# Pavement Analysis And Design Huang Ed 2

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## Electrical Measuring Instruments and Measurements

## Practical Railway Engineering

This book presents new studies dealing with the attempts made by the scientists and practitioners to address contemporary issues in pavement engineering such as aging and modification of asphalt binders, performance evaluation of warm mix asphalt, and mechanical-based pavement structure analysis, etc.. Asphalt binder and mixture have been widely used to construct flexible pavements. Mechanical and Chemical characterizations of asphalt materials and integration of these properties into pavement structures and distresses analysis are of great importance to design a sustainable flexible pavement. This book includes discusses and new results dealing with these issues. Papers were selected from the 5th GeoChina International Conference 2018 – Civil Infrastructures Confronting Severe Weathers and Climate Changes: From Failure to Sustainability, held on July 23 to 25, 2018 in HangZhou, China.

## Climatic Effects on Pavement and Geotechnical Infrastructure

This is the first ever text-cum-reference book in India on “Bituminous Road Construction”. It includes references to the codes and specifications of the Indian Roads Congress and the Bureau of Indian Standards, besides the international

standards such as ASTM and AASHTO. This book provides a thorough knowledge of bituminous road construction such as bitumen; aggregate; mix design; special mixes, for example, stone matrix asphalt, warm mix asphalt, and ready-made pothole mix; structural design of flexible pavements; asphalt production and construction; distresses in asphalt pavements; maintenance and rehabilitation of asphalt pavements including recycling; and interesting investigations of premature failure of asphalt pavements across the world. It includes numerous simple, practical and illustrative examples, and a large number of photographs for easy comprehension of the subject matter. This book has been designed to serve as a text for the undergraduate and postgraduate students of Civil Engineering for the courses on: Highway Materials including Testing Laboratory; Asphalt Mix Design; Highway Construction and Maintenance; Highway Pavement Failures; and Design of Flexible Pavements. Since over 95% of highways have bituminous surface, this book is also an ideal reference book for thousands of practicing highway engineers who are engaged in the most ambitious highway construction programme ever in India. Cutting-edge technology on bituminous road construction included in the book helps M.Tech and Ph.D. students in conducting research in this field and prepares them to implement their knowledge in real-life practice.

## AASHTO Guide for Design of Pavement Structures, 1993

Modern highway engineering reflects an integrated view of a road system's entire lifecycle, including any potential environmental impacts, and seeks to develop a sustainable infrastructure through careful planning and active management. This trend is not limited to developed nations, but is recognized across the globe. Edited by renowned authority

## CIGOS 2019, Innovation for Sustainable Infrastructure

In the recent past, new materials, laboratory and in-situ testing methods and construction techniques have been introduced. In addition, modern computational techniques such as the finite element method enable the utilization of sophisticated constitutive models for realistic model-based predictions of the response of pavements. The 7th RILEM International Conference on Cracking of Pavements provided an international forum for the exchange of ideas, information and knowledge amongst experts involved in computational analysis, material production, experimental characterization, design and construction of pavements. All submitted contributions were subjected to an exhaustive refereed peer review procedure by the Scientific Committee, the Editors and a large group of international experts in the topic. On the basis of their recommendations, 129 contributions which best suited the goals and the objectives of the Conference were chosen for presentation and inclusion in the Proceedings. The strong message that emanates from the accepted contributions is that, by accounting for the idiosyncrasies of the response of pavement engineering materials, modern sophisticated constitutive models in combination with new experimental material characterization and construction techniques provide a powerful arsenal for understanding and designing against the mechanisms and the processes causing cracking and pavement response deterioration. As such they enable the adoption of truly "mechanistic" design methodologies. The papers represent the following topics: Laboratory evaluation of asphalt concrete cracking potential; Pavement

cracking detection; Field investigation of pavement cracking; Pavement cracking modeling response, crack analysis and damage prediction; Performance of concrete pavements and white toppings; Fatigue cracking and damage characterization of asphalt concrete; Evaluation of the effectiveness of asphalt concrete modification; Crack growth parameters and mechanisms; Evaluation, quantification and modeling of asphalt healing properties; Reinforcement and interlayer systems for crack mitigation; Thermal and low temperature cracking of pavements; and Cracking propensity of WMA and recycled asphalts.

