing design methodology, Integrated Product and Process Development (IPPD). The ModelCenter suite is used to develop software architecture that seamlessly integrate between product and process analysis tools, and enable knowledge transfer between design phases. HLCET integrates high fidelity estimating techniques like process-based and activity-based into a hierarchical lifecycle cost model to increase the sensitivities of the top-down LCC model to changes or alternatives evaluated at the part or component level where tradeoff is required. Instead of applying arbitrary complexity factor to existing CERs to account for difference material or process selection, high fidelity tool can be used to related product and process parameters specific to the design to generate new result that can then be used to update top-level cost result. This new approach to lifecycle cost estimation allows for a tailored study of individual processes typically required for new and innovative designs. An example of a hypothetical aircraft wing redesign demonstrates the utility of HLCET.

This report presents a cost analysis of Polymer Grade (PG) Propylene production from propane using a dehydrogenation process. The process examined is similar to CB&I Lummus CATOFIN process. In this process, the dehydrogenation reaction is carried out in a fixed-bed reactor. This report examines one-time costs associated with the construction of a United States-based plant and the continuing costs associated with the daily operation of such a plant. More specifically, it discusses: * Capital Investment, broken down by: - Total fixed capital required, divided in production unit (ISBL); infrastructure (OSBL) and contingency - Alternative perspective on the total fixed capital, divided in direct costs, indirect costs and contingency - Working capital and costs incurred during industrial plant commissioning and start-up * Production cost, broken down by: - Manufacturing variable costs (raw materials, utilities) - Manufacturing fixed costs (maintenance costs, operating charges, plant overhead, local taxes and insurance) - Depreciation and corporate overhead costs * Raw materials consumption, products generation and labor requirements * Process block flow diagram and description of industrial site installations (production unit and infrastructure) This report was developed based essentially on the following reference(s): (1) US Patent 20120014846, issued to Lummus Technology in 2012; (2) US Patent 8101541, issued to Sud-Chemie in 2012 Keywords: PG Propylene, Clariant, Sud-Chemie, Propene, PDH, On-Purpose Propylene Production

A unique collection of time standards, manufacturing methods, and overall 'rules of thumb' used for cost-estimating electronic equipment and systems. As the only book available on the subject, it covers all operations from machining and sheet metal fabrication through wiring, circuit

board assembly, electrical testing, and packaging. In addition, it describes the fields of production schedule determination, personnel facility planning ratios, and concept estimating.

This report presents a cost analysis of Monoethylene Glycol (MEG) production from ethylene oxide. The process examined is similar to Shell OMEGA process. In this process ethylene glycol is produced from ethylene oxide, with ethylene carbonate as an intermediate. This report examines one-time costs associated with the construction of a United States-based plant and the continuing costs associated with the daily operation of such a plant. More specifically, it discusses: * Capital Investment, broken down by: - Total fixed capital required, divided in production unit (ISBL); infrastructure (OSBL) and contingency - Alternative perspective on the total fixed capital, divided in direct costs, indirect costs and contingency - Working capital and costs incurred during industrial plant commissioning and start-up * Production cost, broken down by: - Manufacturing variable costs (raw materials, utilities) - Manufacturing fixed costs (maintenance costs, operating charges, plant overhead, local taxes and insurance) - Depreciation and corporate overhead costs * Raw materials consumption, products generation and labor requirements * Process block flow diagram and description of industrial site installations (production unit and infrastructure) Keywords: Shell, OMEGA, Only MEG Advantage, Oxidation, Catalytic Process, Mitsubishi

"Provides a step-by-step introduction to the need for cost estimation, the various applications, and the available resources for obtaining relevant data"--

This book contains material on the use of software, organization strategies in cost estimating, new types of costs, learning curves, and much more. Topics presented include manufacturing costs, standard vs. actual costs, cost in relation to product volume, analysis, types of estimates, cost estimating controls, cost requests from other departments, evaluating supplier quotes, calculating selling prices, and much more.

Companies live or die on the basis of estimating their costs. Preparing estimates and bidding for new jobs is a complex and often costly process. There is no substitute for on the job training -- until now. Drawing on the authors' combined experience of more than 70 years, *Estimating Building Costs* presents state-of-the-art principles, practices, and techniques for assessing these expenditures that can be applied regardless of changes in the costs of materials, equipment, and labor. The book is an efficient and practical tool for developing contracts or controlling project costs. The authors cover the major components of the direct cost: estimating procedures and cost trends related to materials, construction equipment, and skilled and unskilled labor. They describe various types of building estimates encountered during the lifecycle of a project, as well as the role and accuracy of each. The book provides an overview of the industry, cost indexes in use, approaches to preparing a detailed estimate, and an in-depth description of the organization and function of the estimating group. Including CSI Master Format and UniFormat codes, estimating forms, a list of available estimating software packages, a detailed construction site and investigation report, the book provides a cost estimating methodology that readers can tailor to their own organizational needs.

This report presents a cost analysis of Polycarbonate (PC) production from bisphenol A (BPA) and phosgene. The process

examined is a typical interfacial process. In this process, BPA, dissolved in an aqueous solution, is reacted with phosgene, in an organic solution, at the interface of the two-phase mixture. The carbonate oligomers produced are then polycondensed to Polycarbonate resin. This report examines one-time costs associated with the construction of a United States-based plant and the continuing costs associated with the daily operation of such a plant. More specifically, it discusses: * Capital Investment, broken down by: - Total fixed capital required, divided in production unit (ISBL); infrastructure (OSBL) and contingency - Alternative perspective on the total fixed capital, divided in direct costs, indirect costs and contingency - Working capital and costs incurred during industrial plant commissioning and start-up * Production cost, broken down by: - Manufacturing variable costs (raw materials, utilities) - Manufacturing fixed costs (maintenance costs, operating charges, plant overhead, local taxes and insurance) - Depreciation and corporate overhead costs * Raw materials consumption, products generation and labor requirements * Process block flow diagram and description of industrial site installations (production unit and infrastructure) This report was developed based essentially on the following reference(s): "Polycarbonates", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition
Keywords: Thermoplastic Polymer, Interfacial Polymerization, Polycondensation

This thoroughly rewritten and updated third edition offers comprehensive coverage of cost engineering, emphasizing capital projects and focusing on both estimating and cost control. Maintaining and enhancing the style of presentation that made the previous editions so popular, Applied Cost Engineering, Third Edition furnishes an entirely new and co

[Copyright: 43d3b6da5b9562d1fc0b463131d43e8c](#)