1. Record Nr. UNINA9911004847703321

Titolo	Collaborative product assembly design and assembly planning : methodologies and applications / / Cong Lu ... [et al.[
Pubbl/distr/stampa	Cambridge, : Woodhead Pub., 2011
ISBN	1-61344-793-0 0-85709-388-6
Descrizione fisica	1 online resource (220 p.)
Collana	Woodhead publishing in mechanical engineering Collaborative product assembly design and assembly planning
Altri autori (Persone)	LuCong
Disciplina	670
Soggetti	Assembly-line methods Production engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Collaborative Product Assembly Design and Assembly Planning: Methodologies and applications; Copyright; Contents; List of figures, tables and lists; Acknowledgements; Preface; About the authors; 1 Introduction; 1.1 Background; 1.2 Key issues in collaborative assembly design; 1.3 Key issues in collaborative assembly planning; 1.4 Organization of the book; References; 2 Literature survey; 2.1 Survey on assembly design; 2.2 Survey on evaluation of the tolerance influence on product assemblability; 2.3 Survey on assembly planning; 2.4 Research works in this book; References 3 Collaborative assembly design3.1 An assembly representation model for collaborative design; 3.2 Functions of the co-assembly representation model; 3.3 Design modification propagation control mechanism; 3.4 System implementation; 3.5 Case study; 3.6 Summary; References; 4 Evaluation of product assemblability in different assembly sequences; 4.1 Tolerance categorization and representation; 4.2 Clearance in assembly and representation; 4.3 Using transformation matrices to conclude the propagation and accumulation of the geometric deviations 4.4 Assemblability evaluation in different assembly sequences4.5 Case study; 4.6 Summary; References; 5 Advanced assembly planning approach using a multi-objective genetic algorithm; 5.1 Tolerance-

based constraint in assembly planning; 5.2 Genetic search directions with fuzzy weights distribution; 5.3 Multi-objective genetic algorithm with multiple search directions; 5.4 Building the fitness function for assembly planning; 5.5 Case study; 5.6 Summary; References; 6 Evaluation of assembly design from assembly planning and redesign 6.1 The design problems identified from the assembly planning results6.2 The overall redesign guidelines from the assembly planning results; 6.3 Summary; Reference; 7 Collaborative assembly planning; 7.1 System framework and working mechanism; 7.2 The workflow of collaborative assembly planning; 7.3 Case study; 7.4 Summary; References; 8 Conclusions and recommendations; 8.1 Conclusions; 8.2 Recommendations for future works; Index

Sommario/riassunto

Collaborative product assembly design and assembly planning presents several newly-developed methodologies and applications for collaborative assembly design and assembly planning, two important steps during the product development life cycle. These benefits include effective and rapid assembly design and assembly planning, thereby reducing the development cost and helping manufacturers enhance profit. With increased development in computer technologies and the Internet, the traditional assembly design and assembly planning have evolved around collaborative assembly design and assembly plannin