



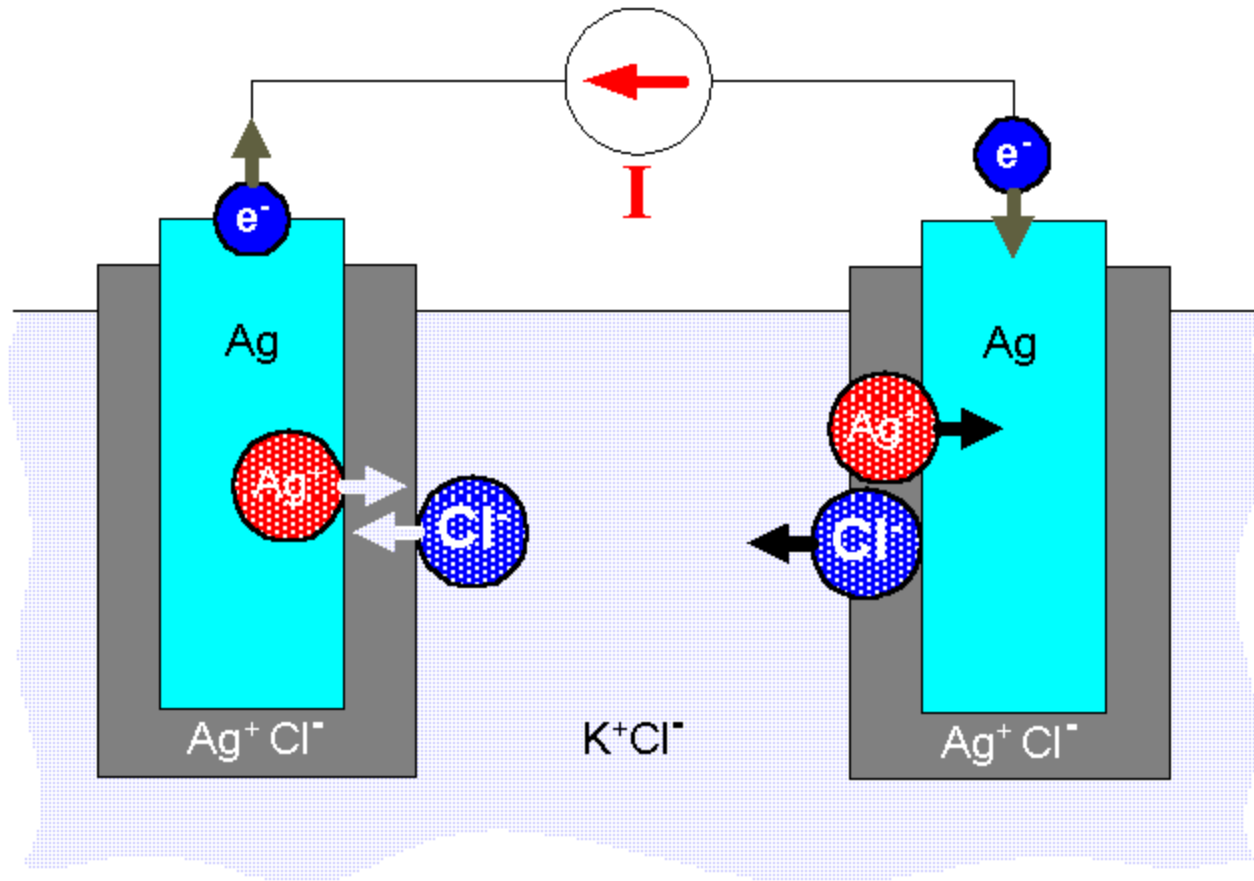
UNIT – 3

BIOPOTENTIAL ELECTRODES & CONFIGURATION

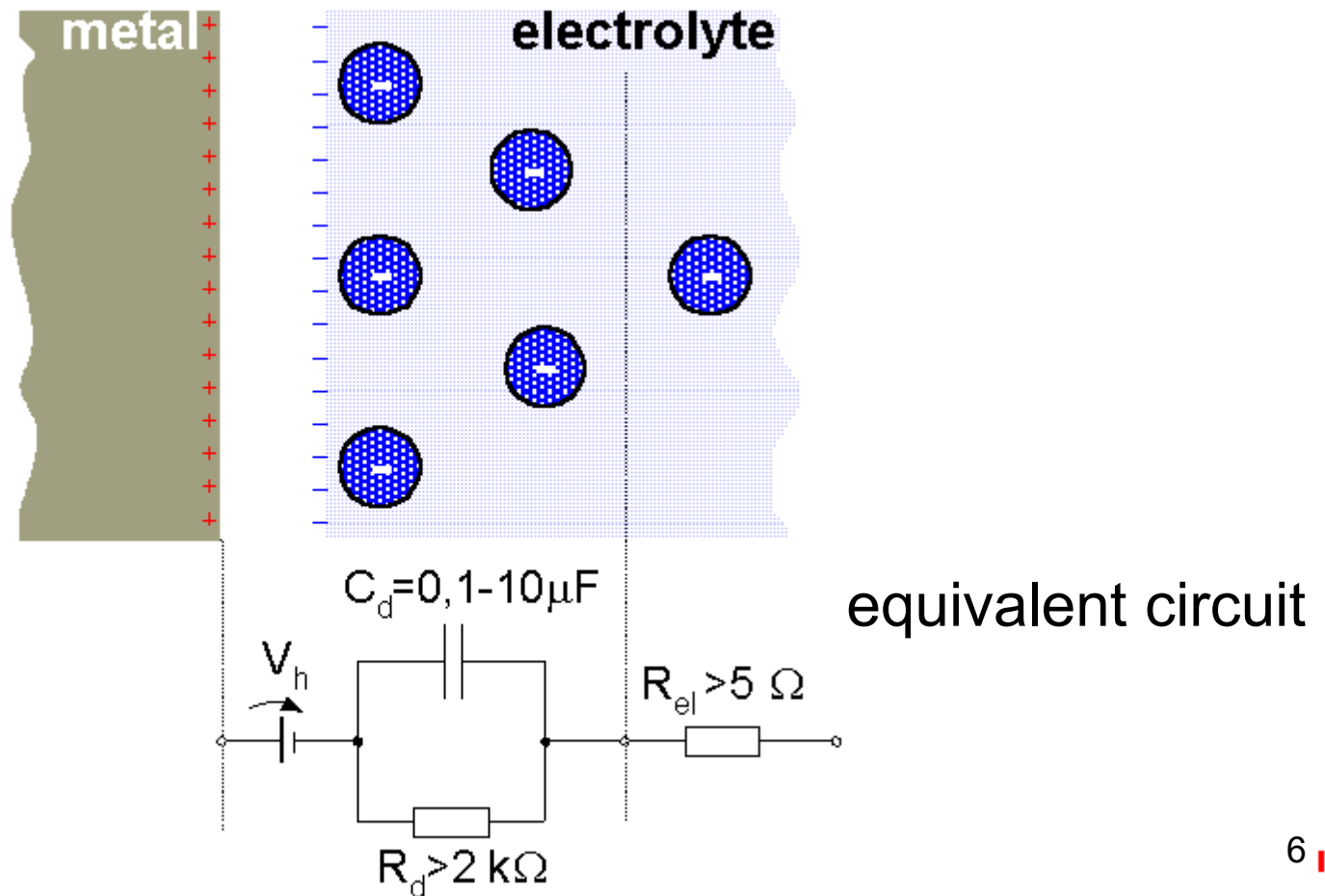
Non polarizable electrodes

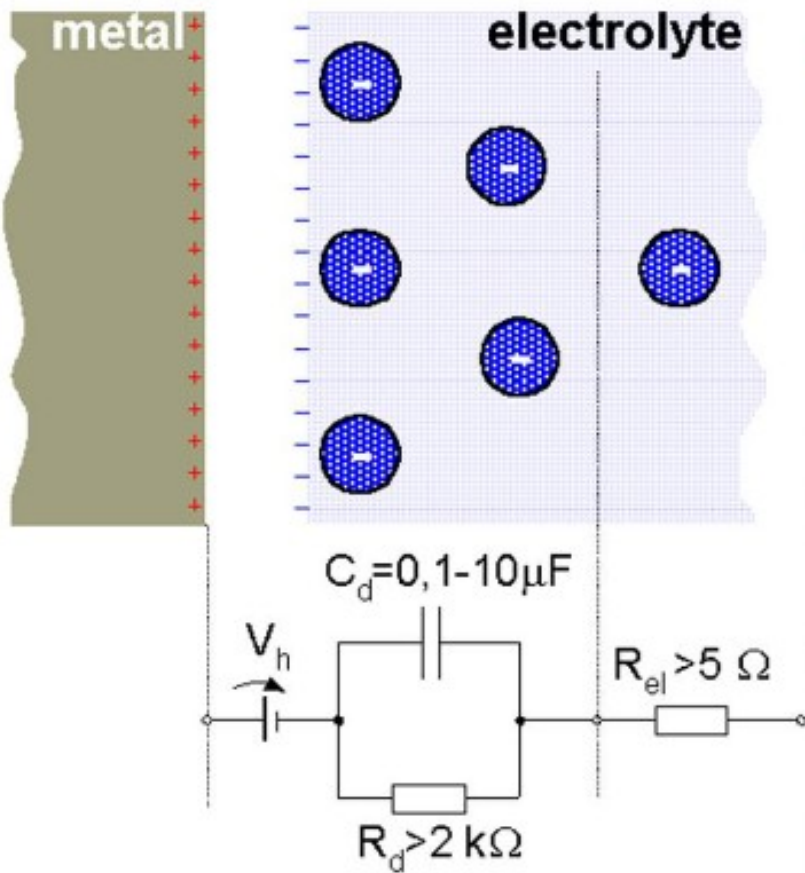
chemical reactions

silver / silver chloride

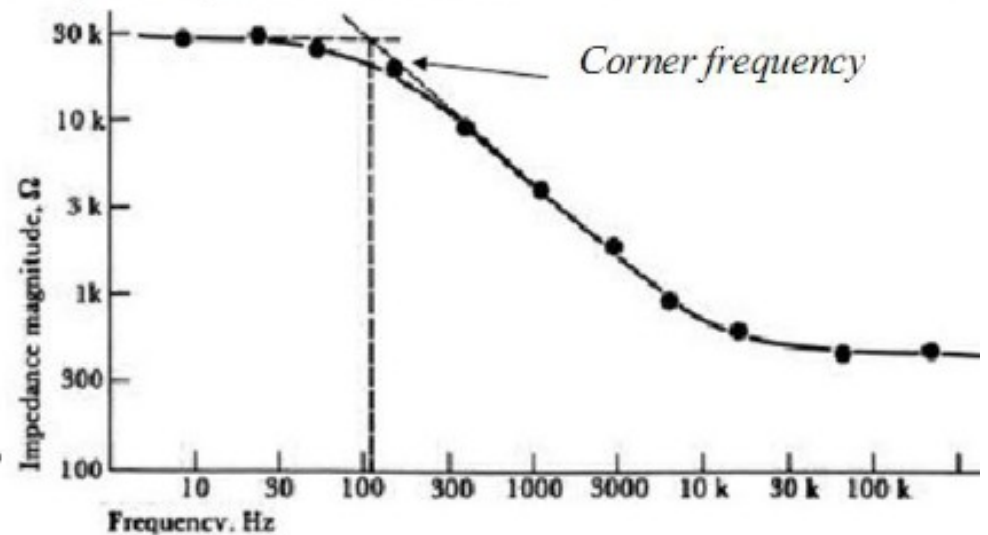


electrical behaviour





- C_d : capacitance of electrode-eletrolyte interface
- R_d : resistance of electrode-eletrolyte interface
- R_{el} : resistance of electrode lead wire
- V_h : cell potential for electrode



Frequency Response

TABLE 48.4 Examples of Applications of Biopotential Electrodes [6]

Application	Biopotential	Type of Electrode
Cardiac monitoring	ECG	Ag/AgCl with sponge Ag/AgCl with hydrogel
Infant cardiopulmonary monitoring	ECG impedance	Ag/AgCl with sponge Ag/AgCl with hydrogel Thin-film Filled elastomer dry
Sleep encephalography	EEG	Gold cups Ag/AgCl cups Active electrodes
Diagnostic muscle activity	EMG	Needle
Cardiac electrograms	Electrogram	Intracardiac probe
Implanted telemetry of biopotentials	ECG EMG	Stainless steel wire loops Platinum disks
Eye movement	EOG	Ag/AgCl with hydrogel

Electrode-tissue interface