## Pavement Analysis and Design

## Pavement Analysis and Design

The adoption and integration of information technologies in practice and academia has had significant impact on all aspects of the field of geotechnical engineering including field characterization, laboratory characterization, numerical simulation, data management, subsurface visualization and geotechnical education. The 300 papers contained in the GeoCongress 2006 CD ROM proceedings showcase recent advancements in all geo-applications as a result of the adoption of information technologies, and explore future opportunities for the geo-industry. Topics include: sensing methods and devices; measurement of soil properties; advanced sensing and monitoring techniques for earthwork QA/QC; applications of X-ray computed tomography; sensing and data management tools for pavement systems; monitoring and control of deep foundation construction; innovations in retaining structure construction; soil structure--contact and interaction; analysis and uncertainty in wave testing; geostatistics: applications and visualizations; data management standards; data management systems and applications; GIS based site characterization and geohazard analysis; neural networks modeling for geotechnical systems; uncertainty in probabilistic seismic hazard analysis; numerical modeling and analysis: soil and rock behavior; modeling and control of deep foundation construction; large scale computations and simulations; probabilistic modeling and design; multi-scale earthquake modeling; blast effects on below-grade walls and underground structures; modeling of complex deep foundation systems; engineered earth structures; numerical modeling and analysis for pavement systems; earth retaining structures: intelligent design; modeling and characterization of deep soil cement; modeling of soil improvement; simulations for education and training; imaging based quantification; and 3-D visualization.

## PRINCIPLES OF TRANSPORTATION ENGINEERING

Functional Pavement Design is a collections of 186 papers from 27 different countries, which were presented at the 4th Chinese-European Workshops (CEW) on Functional Pavement Design (Delft, the Netherlands, 29 June-1 July 2016). The focus of the CEW series is on field tests, laboratory test methods and advanced analysis techniques, and cover analysis, material development and production, experimental characterization, design and construction of pavements. The main areas covered by the book include: - Flexible pavements - Pavement and bitumen - Pavement performance and LCCA - Pavement structures - Pavements and

environment - Pavements and innovation - Rigid pavements - Safety - Traffic engineering Functional Pavement Design is for contributing to the establishment of a new generation of pavement design methodologies in which rational mechanics principles, advanced constitutive models and advanced material characterization techniques shall constitute the backbone of the design process. The book will be much of interest to professionals and academics in pavement engineering and related disciplines.

## Cold Regions Pavement Engineering

For an introductory, one or two semester, sophomore-junior level course in Probability and Statistics or Applied Statistics for engineering, physical science, and mathematics students.This example- and exercise-rich exploration of both elementary probability and basic statistics emphasizes engineering and science applications many using data collected from the author's consulting experience. In later chapters, the text emphasizes designed experiments, especially two-level factorial design.

## Testing and Characterization of Asphalt Materials and Pavement Structures

## A Textbook of Strength of Materials

For B.E./B.Tech. & M.E/ M.Tech. Students of Civil Engineering. Also for Practising Engineering and Designers

## Concrete Pavement Design, Construction, and Performance

This book examines alternative design procedures for plain and piled raft foundations. It explores the assumptions that are made in the analysis of soil - structure interaction, together with the associated calculation methods. The book gives many examples of project applications covering a wide range of structural forms and ground conditions.

## Urban Transit

This compendium gathers the latest advances in the area of Accelerated Pavement Testing (APT), a means of testing full-scale pavement construction in an accelerated manner for structural deterioration in a very short term. Compiling novel research results presented at the 5th International Conference on Accelerated Pavement Testing, San Jose, Costa Rica, the volume serves as a timely and highly relevant resource for materials scientists and engineers interested in determining the performance of a pavement structure during its service life (10+ years) in a few weeks or months.

## Pavement, Roadway, and Bridge Life Cycle Assessment 2020

"Sponsored by the Geo-Institute of the American Society of Civil Engineers."

