

# Inhaltsverzeichnis

|                                                                                                                                          |     |
|------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>The Shift to Electrified Drivetrains is a Fact – Only the Technology Remains Open</b> .....                                           | 1   |
| Jochen Schröder                                                                                                                          |     |
| <b>From Mobility Demands to Future Powertrain Platforms</b> .....                                                                        | 13  |
| Christoph Danzer, Torsten Semper, Jörg Müller, Erik Schreiterer,<br>René Kockisch, Erik Schneider, Wolfgang Wukisiewitsch, and Marc Sens |     |
| <b>HV Architecture Solutions for High Efficiency Inverter</b> .....                                                                      | 27  |
| Philip Bockerhoff                                                                                                                        |     |
| <b>Front Loading Approach in Battery Development for Generation Update</b> .....                                                         | 42  |
| Neenad Dejanovic, and DI Paul Schiffbaenker                                                                                              |     |
| <b>ChargeBIG – Charge as Fast as Necessary, Not as Fast as Possible</b> .....                                                            | 54  |
| Sebastian Ewert, Walter Krepulat, Max Gerstadt, and Hauke Stamer                                                                         |     |
| <b>P0 Mild Hybrid – Pushing Limits to Maximize Benefits</b> .....                                                                        | 64  |
| Christoph Schröder, and Bertrand Pennec                                                                                                  |     |
| <b>48 V High-Power Battery Pack for Mild Hybrid Electric Powertrains</b> .....                                                           | 77  |
| Neil Fraser, Martin Berger, Jonathan Hall, Stephen Borman,<br>Benjamin Hibberd, Mike Bassett, and Simon Reader                           |     |
| <b>Nissan Future Powertrain Strategy for a Sustainable Society</b> .....                                                                 | 94  |
| Masaaki Kubo                                                                                                                             |     |
| <b>Use Case Optimized Hybrid Powertrains – The Agony of Choice?</b> .....                                                                | 104 |
| Ferit Küçükay, Christian Sieg, and Axel Sturm                                                                                            |     |
| <b>Model-Based Approach to Identify Optimal HEV Drivetrain Configurations using Different Operating Strategies</b> .....                 | 127 |
| Ralf Kleisch, Felix Günther, and Michael Bargende                                                                                        |     |

**TwinRex – The TwinConcept for a Serial-Parallel Hybrid  
System With an Excellent Cost-Value Index . . . . . 139**  
Rene Savelsberg, Johannes Moritz Maiterth, Ruben Keizer,  
Farouk Odeim, Georg Birmes, Andreas Balazs, Matthias Thewes,  
Johannes Scharf, and Andreas Sehr

**A New Dynamic Approach for the Design of Energy Management  
Strategies for Hybrid Electric Vehicles . . . . . 154**  
Bastian Beyfuss, Peter Hofmann, and Bernhard Geringer

**Approach for Online Design of Experiments with Additional  
Constraint Modeling . . . . . 172**  
Adrian Prochaska, Julien Pillas, Klaus Lüpkes, Yagiz Dursun,  
Reiner Pätzold, and Bernard Bäker

**Definition of The Optimal Battery Capacity of a Fuel Cell Vehicle . . . . . 184**  
Swantje Konradt, Arne Lazar, and Hermann Rottengruber

**Efficiency Potentials of Fuel Cell Propulsion Systems. . . . . 199**  
Alexander Trattner, Marie Macherhammer, Klaus Esser, and Patrick Pertl

**Fuel Cell Systems for Rail Applications: Development Trends  
and Challenges . . . . . 216**  
Marius Walters, Andreas Sehr, and Steffen Dirkes

**Autorenverzeichnis . . . . . 235**