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2.8 Ionic to atomic line intensity ratio; 2.9 Active methods; 2.9.1 Laser-induced fluorescence; 2.9.2 Light scattering; 2.10 Spatial profiles; 2.11 Temperature and electron number densities observed in analytical ICPs; 2.12 Plasma perturbation; 2.13 Multiline diagnostics; References; 3 Basic Concepts and Instrumentation for Plasma Spectrometry; 3.1 Detection limits and sensitivity; 3.1.1 ICP-Atomic emission spectrometry; 3.1.2 Limits of detection; 3.1.3 Axial systems; 3.1.4 The sample introduction system; 3.1.5 Detectors
3.2 Accuracy and precision3.2.1 Instrumental drift; 3.2.2 Matrix effects; 3.2.3 Plasma effects; 3.2.4 Spectral effects, interferences and background correction; 3.2.5 Dynamic range; 3.2.6 ICP-MS; 3.3 Multi-element capability and selectivity; 3.4 Instrumental overview; 3.5 Radio-frequency generators; 3.6 Torches; 3.7 Spectrometers; 3.7.1 Line isolation; 3.7.2 Monochromators; 3.7.3 Polychromators; 3.8 Detectors; 3.8.1 Photomultiplier tubes; 3.8.2 Solid-state detectors; 3.9 Nebulisers and spray chambers; 3.10 Read-out devices, instrument control and data processing; 3.11 Radial and axial plasmas
3.12 Instrumentation for high-resolution spectrometry3.13 Micro-plasmas and plasma on a chip; References; 4 Aerosol Generation and Sample Transport; 4.1 Introduction; 4.2 Sample introduction characteristics of the ICP source; 4.2.1 Particle size distribution; 4.2.2 Plasma loading; 4.3 Liquid aerosol generation; 4.3.1 Pneumatic nebulization; 4.3.1.1 Pneumatic nebulizer designs; 4.3.1.2 Ultrasonic nebulizers; 4.3.1.3 Alternative nebulizer designs; 4.3.2 Spray chambers; 4.3.2.1 Mode of operation; 4.3.2.2 Practical designs of spray chambers; 4.3.2.3 Desolvation; 4.3.3 Chromatographic interfaces
4.4 Vapour generation

Sommario/riassunto

The first edition of Inductively Coupled Plasma Spectrometry and its Applications was written as a handbook for users who wanted a better understanding of the theory augmented by a practical insight of how best to approach a range of applications, and to provide a useful starting point for users trying an approach or technique new to them. These objectives have been retained in the second edition but a slight shift in emphasis gives the volume an overall perspective that is more forward looking.Structured into 11 chapters, the current edition is a thorough revision of the original, cov