## Analysis of Asphalt Pavement Materials and Systems

## Asphalt Pavements

## Pavement Engineering

The urgent need for infrastructure rehabilitation and maintenance has led to a rise in the levels of research into bituminous materials. Breakthroughs in sustainable and environmentally friendly bituminous materials are certain to have a significant impact on national economies and energy sustainability. This book will provide a comprehensive review on recent advances in research and technological developments in bituminous materials. Opening with an introductory chapter on asphalt materials and a section on the perspective of bituminous binder specifications, Part One covers the physiochemical characterisation and analysis of asphalt materials. Part Two reviews the range of distress (damage) mechanisms in asphalt materials, with chapters covering cracking, deformation, fatigue cracking and healing of asphalt mixtures, as well as moisture damage and the multiscale oxidative aging modelling approach for asphalt concrete. The final section of this book investigates alternative asphalt materials. Chapters within this section review such aspects as alternative binders for asphalt pavements such as bio binders and RAP, paving with asphalt emulsions and aggregate grading optimization. Provides an insight into advances and techniques for bituminous materials Comprehensively reviews the physicochemical characteristics of bituminous materials Investigate asphalt materials on the nano-scale, including how RAP/RAS materials can be recycled and how asphalt materials can self-heal and rejuvenator selection

## Building and Construction Materials

This detailed introduction to transportation engineering is designed to serve as a comprehensive text for under-graduate as well as first-year master's students in civil engineering. In order to keep the treatment focused, the emphasis is on roadways (highways) based transportation systems, from the perspective of Indian conditions.

## Bituminous Mixtures and Pavements VII

Selected papers from the First International Symposium on Pavement and Geotechnical Engineering for Transportation Infrastructure held in Nanchang, China, June 5-7, 2011. Sponsored by the Nanchang Hangkong University and the International Association of Chinese Infrastructure Professionals (IACIP) in cooperation with the Geo-Institute of ASCE. This Geotechnical Practice Publication contains 20 papers that represent the latest developments in the application of soil, rock, and paving materials to the study and application of geomechanics and transportation geotechnology. Topics include pavement structure and subgrade preparation such as: the use of chemical additives and geogrid reinforcement; performance assessment of concrete and asphalt mixtures; mathematical models for the simulation of geotechnical problems; and evaluation of soil types in relation

to slope failure, consolidation, and embankment behavior. GPP 8 focuses on the application of geomechanics in transportation and will be of interest to both geotechnical engineers and transportation professionals.

## Pavement and Geotechnical Engineering for Transportation

Build Roads That Stand Up to Any Weather Condition The first book dedicated solely to this important topic, Cold Regions Pavement Engineering helps ensure that road quality is not compromised by cold temperatures and other environmental factors. Using the latest research from the United States, Canada, and Europe, the authors supply all the information needed to make wise decisions in situations where freezing temperatures, unstable soil, precipitation, ice, and small populations are complicating factors, along with limited funding-a common problem when designing roads in cold regions. Posing specific design and maintenance problems encountered in the field, the authors present the techniques and materials to solve them. Cold Regions Pavement Engineering is a long-needed resource. Inside: Design methodologies and maintenance techniques Key information on material selection Calculations for proper structural design Strategies for constructing new roads Advice in rehabilitating old or damaged surfaces Case studies of problems and their solutions Cold Regions Pavement Engineering includes: • Pavement Materials and Performance • Investigation and Testing o Calculation of Engineering Parameters • Design Considerations • Mix and Pavement Design • Maintenance and Rehabilitation • Pavements on Permafrost

## 7th RILEM International Conference on Cracking in Pavements

* Compiles all the data necessary for efficient and cost-effective highway design, building, rehabilitation, and maintenance * Includes metric units and the latest AASHTO (American Association of State Highway Transportation Officials) design codes

## GeoCongress 2006

This textbook covers the very wide spectrum of all aspects of railway engineering for all engineering disciplines, in a 'broad brush' way giving a good overall knowledge of what is involved in planning, designing, constructing and maintaining a railway. It covers all types of railway systems including light rail and metro as well as main line. The first edition has proved very popular both with students new to railways and with practicing engineers who need to work in this newly expanding area.In the second edition, the illustrations have been improved and brought up to date, particularly with the introduction of 30 colour pages which include many newly taken photographs. The text has been reviewed for present day accuracy and, where necessary, has been modified or expanded to include reference to recent trends or developments. New topics include automatic train control, level crossings, dot matrix indicators, measures for the mobility impaired, reinforced earth structures, air conditioning, etc. Recent railway experience, both technical and political, has also been reflected in the commentary.

