
Contents

Preface.....vii

Editorsxi

Contributorsxiii

Chapter 1 Connected and Autonomous Electric Vehicle Charging Infrastructure
Integration to Microgrids in Future Smart Cities 1
Mohammad Sadeghi, Melike Erol-Kantarci, and Hussein T. Mouftah

Chapter 2 A Hierarchical Management Framework for Autonomous Electric
Mobility-on-Demand Services 19
Nuzhat Yamin, Syrine Belakaria, Sameh Sorour, and Mohamed Hefeida

Chapter 3 Multifaceted Synthesis of Autonomous Vehicles’ Emerging Landscape.....67
Hossam Abdelgawad and Kareem Othman

Chapter 4 Machine Learning Methodologies for Electric-Vehicle Energy
Management Strategies: A Comprehensive Survey 115
John S. Vardakas, Ioannis Zenginis, and Christos Verikoukis

Chapter 5 Dynamic Road Management in the Era of CAV 133
*Mohamed Younis, Sookyoung Lee, Wassila Lalouani,
Dayuan Tan, and Sanket Gupte*

Chapter 6 VANET Communication and Mobility Sustainability: Interactions
and Mutual Impacts in Vehicular Environment 173
Ahmed Elbery and Hesham A. Rakha

Chapter 7 Message Dissemination in Connected Vehicles 203
Anirudh Paranjothi, Mohammed Atiquzzaman, and Mohammad S. Khan

Chapter 8 Exploring Cloud Virtualization over Vehicular Networks with
Mobility Support 223
*Miguel Luís, Christian Gomes, Susana Sargento, Jordi Ortiz, José Santa,
Pedro J. Fernández, Manuel Gil Pérez, Gregorio Martínez Pérez,
Sokratis Barmounakis, Nancy Alonistioti, Jacek Cieślak, and Henryk Gierszal*

Chapter 9	Data Offloading Approaches for Vehicle-to-Everything (V2X) Communications in 5G and Beyond.....	259
	<i>Muhammed Nur Avcil and Mujdat Soyturk</i>	
Chapter 10	Connected Unmanned Aerial Vehicles for Flexible Coverage, Data Gathering and Emergency Scenarios	277
	<i>Giacomo Segala, Riccardo Bassoli, Fabrizio Granelli, and Frank H. P. Fitzek</i>	
Chapter 11	Localization for Vehicular Ad Hoc Network and Autonomous Vehicles, Are We Done Yet?	293
	<i>Abdellah Chehri and Hussein T. Mouftah</i>	
Chapter 12	Automotive Radar Signal Analysis	319
	<i>Hassan Moradi and Ashish Basireddy</i>	
Chapter 13	Multisensor Precise Positioning for Automated and Connected Vehicles	351
	<i>Mohamed Elsheikh and Aboelmagd Noureldin</i>	
Chapter 14	Deploying Wireless Charging Systems for Connected and Autonomous Electric Vehicles	387
	<i>Binod Vaidya and Hussein T. Mouftah</i>	
Chapter 15	Dynamic Wireless Charging of Electric Vehicles	407
	<i>Sadegh Vaez-Zadeh, Amir Babaki, and Ali Zakerian</i>	
Chapter 16	Wirelessly Powered Unmanned Aerial Vehicles (UAVs) in Smart City	437
	<i>Malek Souilem, Wael Dghais, and Ayman Radwan</i>	
Chapter 17	Cyber Security Considerations for Automated Electro-Mobility Services in Smart Cities.....	457
	<i>Binod Vaidya and Hussein T. Mouftah</i>	
Chapter 18	Incentivized and Secure Blockchain-based Firmware Update and Dissemination for Autonomous Vehicles	475
	<i>Mohamed Baza, Joe Baxter, Noureddine Lasla, Mohamed Mahmoud, Mohamed Abdallah, and Mohamed Younis</i>	
Index		495