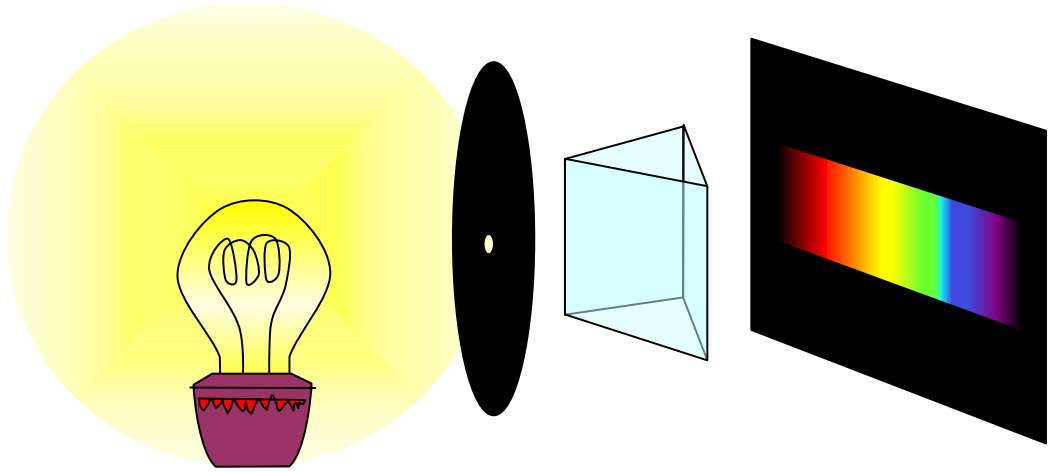
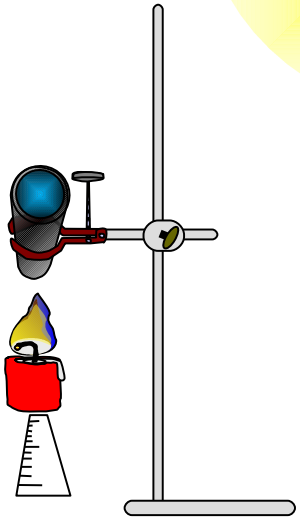
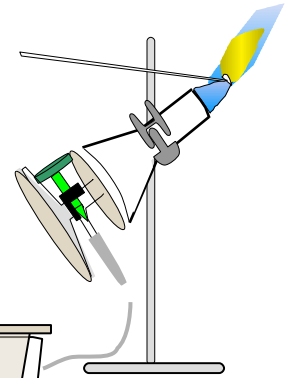
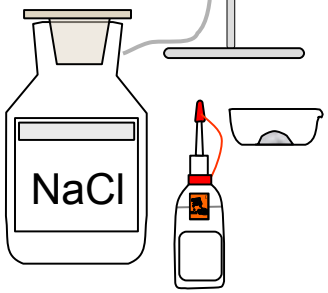
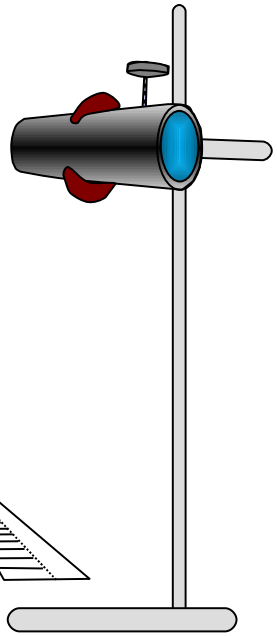
Materialien zur Spektralanalyse