## Modeling and Design of Flexible Pavements and Materials

Highway engineers are facing the challenge not only to design and construct sustainable and safe pavements properly and economically. This implies a thorough understanding of materials behaviour, their appropriate use in the continuously changing environment, and implementation of constantly improved technologies and methodologies. Bituminous Mixtures and Pavements VII contains more than 100 contributions that were presented at the 7th International Conference 'Bituminous Mixtures and Pavements' (7ICONFBMP, Thessaloniki, Greece 12-14 June 2019). The papers cover a wide range of topics: - Bituminous binders - Aggregates, unbound layers and subgrade - Bituminous mixtures (Hot, Warm and Cold) - Pavements (Design, Construction, Maintenance, Sustainability, Energy and environment consideration) - Pavement management - Pavement recycling - Geosynthetics - Pavement assessment, surface characteristics and safety - Posters Bituminous Mixtures and Pavements VII reflects recent advances in highway materials technology and pavement engineering, and will be of interest to academics and professionals interested or involved in these areas.

## The Handbook of Highway Engineering

During the past several years I have been engaged in applied research related to the stability analysis of slopes. This research was supported by the Institute for Mining and Minerals Research, University of Kentucky, in response to the Surface Mining Control and Reclamation Act of 1977, which requires stability analysis for refuse dams, hollow fills, and spoil banks created by surface mining. The results of the research have been published in several journals and reports and also presented in a number of short courses. Both the sim plified and the computerized methods of stability analysis, as developed from this research, have been widely used by practicing engineers throughout Ken tucky for the application of mining permits. The large number of out-of-state participants in the short courses indicates that the methods developed have widespread applications. This book is a practical treatise on the stability analysis of earth slopes. Special emphasis is placed on the utility and application of stablity formulas, charts, and computer programs developed recently by the author for the analy sis of human-created slopes. These analyses can be used for the design of new slopes and the assessment of remedial measures on existing slopes. To make the book more complete as a treatise on slope stability analysis, other methods of stability analysis, in addition to those developed by the author, are briefly discussed. It is hoped that this book will be a useful reference, class room text, and users' manual for people interested in learning about stability analysis.

## Advances in Materials and Pavement Prediction

A comprehensive, state-of-the-art guide to pavement design and materials With innovations ranging from the advent of SuperpaveTM, the data generated by the Long Term Pavement Performance (LTPP) project, to the recent release of the Mechanistic-Empirical pavement design guide developed under NCHRP Study 1-37A, the field of pavement engineering is experiencing significant development. Pavement Design and Materials is a practical reference for both students and practicing engineers that explores all the aspects of pavement engineering, including materials, analysis, design, evaluation, and economic analysis. Historically, numerous techniques have been applied by a multitude of jurisdictions

dealing with roadway pavements. This book focuses on the best-established, currently applicable techniques available. Pavement Design and Materials offers complete coverage of: The characterization of traffic input The characterization of pavement bases/subgrades and aggregates Asphalt binder and asphalt concrete characterization Portland cement and concrete characterization Analysis of flexible and rigid pavements Pavement evaluation Environmental effects on pavements The design of flexible and rigid pavements Pavement rehabilitation Economic analysis of alternative pavement designs The coverage is accompanied by suggestions for software for implementing various analytical techniques described in these chapters. These tools are easily accessible through the book's companion Web site, which is constantly updated to ensure that the reader finds the most up-to-date software available.

## Pavement Analysis and Design

## Geotechnical Engineering State of the Art and Practice

This book, written for the benefit of engineering students and practicing engineers alike, is the culmination of the author's four decades of experience related to the subject of electrical measurements, comprising nearly 30 years of experimental research and more than 15 years of teaching at several engineering institutions. The unique feature of this book, apart from covering the syllabi of various universities, is the style of presentation of all important aspects and features of electrical measurements, with neatly and clearly drawn figures, diagrams and colour and b/w photos that illustrate details of instruments among other things, making the text easy to follow and comprehend. Enhancing the chapters are interspersed explanatory comments and, where necessary, footnotes to help better understanding of the chapter contents. Also, each chapter begins with a "recall" to link the subject matter with the related science or phenomenon and fundamental background. The first few chapters of the book comprise "Units, Dimensions and Standards"; "Electricity, Magnetism and Electromagnetism" and "Network Analysis". These topics form the basics of electrical measurements and provide a better understanding of the main topics discussed in later chapters. The last two chapters represent valuable assets of the book, and relate to (a) "Magnetic Measurements", describing many unique features not easily available elsewhere, a good study of which is essential for the design and development of most electric equipment – from motors to transformers and alternators, and (b) "Measurement of Non-electrical Quantities", dealing extensively with the measuring techniques of a number of variables that constitute an important requirement of engineering measurement practices. The book is supplemented by ten appendices covering various aspects dealing with the art and science of electrical measurement and of relevance to some of the topics in main chapters. Other useful features of the book include an elaborate chapter-by-chapter list of symbols, worked examples, exercises and quiz questions at the end of each chapter, and extensive authors' and subject index. This book will be of interest to all students taking courses in electrical measurements as a part of a B.Tech. in electrical engineering. Professionals in the field of electrical engineering will also find the book of use.

