

# Contents

## Part I General

<b>1</b>	<b>Introduction</b> . . . . .	<b>3</b>
	Werner Engewald and Katja Dettmer-Wilde	
<b>2</b>	<b>Theory of Gas Chromatography</b> . . . . .	<b>21</b>
	Werner Engewald and Katja Dettmer-Wilde	
<b>3</b>	<b>Columns and Stationary Phases</b> . . . . .	<b>59</b>
	Werner Engewald, Katja Dettmer-Wilde, and Harald Rotzsche	
<b>4</b>	<b>Selection of Capillary Columns and Operating Conditions</b> . . . . .	<b>117</b>
	Werner Engewald and Katja Dettmer-Wilde	
<b>5</b>	<b>Inlet Systems and Sample Introduction</b> . . . . .	<b>161</b>
	Maurus Biedermann	
<b>6</b>	<b>Detectors</b> . . . . .	<b>205</b>
	Jan T. Andersson	
<b>7</b>	<b>Qualitative Analysis</b> . . . . .	<b>249</b>
	Katja Dettmer-Wilde and Werner Engewald	
<b>8</b>	<b>Quantitative Analysis</b> . . . . .	<b>271</b>
	Katja Dettmer-Wilde and Werner Engewald	
<b>9</b>	<b>Gas Chromatography-Mass Spectrometry</b> . . . . .	<b>303</b>
	Monika Moeder	
<b>10</b>	<b>Element-Specific Detection</b> . . . . .	<b>351</b>
	Sibylle Mothes and Jürgen Mattusch	
<b>11</b>	<b>Solvent-Free Extraction and Injection Techniques</b> . . . . .	<b>371</b>
	Maik A. Jochmann, Jens Laaks, and Torsten C. Schmidt	
<b>12</b>	<b>Shortening Analysis Time (Fast GC)</b> . . . . .	<b>413</b>
	Hans-Ulrich Baier	

<b>13</b>	<b>Multidimensional and Comprehensive Two-Dimensional Gas Chromatography</b> . . . . .	<b>461</b>
	Mohamed Adahchour and Udo A. Th. Brinkman	
<b>14</b>	<b>QA/QC in Gas Chromatography</b> . . . . .	<b>503</b>
	Peter Schultze	
<b>Part II Applications</b>		
<b>15</b>	<b>The Analytical Separation of Enantiomers by Gas Chromatography on Chiral Stationary Phases</b> . . . . .	<b>529</b>
	Markus Juza and Volker Schurig	
<b>16</b>	<b>Sample Preparation Techniques for GC</b> . . . . .	<b>577</b>
	Lourdes Ramos	
<b>17</b>	<b>Derivatization</b> . . . . .	<b>603</b>
	Katja Dettmer-Wilde	
<b>18</b>	<b>Analysis of Gases and Low Boiling Point Samples Using Highly Retentive Stationary Phases</b> . . . . .	<b>633</b>
	Jaap de Zeeuw	
<b>19</b>	<b>Clinical Applications</b> . . . . .	<b>695</b>
	Michael A. Gruber	
<b>20</b>	<b>Gas Chromatography in the Analysis of Flavours and Fragrances</b> . . . . .	<b>717</b>
	Patrizia Rubiolo, Cecilia Cagliero, Chiara Cordero, Erica Liberto, Barbara Sgorbini, and Carlo Bicchi	
<b>21</b>	<b>Gas Chromatography in Food Analysis</b> . . . . .	<b>745</b>
	Sascha Rohn	
<b>22</b>	<b>GC in Forensic Toxicology</b> . . . . .	<b>767</b>
	Jörg Teske and Urs-Vito Albrecht	
<b>23</b>	<b>Gas Chromatography Coupled to Mass Spectrometry for Metabolomics Research</b> . . . . .	<b>783</b>
	Lena Fragner, Takeshi Furuhashi, and Wolfram Weckwerth	
<b>24</b>	<b>Physicochemical Measurements</b> . . . . .	<b>799</b>
	Oliver Trapp	
<b>25</b>	<b>Pyrolysis-Gas Chromatography</b> . . . . .	<b>829</b>
	Shin Tsuge and Hajime Ohtani	

<b>Appendix A: Column Installation and Care as well as General Maintenance . . . . .</b>	<b>849</b>
<b>Appendix B: Troubleshooting Tips . . . . .</b>	<b>859</b>
<b>Appendix C: Nomenclature, Definitions, and Symbols Following IUPAC Recommendations . . . . .</b>	<b>871</b>
<b>Appendix D: Tables . . . . .</b>	<b>889</b>
<b>Index . . . . .</b>	<b>893</b>

<http://www.springer.com/978-3-642-54639-6>

Practical Gas Chromatography

A Comprehensive Reference

Dettmer-Wilde, K.; Engewald, W. (Eds.)

2014, XV, 902 p. 456 illus., 249 illus. in color.,

Hardcover

ISBN: 978-3-642-54639-6