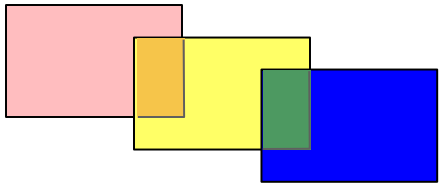


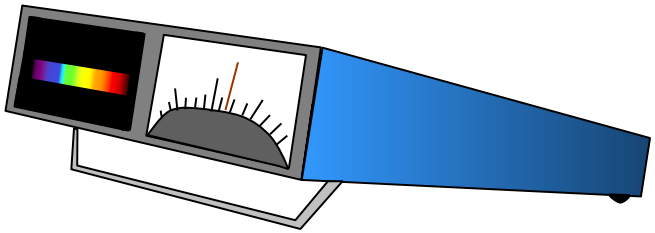


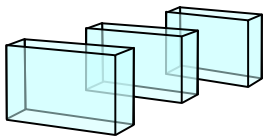




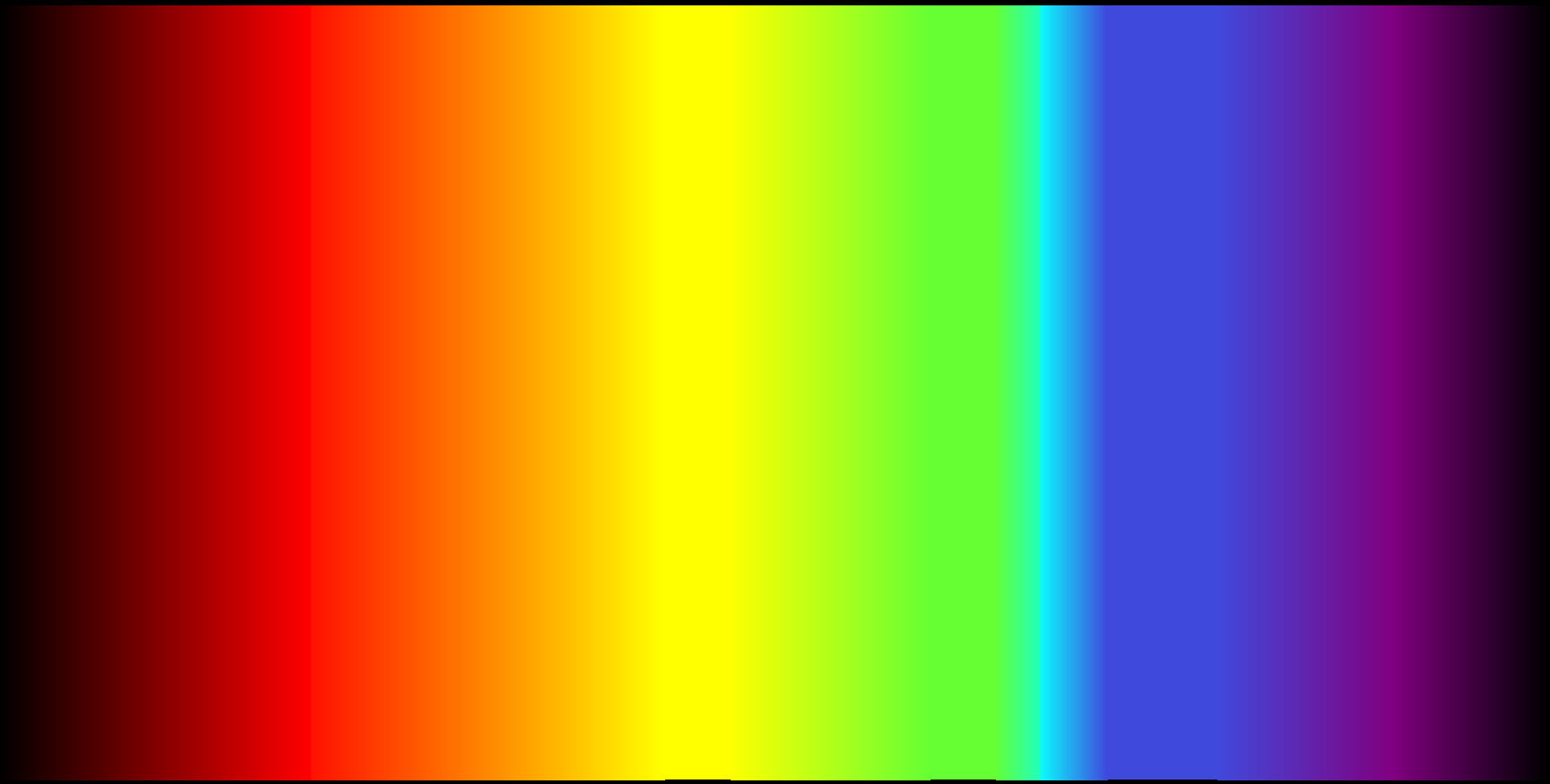




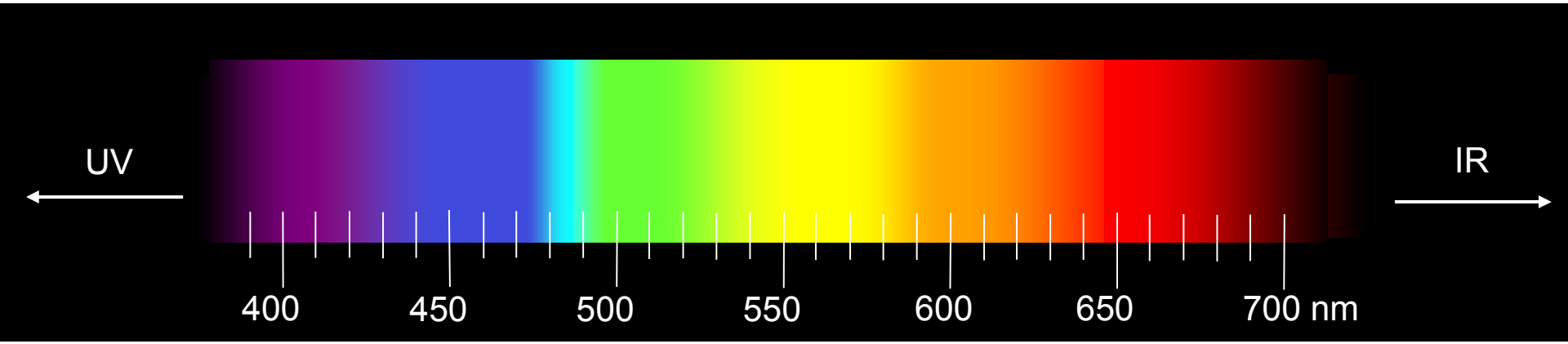


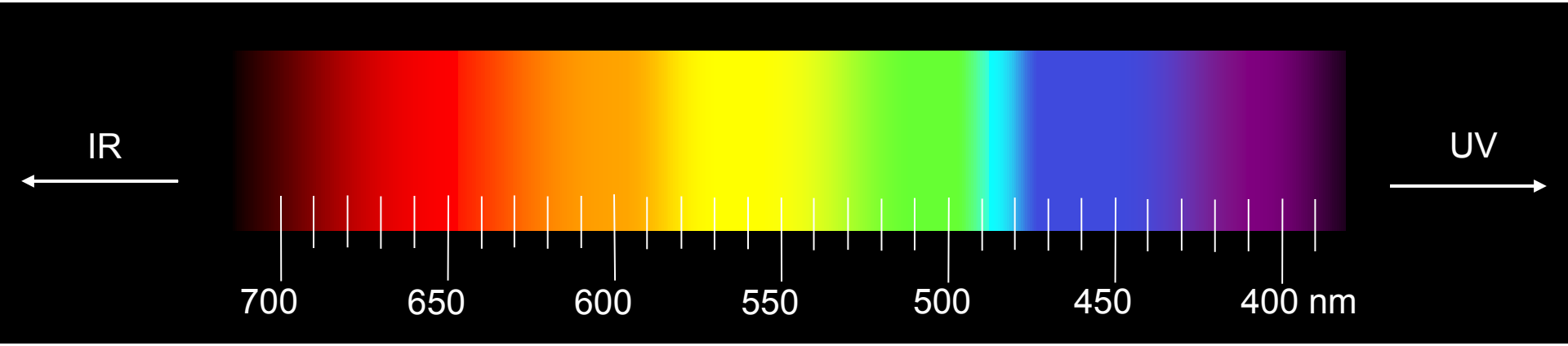


Farben im sichtbaren