## Principles, Practice and Design of Highway Engineering

This textbook lays out the state of the art for modeling of asphalt concrete as the major structural component of flexible pavements. The text adopts a pedagogy in which a scientific approach, based on materials science and continuum mechanics, predicts the performance of any configuration of flexible roadways subjected to cyclic loadings. The authors incorporate state-of the-art computational mechanics to predict the evolution of material properties, stresses and strains, and roadway deterioration. Designed specifically for both students and practitioners, the book presents fundamentally complex concepts in a clear and concise way that aids the roadway design community to assimilate the tools for designing sustainable roadways using both traditional and innovative technologies.

## Highway Engineering Handbook, 2e

For one/two-semester, undergraduate/graduate courses in Pavement Design. This up-to-date text covers both theoretical and practical aspects of pavement analysis and design. It includes some of the latest developments in the field, and some very useful computer software-developed by the author-with detailed instructions.

## Pavement Design and Analysis

Presents a complete coverage of all aspects of the theory and practice of pavement design including the latest concepts.

## BITUMINOUS ROAD CONSTRUCTION IN INDIA

Advances in Materials and Pavement Performance Prediction contains the papers presented at the International Conference on Advances in Materials and Pavement Performance Prediction (AM3P, Doha, Qatar, 16- 18 April 2018). There has been an increasing emphasis internationally in the design and construction of sustainable pavement systems. Advances in Materials and Pavement Prediction reflects this development highlighting various approaches to predict pavement performance. The contributions discuss links and interactions between material characterization methods, empirical predictions, mechanistic modeling, and statistically-sound calibration and validation methods. There is also emphasis on comparisons between modeling results and observed performance. The topics of the book include (but are not limited to): • Experimental laboratory material characterization • Field measurements and in situ material characterization • Constitutive modeling and simulation • Innovative pavement materials and interface systems • Non-destructive measurement techniques • Surface characterization, tire-surface interaction, pavement noise • Pavement rehabilitation • Case studies Advances in Materials and Pavement Performance Prediction will be of interest to academics and engineers involved in pavement engineering.

## Principles of Pavement Design

Pavement Engineering will cover the entire range of pavement construction, from soil preparation to structural design and life-cycle costing and analysis. It will link

the concepts of mix and structural design, while also placing emphasis on pavement evaluation and rehabilitation techniques. State-of-the-art content will introduce the latest concepts and techniques, including ground-penetrating radar and seismic testing. This new edition will be fully updated, and add a new chapter on systems approaches to pavement engineering, with an emphasis on sustainability, as well as all new downloadable models and simulations.

## The Roles of Accelerated Pavement Testing in Pavement Sustainability

Asphalt Pavements contains the proceedings of the International Conference on Asphalt Pavements (Raleigh, North Carolina, USA, 1-5 June 2014), and discusses recent advances in theory and practice in asphalt materials and pavements. The contributions cover a wide range of topics:- Environmental protection and socio-economic impacts- Additives and mo

## Advances in Pavement Engineering

This book presents selected articles from the 5th International Conference on Geotechnics, Civil Engineering Works and Structures, held in Ha Noi, focusing on the theme “Innovation for Sustainable Infrastructure”, aiming to not only raise awareness of the vital importance of sustainability in infrastructure development but to also highlight the essential roles of innovation and technology in planning and building sustainable infrastructure. It provides an international platform for researchers, practitioners, policymakers and entrepreneurs to present their recent advances and to exchange knowledge and experience on various topics related to the theme of “Innovation for Sustainable Infrastructure”.

## Miller & Freund's Probability and Statistics for Engineers

This up-to-date book covers both theoretical and practical aspects of pavement analysis and design. It includes some of the latest developments in the field, and some very useful computer software—developed by the author—with detailed instructions. Specific chapter topics include stresses and strains in flexible pavements, stresses and deflections in rigid pavements, traffic loading and volume, material characterization, drainage design, pavement performance, reliability, flexible pavement design, rigid pavement design, design of overlays, theory of viscoelasticity, theory of elastic layer systems, Superpave, pavement management systems, and an introduction to the 2002 Pavement Design Guide. For practicing engineers in the design of pavements and raft foundations.

