

1. Record Nr.	UNINA9910137486903321
Autore	Chowdhury Subir
Titolo	Robust optimization : world's best practices for developing winning vehicles // Subir Chowdhury, Shin Taguchi
Pubbl/distr/stampa	Chichester, England : , : Wiley, , 2016 ©2016
ISBN	1-119-21214-6 1-119-21208-1
Descrizione fisica	1 online resource (527 p.)
Disciplina	629.231
Soggetti	Motor vehicles - Design and construction Robust optimization Manufacturing processes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Title Page; Copyright; Dedication; Preface; Acknowledgments; About the Authors; Chapter 1: Introduction to Robust Optimization; 1.1 What Is Quality as Loss?; 1.2 What Is Robustness?; 1.3 What Is Robust Assessment?; 1.4 What Is Robust Optimization?; Chapter 2: Eight Steps for Robust Optimization and Robust Assessment; 2.1 Before Eight Steps: Select Project Area; 2.2 Eight Steps for Robust Optimization; 2.3 Eight Steps for Robust Assessment; 2.4 As You Go through Case Studies in This Book; Chapter 3: Implementation of Robust Optimization; 3.1 Introduction; 3.2 Robust Optimization Implementation Part One: Vehicle Level Optimization Chapter 4: Optimization of Vehicle Offset Crashworthy Design Using a Simplified Analysis Model; 4.1 Executive Summary; 4.2 Introduction; 4.3 Stepwise Implementation of DFSS Optimization for Vehicle Offset Impact; 4.4 Conclusion; References; Chapter 5: Optimization of the Component Characteristics for Improving Collision Safety by Simulation; 5.1 Executive Summary; 5.2 Introduction; 5.3 Simulation Models; 5.4 Concept of Standardized S/N Ratios with Respect to Survival Space; 5.5 Results and Consideration; 5.6 Conclusion; Reference

Part Two: Subsystems Level Optimization by Original Equipment Manufacturers (OEMs)Chapter 6: Optimization of Small DC Motors Using Functionality for Evaluation; 6.1 Executive Summary; 6.2 Introduction; 6.3 Functionality for Evaluation in Case of DC Motors; 6.4 Experiment Method and Measurement Data; 6.5 Factors and Levels; 6.6 Data Analysis; 6.7 Analysis Results; 6.8 Selection of Optimal Design and Confirmation; 6.9 Benefits Gained; 6.10 Consideration of Analysis for Audible Noise; 6.11 Conclusion; Chapter 7: Optimal Design for a Double-Lift Window Regulator System Used in Automobiles 7.1 Executive Summary7.2 Introduction; 7.3 Schematic Figure of Double-Lift Window Regulator System; 7.4 Ideal Function; 7.5 Noise Factors; 7.6 Control Factors; 7.7 Conventional Data Analysis and Results; 7.8 Selection of Optimal Condition and Confirmation Test Results; 7.9 Evaluation of Quality Characteristics; 7.10 Concept of Analysis Based on Standardized S/N Ratio; 7.11 Analysis Results Based on Standardized S/N Ratio; 7.12 Comparison between Analysis Based on Standardized S/N Ratio and Analysis Based on Conventional S/N Ratio; 7.13 Conclusion; Further Reading
Chapter 8: Optimization of Next-Generation Steering System Using Computer Simulation8.1 Executive Summary; 8.2 Introduction; 8.3 System Description; 8.4 Measurement Data; 8.5 Ideal Function; 8.6 Factors and Levels; 8.7 Pre-analysis for Compounding the Noise Factors; 8.8 Calculation of Standardized S/N Ratio; 8.9 Analysis Results; 8.10 Determination of Optimal Design and Confirmation; 8.11 Tuning to the Targeted Value; 8.12 Conclusion; Chapter 9: Future Truck Steering Effort Robustness; 9.1 Executive Summary; 9.2 Background; 9.3 Parameter Design; 9.4 Acknowledgments; References
Chapter 10: Optimal Design of Engine Mounting System Based on Quality Engineering