Bereich des elektromagnetischen Spektrums



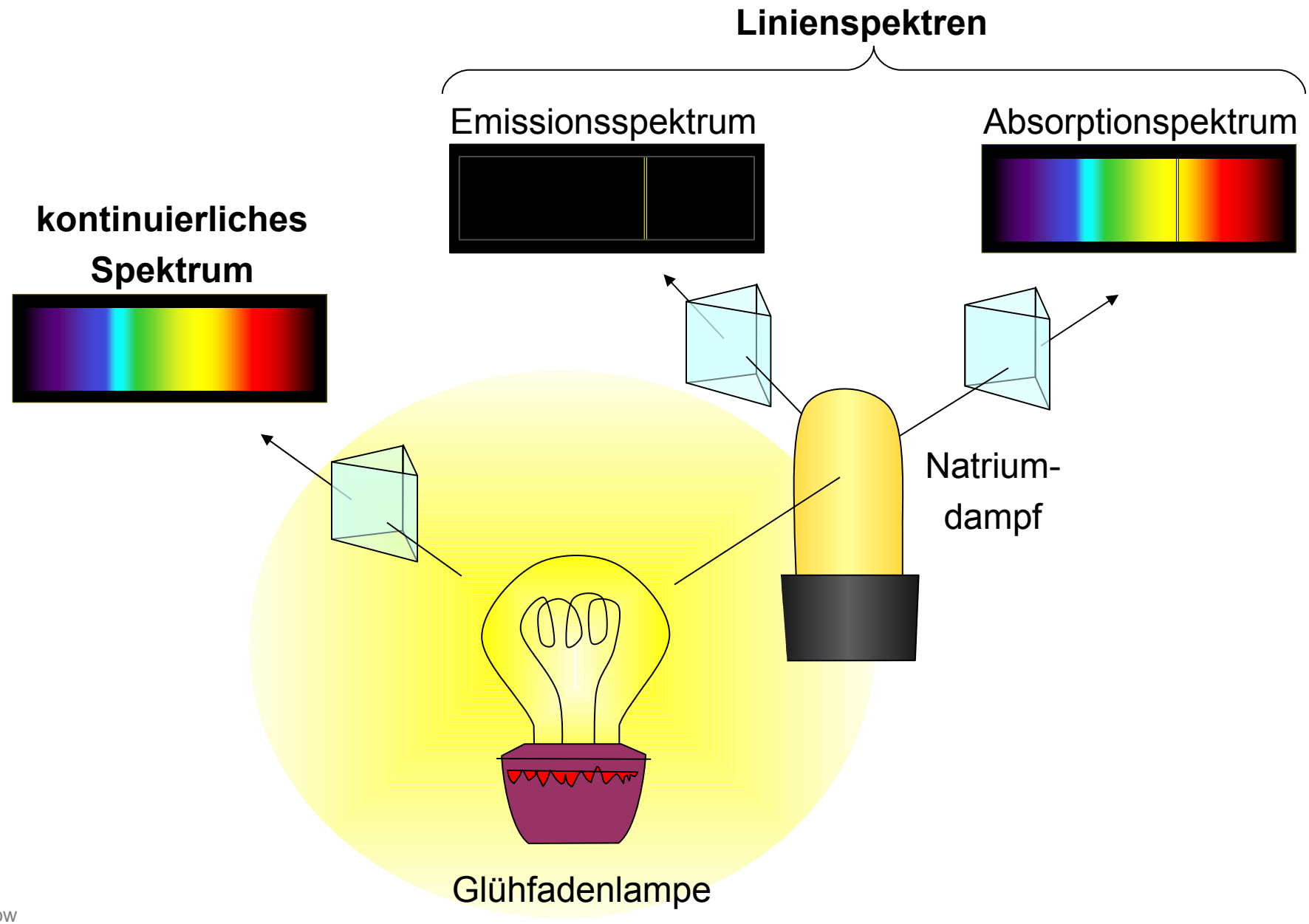
Farben und Wellenlängen im elektromagnetischen Spektrum