## Stability Analysis of Earth Slopes

The only modern text to cover all aspects of urban transit operations, planning, and economics Global in scope, up-to-date with current practice, and written by an internationally renowned expert, Urban Transit: Operations, Planning, and Economics is a unique volume covering the full range of issues involved in the operation, planning, and financing of transit systems. Presenting both theoretical concepts and practical, real-world methodologies for operations, planning and

analyses of transit systems, this book is a comprehensive single-volume text and reference for students as well as professionals. The thorough examination of technical fundamentals and management principles in this book enables readers to address projects across the globe despite nuances in regulations and laws. Dozens of worked problems and end-of-chapter exercises help familiarize the reader with the formulae and analytical techniques presented in the book's three convenient sections: Transit System Operations and Networks Transit Agency Operations, Economics, and Organization Transit System Planning Visually enhanced with nearly 250 illustrations, Urban Transit: Operations, Planning, and Economics is a reliable source of the latest information for transit planners and operators in transit agencies, metropolitan planning organizations, city governments, consulting firms as well as students of transportation engineering and city planning at universities and in professional courses.

## Advances in Asphalt Materials

An increasing number of agencies, academic institutes, and governmental and industrial bodies are embracing the principles of sustainability in managing their activities. Life Cycle Assessment (LCA) is an approach developed to provide decision support regarding the environmental impact of industrial processes and products. LCA is a field with ongoing research, development and improvement and is being implemented world-wide, particularly in the areas of pavement, roadways and bridges. Pavement, Roadway, and Bridge Life Cycle Assessment 2020 contains the contributions to the International Symposium on Pavement, Roadway, and Bridge Life Cycle Assessment 2020 (Davis, CA, USA, June 3-6, 2020) covering research and practical issues related to pavement, roadway and bridge LCA, including data and tools, asset management, environmental product declarations, procurement, planning, vehicle interaction, and impact of materials, structure, and construction. Pavement, Roadway, and Bridge Life Cycle Assessment 2020 will be of interest to researchers, professionals, and policymakers in academia, industry, and government who are interested in the sustainability of pavements, roadways and bridges.

## Pavement Design and Materials

Proceedings of the 2013 International Symposium on Climatic Effects on Pavement and Geotechnical Infrastructure held in Fairbanks Alaska August 4-7 2013. Organized by University of Alaska (U.S.A.) Tongji University (China) Harbin Institute of Technology (China) Chang'An University (China) International Association of Chinese Infrastructure Professionals (IACIP) University of Tennessee (U.S.A.) and the Construction Institute of the American Society of Civil Engineers. This collection contains 22 peer-reviewed papers that address the impact of various climatic factors such as freeze and thaw wet and dry cycle rainfall and flooding on designing building preserving and maintaining transportation infrastructure. Topics include: International perspectives on climatic effects; preservation maintenance and operations; infrastructure materials and performance; and analysis and evaluation methods. This proceedings will be invaluable to professionals in pavement and geotechnical engineering including professors students design engineers and contractors.

## Design Applications of Raft Foundations

Addressing the interactions between the different design and construction variables and techniques this book illustrates best practices for constructing economical, long life concrete pavements. The book proceeds in much the same way as a pavement construction project. First, different alternatives for concrete pavement solutions are outlined. The desired performance and behaviour parameters are identified. Next, appropriate materials are outlined and the most suitable concrete proportions determined. The design can be completed, and then the necessary construction steps for translating the design into a durable facility are carried out. Although the focus reflects highways as the most common application, special features of airport, industrial, and light duty pavements are also addressed. Use is made of modeling and performance tools such as HIPERPAV and LTPP to illustrate behavior and performance, along with some case studies. As concrete pavements are more complex than they seem, and the costs of mistakes or of over-design can be high, this is a valuable book for engineers in both the public and private sectors.

## Functional Pavement Design

GSP 176 contains 13 papers on the characterization, modeling, and simulation of the behavior of asphalt pavement systems presented at the Symposium on the Mechanics of Flexible Pavements, held at the 15th U.S. National Congress of Theoretical and Applied Mechanics in Boulder, Colorado, June 25-30, 2006.