

Contents

Part I General

Introduction to the Locomotives and Rail Road Transportation	3
Avinash Kumar Agarwal, Atul Dhar, Anirudh Gautam and Ashok Pandey	
Diesel Locomotives of Indian Railways: A Technical History	9
Joydeep Dutta and Avinash Kumar Agarwal	

Part II Efficiency Improvement and Noise Reduction

Exhaust Heat Recovery Options for Diesel Locomotives	27
Gaurav Tripathi and Atul Dhar	
Diesel Locomotive Noise Sources, Reduction Strategies, Methods and Standards.	41
Nachiketa Tiwari	

Part III Alternate Fuels for Locomotive Traction

Biodiesel as an Alternate Fuel for Diesel Traction on Indian Railways	73
Anirudh Gautam, Ravindra Nath Misra and Avinash Kumar Agarwal	
Fuel Properties and Emission Characteristics of Dimethyl Ether in a Diesel Engine.	113
Hyun Gu Roh and Chang Sik Lee	
Potential of DME and Methanol for Locomotive Traction in India: Opportunities, Technology Options and Challenges.	129
Avinash Kumar Agarwal, Nikhil Sharma and Akhilendra Paratap Singh	

Part IV Locomotive Emission Reduction and Measurement

Exhaust After Treatment System for Diesel Locomotive Engines—A Review	155
Prashant R. Daggolu, Dinesh Kumar Gogia and T.A. Siddiquie	
Catalytic Control Options for Diesel Particulate Emissions Including that from Locomotive Engines	169
Sunit K. Singh, Rohini Khobragade, Govindachetty Saravanan, Avinash K. Agarwal, Ahmed S. AL-Fatesh and Nitin K. Labhasetwar	
Soot Formation in Turbulent Diffusion Flames: Effect of Differential Diffusion	193
Rohit Saini, Manedhar Reddy and Ashoke De	
Development of a Mobile Emission Test Car for Indian Railways	217
Anirudh Gautam, Manish Agarwal and Mohd Amil	

Locomotives and Rail Road Transportation

Technology, Challenges and Prospects

Agarwal, A.K.; Dhar, A.; Gautam, A.; Pandey, A. (Eds.)

2017, X, 245 p. 129 illus., Hardcover

ISBN: 978-981-10-3787-0