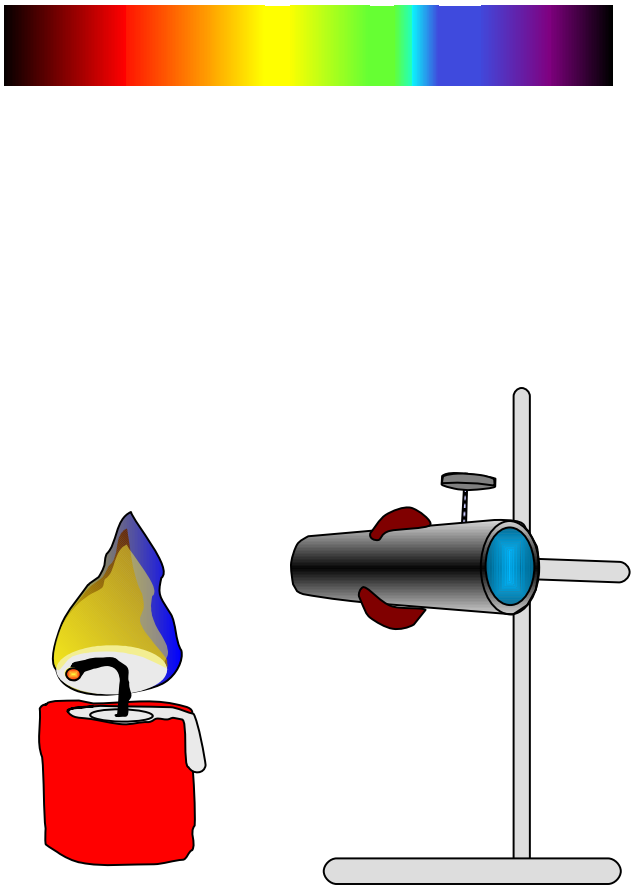


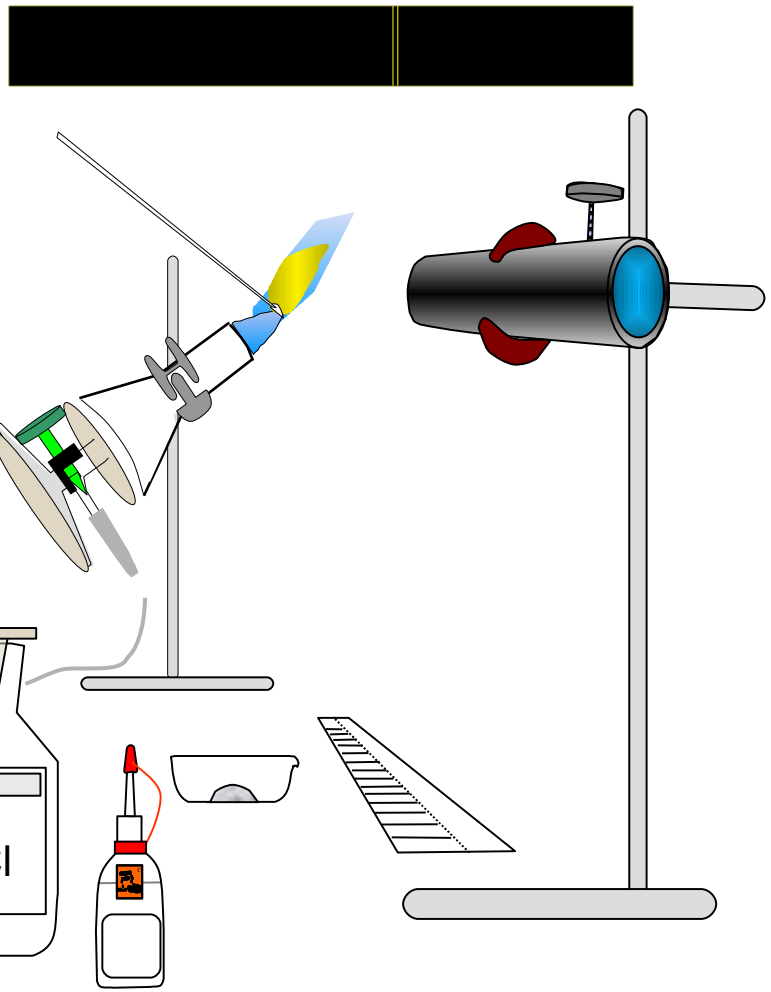
rot (750-650nm), orange (640-590nm), gelb (580-550nm), grün (530-490nm), cyan (490-480nm), blau-violett (460-480nm), violett (430-390nm)

Schema: Zustandekommen von Spektren



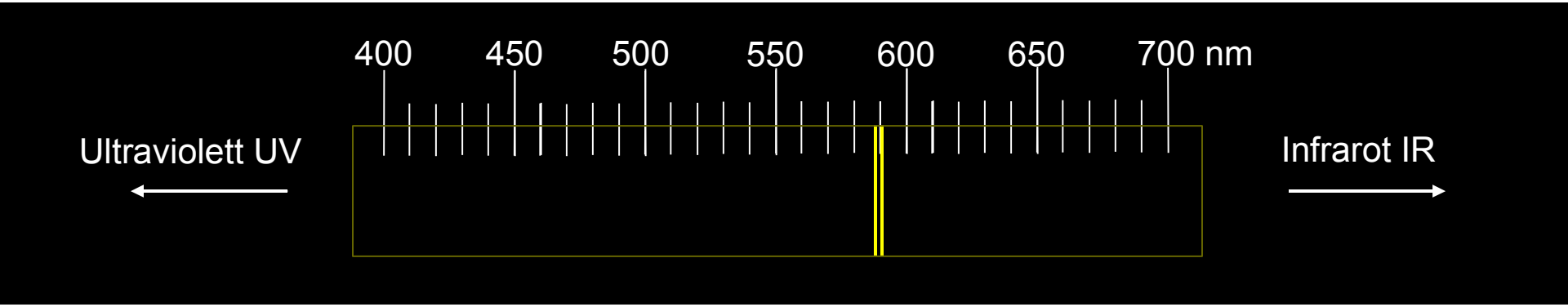
Versuchsaufbauten zur Aufnahme von Spektren mit einem Taschenspektroskop



