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Nota di contenuto	Part I general – 1 Introduction -- 2Theory of gas chromatography – 3 Columns and stationary phases 4 – Selection of capillary columns and operating conditions -- 5 Inlet systems and sample introduction – 6 Detectors – 7 Qualitative analysis – 8 Quantitative analysis – 9 Gas chromatography-mass spectrometry – 10 Element-specific detection – 11 Solvent-free injection techniques – 12 Shortening analysis time (Fast GC) – 14 Multidimensional and comprehensive two-dimensional gas chromatography – 14 QA/QC in gas chromatography – Part II -- 15 -- the analytical separation of enantiomers by gas chromatography on chiral stationary phases – 16 Sample preparation techniques for GC – 17 Derivatization – 18 Analysis of gases and low boiling point samples using highly retentive stationary phases – 19 Clinical application – 20 Gas Chromatography in the analysis of flavours and fragrances – 21 Gas chromatography in food analysis – 22 Gas chromatography in forensic toxicology – 23 Gas chromatography coupled to mass spectrometry for metabolomics research – 24 Physiochemical measurements – 25 Pyrolysis-gas chromatography – Appendix A: Column installation and care as well as general maintenance – Appendix B: Troubleshooting tips – Appendix C: Nomenclature, definitions, and symbols following IUPAC recommendations – Appendix

Gas chromatography continues to be one of the most widely used analytical techniques, since its applications today expand into fields such as biomarker research or metabolomics. This new practical textbook enables the reader to make full use of gas chromatography. Essential fundamentals and their implications for the practical work at the instrument are provided, as well as details on the instrumentation such as inlet systems, columns and detectors. Specialized techniques from all aspects of GC are introduced ranging from sample preparation, solvent-free injection techniques, and pyrolysis GC, to separation including fast GC and comprehensive GCxGC and finally detection, such as GC-MS and element-specific detection. Various fields of application such as enantiomer, food, flavor and fragrance analysis, physicochemical measurements, forensic toxicology, and clinical analysis are discussed as well as cutting-edge application in metabolomics is covered.--