<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction: Misconceptions in Science Education: An Overview</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Mageswary Karpudewan, Ahmad Nurulazam Md. Zain and A.L. Chandrasegaran</td>
<td></td>
</tr>
<tr>
<td>Part I</td>
<td>Misconceptions Identified During Teaching and Learning of Primary Science and Strategies Used to Address the Identified Misconceptions</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Utilizing Concept Cartoons to Diagnose and Remediate Misconceptions Related to Photosynthesis Among Primary School Students</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Chong Li Yong and Ch’ng Zhee Kee</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Facilitating Primary School Students’ Understanding of Water Cycle Through Guided Inquiry-Based Learning</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Chua Kah Heng and Mageswary Karpudewan</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>A Study on Addressing Students’ Misconceptions About Condensation Using the Predict-Discuss-Explain-Observe-Discuss-Explain (PDEODE) Strategy</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Mohd Nor Syahrir Abdullah, Nur Atikah Mat Nayan and Farhana Mohamad Hussin</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Inquiry-Discovery Teaching Approach as a Means to Remediate Primary Students’ Misconceptions About the Phases of the Moon</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Roslina Mohd Radzi, Mohd Nor Syahrir Abdullah and Kiliyarasi Muruthi</td>
<td></td>
</tr>
</tbody>
</table>
Part II  Misconceptions About Chemistry Concepts and Strategies to Address the Identified Misconceptions

6  Misconceptions in Electrochemistry: How Do Pedagogical Agents Help? ............................................. 91
   Lee Tien Tien and Kamisah Osman

7  The Effectiveness of Computer-Assisted Instruction (CAI) in Promoting Pre-university Students’ Understanding of Chemical Bonding and Remediating Their Misconceptions . . . . . 111
   Sumathi Ganasen and Mageswary Karpudewan

8  Green Chemistry-Based Dual-Situated Learning Model: An Approach that Reduces Students’ Misconceptions on Acids and Bases ....................................... 133
   Tan Hwa Hwa and Mageswary Karpudewan

9  The Effectiveness of Physics Education Technology (PhET) Interactive Simulations in Enhancing Matriculation Students’ Understanding of Chemical Equilibrium and Remediating Their Misconceptions ..................................... 157
   Sumathi Ganasen and Sheila Shamuganathan

Part III  Misconceptions About Physics Concepts and Strategies to Address the Identified Misconceptions

10 The Integration of Fund of Knowledge in the Hybridization Cognitive Strategy to Enhance Secondary Students’ Understanding of Physics Optical Concepts and Remediating Their Misconceptions .............................................. 181
    Mohd Norawi Ali, Lilia Halim, Kamisah Osman and Lilia Ellany Mohtar

11 Fostering Understanding and Reducing Misconceptions About Image Formation by a Plane Mirror Using Constructivist-Based Hands-on Activities ............................. 203
    Tan Wee Ling

12 Addressing Secondary School Students’ Misconceptions About Simple Current Circuits Using the Learning Cycle Approach ......................................................... 223
    Kamilah Osman

13 The Use of the Process-Oriented Guided-Inquiry Learning (POGIL) Approach to Address Form One Students’ Misconceptions About Weight and Mass ............................. 243
    Nurulhuda Rosli and Noor Nadiah Mohd Nasir
Part IV Misconceptions About Biology Concepts and Strategies to Address the Identified Misconceptions

14 Improving Understanding and Reducing Matriculation Students’ Misconceptions in Immunity Using the Flipped Classroom Approach..................................... 265
Khairina Subari

15 Improving Understanding and Reducing Secondary School Students’ Misconceptions about Cell Division Using Animation-Based Instruction.......................... 283
Ilavarasi Kalimuthu

16 Comparison Between Realistic and Non-realistic Simulations in Reducing Secondary School Students’ Misconceptions on Mitosis and Meiosis Processes............................ 307
Tavasuria Elangovan

17 Climate Change Activities: A Possible Means to Promote Understanding and Reduce Misconceptions About Acid Rain, Global Warming, Greenhouse Effect and Ozone Layer Depletion Among Secondary School Students ............... 323
Chua Kah Heng, Mageswary Karpudewan and Kasturi Chandrakesan
Overcoming Students' Misconceptions in Science Strategies and Perspectives from Malaysia
Karpudewan, M.; Md Zain, A.N.; Chandrasegaran, A.L. (Eds.)
2017, XVI, 344 p. 52 illus., Hardcover
ISBN: 978-981-10-3435-0