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Characterization of emissions -- Chapter 8: Health and environmental effects -- Chapter 9: Measurement of emissions -- Chapter 10: Emission regulations -- Part III: Diesel fuels -- Chapter 11: Petroleum diesel fuel -- Chapter 12: Alternative diesel fuels -- Chapter 13: Diesel engine lubricants -- Part IV: Engine efficiency and emission control technologies -- Chapter 14: Efficiency technologies -- Chapter 15: Engine emission control -- Chapter 16: Exhaust gas recirculation -- Chapter 17: Waste heat recovery -- Chapter 18: Controls for modern diesel engines -- Part V: Exhaust gas aftertreatment -- Chapter 19: Emission control catalysts -- Chapter 20: Diesel catalysts -- Chapter 21: Diesel particulate filters -- Chapter 22: Diesel filter systems -- Chapter 23: Exhaust gas thermal management -- Part VI: Engine systems -- Chapter 24: Heavy-Duty diesel engine technology evolution -- Chapter 25: Heavy-Duty diesel engine technology-US 1990-2004 -- Chapter 26: Heavy-duty diesel engines with aftertreatment -- Additional resources -- Index -- About the authors.

Sommario/riassunto

Engineers, applied scientists, students, and individuals working to reduce emissions and advance diesel engine technology will find the second edition of Diesel Emissions and Their Control to be an indispensable reference. Whether readers are at the outset of their learning journey or seeking to deepen their expertise, this comprehensive reference book caters to a wide audience. In this substantial update to the 2006 classic, the authors have expanded the coverage of the latest emission technologies. With the industry evolving rapidly, the book ensures that readers are well-informed about the most recent advances in commercial diesel engines, providing a competitive edge in their respective fields. The second edition has also streamlined the content to focus on the most promising technologies. This book is rooted in the wealth of information available on DieselNet.com, where the "Technology Guide" papers offer in-depth insights. Each chapter includes links to relevant online materials, granting readers access to even more expertise and knowledge. The second edition is organized into six parts, providing a structured journey through every aspect of diesel engines and emissions control: Part I: A foundational exploration of the diesel engine, combustion, and essential subsystems; Part II: An in-depth look at emission characterization, health and environmental impacts, testing methods, and global regulations; Part III: A comprehensive overview of diesel fuels, covering petroleum diesel, alternative fuels, and engine lubricants; Part IV: An exploration of engine efficiency and emission control technologies, from exhaust gas recirculation to engine control; Part V: The latest developments in diesel exhaust aftertreatment, encompassing catalyst technologies and particulate filters; Part VI: A historical journey through the evolution of diesel engine technology, with a focus on heavy-duty engines in the North American market.