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Sommario/riassunto

Presents the components, challenges, and solutions of wireless automation as enablers for industry 4.0 This timely book introduces the state of the art in industrial automation techniques, concentrating on wireless methods for a variety of applications, ranging from simple smart homes to heavy-duty complex industrial setting with robotics accessibility. It covers a wide range of topics including the industrial revolution enablers, applications, challenges, their possible solutions, and future directions. Wireless Automation as an Enabler for the Next Industrial Revolution opens with an introduction to wireless sensor networks and their applications in various domains, emphasizing industrial wireless networks and their future uses. It then takes a look at life-span extension for sensor networks in the industry, followed by a chapter on multiple access and resource sharing for low latency critical industrial networks. Industrial automation is covered next, as is the subject of ultra reliable low latency communications. Other topics include: self healing in wireless networks; cost efficiency optimization for industrial automation; a non event-based approach for non-intrusive load monitoring; wireless networked control; and caching at the edge in low latency wireless networks. The book finishes with a chapter on the application of terahertz sensing at nano-scale for precision agriculture. . Introduces the future evolving dimension in industrial automation and discusses the enablers of the industrial revolution. Places particular emphasis on wireless communication techniques which make industrial automation reliable, efficient, and cost-effective. Covers many of the associated topics and concepts like robotics, AI, internet-of-things, telesurgery, and remote manufacturing. Of great interest to researchers from academia and industry who are looking at the industrial development from various perspectives Wireless Automation as an Enabler for the Next Industrial Revolution is an excellent book for telecom engineers, IoT experts, and industry professionals. It would also greatly benefit researchers, professors, and doctorate and postgraduate students involved in automation and industry 4.0.
