

- *Electrochemical definitions and terminology*
 - *Electrochemical cells, cell components, Half - cell and electrode potential*
 - *Anode and cathode, galvanic and electrolyte cells*
- *Potentiometric methods*
 - *Indicator electrodes, metallic electrodes first, second and third order electrodes*
 - *Membrane electrodes, Alkaline and acid errors, pH electrode calibration methods, Glass selective electrodes, selectivity of electrode and selectivity ratio*
 - *Ion selective electrodes, glass, liquid membrane, solid - state, precipitate, gas - sensing and Enzyme electrodes, Instruments for potential measurement*
 - *Potentiometers, Direct reading instruments, Analytical application, External and standard addition methods*
 - *Potentiometric titrations, conventional, first and second derivative and Gran`s plots for end point detections.*
- *Electro-gravimetric and Coulometric methods*
 - *Electrolysis and current- voltage relationships, Constant current and constant potential electrolysis, Types of coulometric methods, constant potential coulometry*
 - *Coulometric titration, neutralization, precipitation, complex formation, oxidation - reduction titration*
- *Voltammetry and polarography*
 - *Description of polarographic measurements, polarographic cell, Dropping Mercury electrode, polarograms*
 - *polarographic wave, residual current, limiting current, diffusion current, and half - wave potential, Supporting electrolyte and current maxima suppressors*
 - *Ilkovic equation and its analytical application, Voltammetry and related techniques.*
 - *Amperometric titrations, titration curves, analytical applications*
- *Conductometric methods*
 - *Electrolytic conductance, equivalent conductance*
 - *Conductance measurements, power sources, types of cells, cell constant*
 - *Conductometric titrations, acid - base mixture titrations*

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Analytical electrochemistry, J. Wang, 3rd ed., 2006, Jon Wiley & Sons.

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Principles of Instrumental analysis, D. S. Skoog, F. J. Holler and T. A. Nieman, 5th ed., 1998.