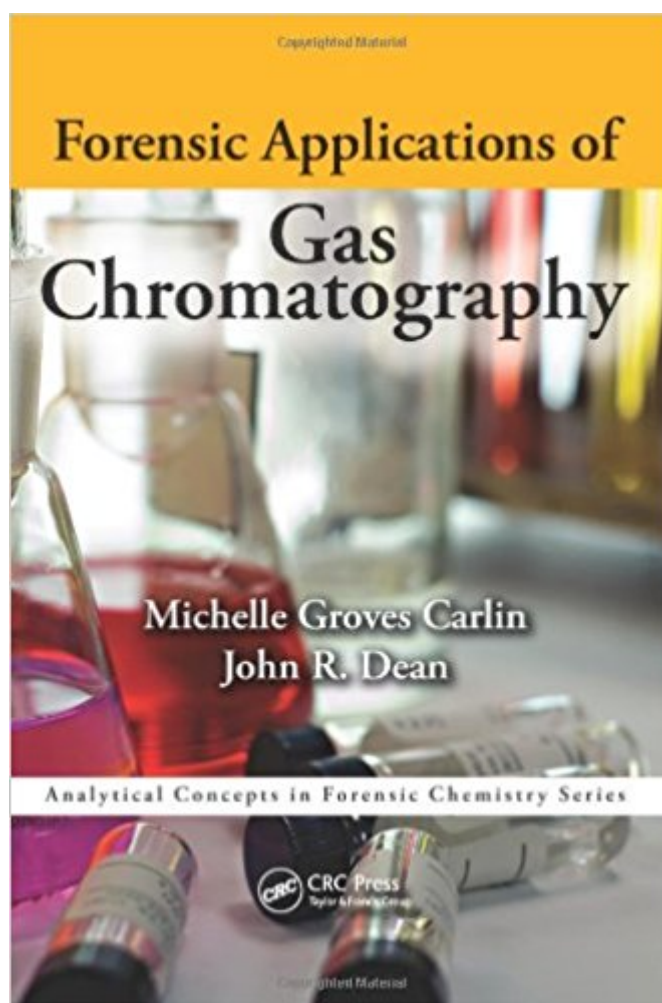


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Forensic Applications Of Gas Chromatography (Analytical Concepts In Forensic Chemistry)



Synopsis

Several areas of forensic science use the technique of gas chromatography, ranging from fire analysis to the investigation of fraudulent food and perfumes. Covering the essentials of this powerful analytical technique, *Forensic Applications of Gas Chromatography* explains the theory and shows applications of this knowledge to various realms of forensic science. Topics include:

- A brief introduction to gas chromatography and its use in forensic science
- Various components that make up the gas chromatographic instrumentation
- The theory of the separation process, along with the chemistry underpinning the process
- Method development, with a specific example of a separation of eight different compounds using a gas chromatography-flame ionization detector
- Quality assurance and method validation with information applicable to many types of analytical testing laboratories
- Troubleshooting in gas chromatography systems
- New developments in gas chromatography and advances in columns and detectors

Real examples supplement the text, along with questions in each chapter. The book includes examples of applications of gas chromatography in drugs, toxicology, fire, paint, food, and fragrance. Each application is presented as an individual case study with specific focus on a particular sample preparation technique. This allows each technique to be discussed with respect to its theory, instrumentation, solvent selection, and function, as appropriate. Each case study provides readers with suitable practical information to allow them to perform experiments in their own laboratory either as part of a practical laboratory class or in a research context. The final chapter provides answers to the questions and encourages further study and discussion.

Book Information

Series: Analytical Concepts in Forensic Chemistry (Book 2)

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" [Useful for undergraduate and postgraduate students and young scientists, but also for experienced scientists starting to work with gas chromatography.](#)" [Analytical and Bioanalytical Chemistry](#)

Michelle Groves Carlin, MSc, BSc (Hons), MRSC, CChem, studied at Heriot-Watt University in the honors program in color chemistry. She then worked at a dyehouse in the Scottish Borders before embarking on a career in analytical chemistry. After some time spent in a contract research organization in Edinburgh, she continued her education with an MSc in forensic science from Strathclyde University. She carried out a research project in the toxicology department of the Institut de Recherche Criminelle de la Gendarmerie Nationale (IRCGN) in Paris using LC-ESI-MS. She then became the manager of a workplace drug-testing laboratory in the north east of England before taking on a teaching position as lecturer in forensic science at Teesside University, where she spent three years. In 2009, she moved to Northumbria University as a senior lecturer in forensic chemistry, where she carries out research in analytical toxicology.

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