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   Edizione   [1st edition 2021.]

   Descrizione fisica   1 online resource (XVI, 296 p. 82 illus., 66 illus. in color.)

   Disciplina   002

   Soggetti   Internet of things
                                 Application software
                                 Computer engineering
                                 Embedded computer systems
                                 Industrial engineering
                                 Production engineering
                                 Wireless communication systems

   Lingua di pubblicazione   Inglese

   Formato   Materiale a stampa

   Livello bibliografico   Monografia

   Note generali   Includes index.

   Nota di contenuto   Introduction -- Categorization of IoT, main KPIs -- Part I: Wireless IoT Systems -- Intelligent Transport System -- Wireless Isochronous Real Time networks/Industrial control networks -- Unmanned Aerial Vehicle Networks -- Part II: IoT communication -- Traffic modelling and measurement framework for IoT -- Random access for IoT -- Part III: Technologies for Massive IoT -- Massive IIoT LPWAN systems -- Energy efficient massive IoT -- Data centric solutions for IioT -- Part IV: Technologies for Critical and Broadband IoT -- Approaches for improved reliability in Industrial environment -- Application of Multi-Access Edge Computing in Industry 4.0 -- Security challenges in critical IoT -- Machine Learning/AI as IoT enablers -- Channel models in industrial scenarios -- Time Sensitive Networking for wireless industrial control networks -- Network Slicing for IIoT -- Conclusion.

   Sommario/riassunto   This book provides a comprehensive overview of the most relevant research and standardization results in the area of wireless networking for Industrial IoT, covering both critical and massive connectivity. Most

chapters in this book are intended to serve as short tutorials of particular topics, highlighting the main developments and ideas, as well as giving an outlook of the upcoming research challenges. The book is divided into four parts. The rst part focuses on challenges, enablers and standardization eorts for reliable low-latency communication in Industrial IoT networks. The next part focuses on massive IoT, which requires cost- and energy-ecient technology components to efficiently connect a massive number of low-cost IoT devices. The third part covers three enabling technologies in the context of Industrial IoT: Security, Machine Learning/Articial Intelligence and Edge Computing. These enablers are applicable to both connectivity types, critical and massive IoT. The last part covers aspects of Industrial IoT related to connected transportation that are important in, for example, warehouse and port logistics, product delivery and transportation among industries. Presents a comprehensive guide to concepts and research challenges in wireless networking for Industrial IoT; Includes an introduction and overview of such topics as 3GPP standardization for Industrial IoT, Time Sensitive Networking, system dependability over wireless networks, energy-efficient wireless networks, IoT security, ML/AI for Industrial IoT and connected transportation systems; Features contributions by well-recognized experts from both academia and industry.