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Titolo	Synchronization of mechanical systems [[electronic resource] /] / Henk Nijmeijer, Alejandro Rodriguez-Angeles
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Altri autori (Persone)	Rodriguez-AngelesAlejandro
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Nota di contenuto	Contents ; Preface ; 1. Introduction ; 1.1 General introduction ; 1.2 Synchronization ; ; 1.3 Synchronization in robotic systems ; 1.3.1 Velocity and acceleration measurements ; 1.3.2 Joint flexibility ; 1.3.3 Friction phenomena ; 1.4 Problem formulation 1.4.1 External synchronization of rigid joint robots 1.4.2 External synchronization of flexible joint robots ; 1.4.3 Mutual (internal) synchronization of rigid joint robots ; 1.5 Scope of the book ; 1.6 Outline of the book ; 2. Preliminaries 2.1 Mathematical preliminaries and stability concepts 2.1.1 Basic definitions ; 2.1.2 Lyapunov stability ; 2.1.3 Stability of perturbed systems ; 2.2 Dynamic models of robot manipulators ; 2.2.1 Rigid joint robots ; 2.2.2 Flexible joint robots 2.2.3 Properties of the dynamic model of the robots 2.2.4 Friction phenomena ; 2.3 Experimental setup ; 3. External synchronization of rigid joint robots ; 3.1 Introduction ; 3.2 Synchronization controller based

on state feedback  
3.3 Synchronization controller based on estimated variables  
3.3.1 Feedback control law ; 3.3.2 An observer for the synchronization errors ; 3.3.3  
An observer for the slave joint variables ; 3.3.4 Synchronization closed loop error dynamics ; 3.3.5 Stability analysis  
3.4 Gain tuning procedure

### Sommario/riassunto

The main goal of this book is to prove analytically and validate experimentally that synchronization in multi-composed mechanical systems can be achieved in the case of partial knowledge of the state vector of the systems, i.e. when only positions are measured. For this purpose, synchronization schemes based on interconnections between the systems, feedback controllers and observers are proposed. Because mechanical systems include a large variety of systems, and since it is impossible to address all of them, the book focuses on robot manipulators. Nonetheless the ideas developed here can be

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Titolo

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Organosilicon chemistry [[electronic resource]] : from molecules to materials / / edited by Norbert Auner, Johann Weis

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Altri autori (Persone)

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WeisJohann

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Soggetti

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Organosilicon Chemistry From Molecules to Materials; Contents; Tetravalent Organosilicon Compounds: Chemistry and Structure; Introduction; Structures of Small Silicon Containing Compounds - Why and How?; Sterically Overcrowded Organosilicon Compounds and their Properties; Synthesis of Functionally Substituted Oligosilanes Based on Silyl triflate Derivatives; Electroreductive Formation of Di- and Polysilanes; Linear Tetrasilanes with Internal Substituents: Oligosilanes with Optical Activity; A New Way to Si-Ge and Si-Sn Bonds: Hexachlorodisilane Cleavage of Organometal Phosphanes  $^{29}\text{Si}$ - $^{29}\text{Si}$ -Coupling Constants of Bromo- and Iododisilanes and -trisilanes  $X\text{Si}_2\text{H}_6\text{-}n$  and  $X\text{Si}_3\text{H}_8\text{-}n$  ( $X = \text{Br, I}$ ) Calculation of the  $^{29}\text{Si}$  NMR Chemical Shifts in Molecules with SiN, SiCl, and SiSi Bonds; Reactivity of Very Electron-Rich Organosilyl Amines; Lithiated Aminofluorosilanes as Precursors for Monomeric and Dimeric Iminosilanes; Fluorofunctional Silylamines and -Hydrazines Precursors for (Si-N) Ring Systems; New Approaches to (Fluoromethyl)silanes; Homo- and heterocyclic Si-O-Systems . Rings and Cages Silaheterocycles from Intramolecular Reactions of Silicon-functionalized Diazoacetic Esters Synthesis and Reaction Behavior of Organoalkoxysilylphenols; N-Silylation: New Possibilities for Long-known Amines; On the Acid-catalyzed Reaction of Siloxanes with Alcohols; On the Reactivity of Chlorosiloxanes; Chlorosilanols - more stable than you think - shown with  $^{29}\text{Si}$  NMR; Diorganosilyl-bis(O-alkylphosphonates); Subvalent and Unsaturated Organosilicon Compounds: Formation and Reactivity; Introduction; Basic Principles of the Theory of Bonding in Silicon Compounds Expectations from an Unusual Compound: The Chemistry of Decamethylsilicocene  $\text{Cp}^*2\text{Si}(\text{CO})$  and  $\text{CP}^*2\text{Si}(\text{N}_2)$ : Complexes of Decamethylsilicocene; Silicon and Phosphinomethanides: A Novel Entry to Hypervalent and Low Valence Organosilicon Chemistry; Neopentylsilenes: Laboratory Curiosities or Useful Building Blocks for the Synthesis of Silaheterocycles ?; Synthesis and Thermolysis Reactions of Si-functionalized 2-Silaazetidines; Reactions of Silaethenes in the Gas Phase and in Solution; The Reaction of Vinylsilanes with Lithium Metal; Small Silicon Ring Compounds: Formation and Reactions Matrix Photolysis of Simple Azidosilanes Low-coordinated Si-Compounds: Gas Phase Reactions with Heterosubstituted Silylenes; Unusual Coordination in Phosphorus-Silicon Compounds; Unsaturated Silicon Compounds: Matrix IR Investigations and Quantum Chemical Calculations; Hypervalent Organosilicon Compounds: Formation, Structure and Chemistry; Introduction; Reactivity of Penta- and Hexacoordinated Silicon Species; Compounds with High Coordination Numbers at Silicon: Models for the Investigation of the Nucleophilic Substitution Reaction at Silicon Centers Organosilicon Metal Compounds: Coordination Chemistry and Catalysis

**Sommario/riassunto**

Do you need to know what's new in organosilicon chemistry? This book provides in-depth coverage of the latest developments in this interdisciplinary and fast-evolving field:- selectivity and reactivity of organosilicon compounds - new synthetic applications- structure and bonding- applications in materials and polymer science Written by leading experts, this book is a well-referenced and critical overview of modern silicon chemistry.'I recommend this book to the student and the practitioner in this new, very different, and very exciting field'. Eugene G.

3. Record Nr.	UNISOBE600200010292
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