Contents

Part I General

Horizons in Internal Combustion Research .......................... 3
Dhananjay Kumar Srivastava, Avinash Kumar Agarwal,
Rakesh Kumar Maurya and Amitava Datta

Part II Advanced Technology for Internal Combustion Engines

Low-Temperature Combustion: An Advanced Technology
for Internal Combustion Engines ................................. 9
Akhilendra Pratap Singh and Avinash Kumar Agarwal

Characterization of Ringing Operation in Ethanol-Fueled HCCI
Engine Using Chemical Kinetics and Artificial Neural Network . . . 43
Rakesh Kumar Maurya and Mohit Raj Saxena

Variable Valve Actuation Systems ................................. 63
Dhananjay Kumar Srivastava, Abhimanyu Das and Nitish Kumar Singh

Performance, Combustion, and Emissions Characteristics of
Conventional Diesel Engine Using Butanol Blends .................... 93
Mohit Raj Saxena and Rakesh Kumar Maurya

Hydrogen-Enriched Compressed Natural Gas: An Alternate
Fuel for IC Engines ................................................ 111
Sadaraboina Moses Vidya Sagar and Avinash Kumar Agarwal

Characterization of Cycle-to-Cycle Variations in Conventional
Diezel Engine Using Wavelets .................................... 135
Mohit Raj Saxena and Rakesh Kumar Maurya
Part III  Exhaust After-Treatment and its Heat Recovery

Recent Advancements in After-Treatment Technology for Internal Combustion Engines—An Overview ............................. 159
Gaurav Tripathi, Atul Dhar and Amsini Sadiki

Calcium Oxide Nanoparticles as An Effective Filtration Aid for Purification of Vehicle Gas Exhaust .......................... 181

Exhaust Heat Recovery Using Thermoelectric Generators:
A Review ............................................................. 193
Sarthak Nag, Atul Dhar and Arpan Gupta

Part IV  Numerical/Simulation

Chemical Kinetic Simulation of Syngas-Fueled HCCI Engine .......... 209
Rakesh Kumar Maurya, Mohit Raj Saxena, Akshay Rathore and Rahul Yadav

Gasoline Compression Ignition—A Simulation-Based Perspective ...... 227
Janardhan Kodavasal and Sibendu Som

Application of CFD for Analysis and Design of IC Engines .......... 251
Vijayashree and V. Ganesan

Part V  Next Step for Indian Automotive Industry

Future Mobility Solutions of Indian Automotive Industry:
BS-VI, Hybrid, and Electric Vehicles ............................ 309
Tadveer Singh Hora, Akhilendra Pratap Singh and Avinash Kumar Agarwal
Advances in Internal Combustion Engine Research
(Eds.)
2018, XI, 345 p. 197 illus., 159 illus. in color., Hardcover