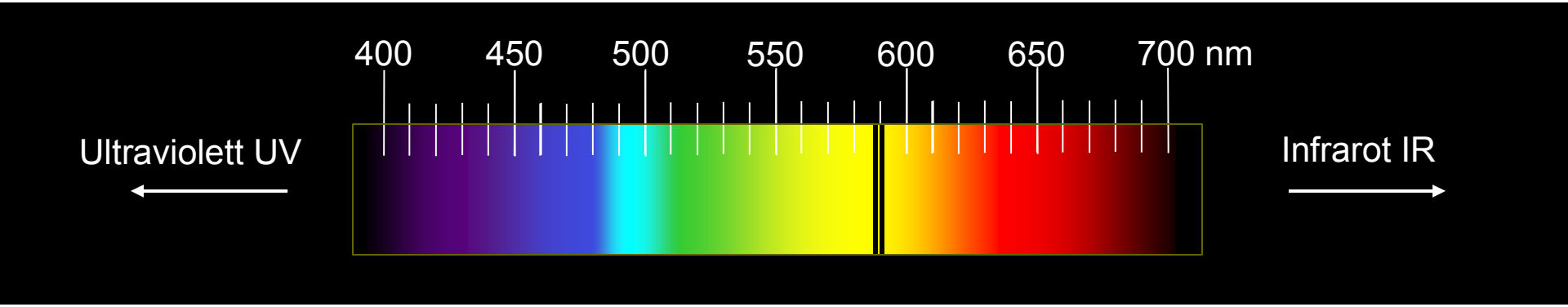


Vergleich: Linienspektren von Natrium

Emissionsspektrum



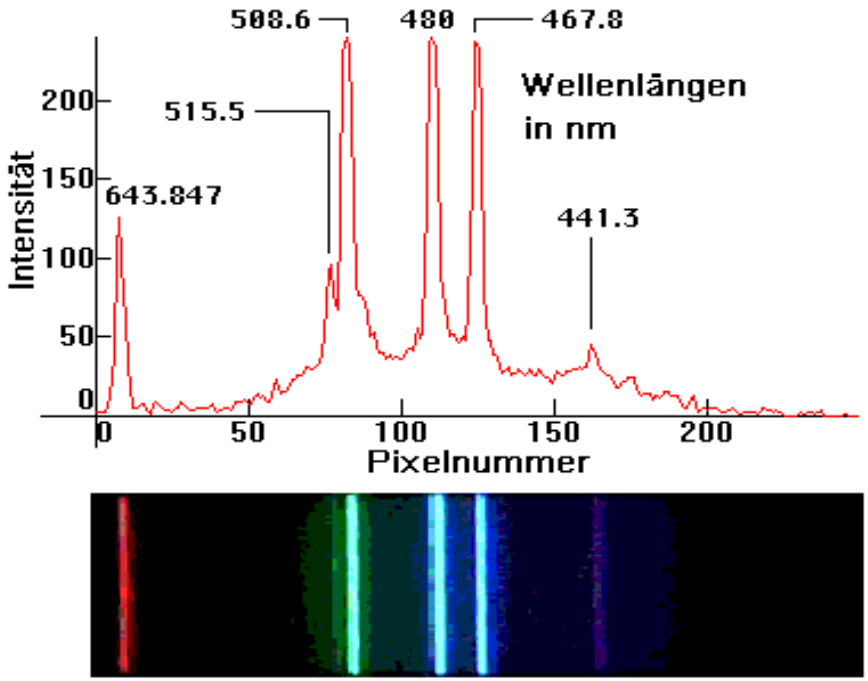
Absorptionsspektrum



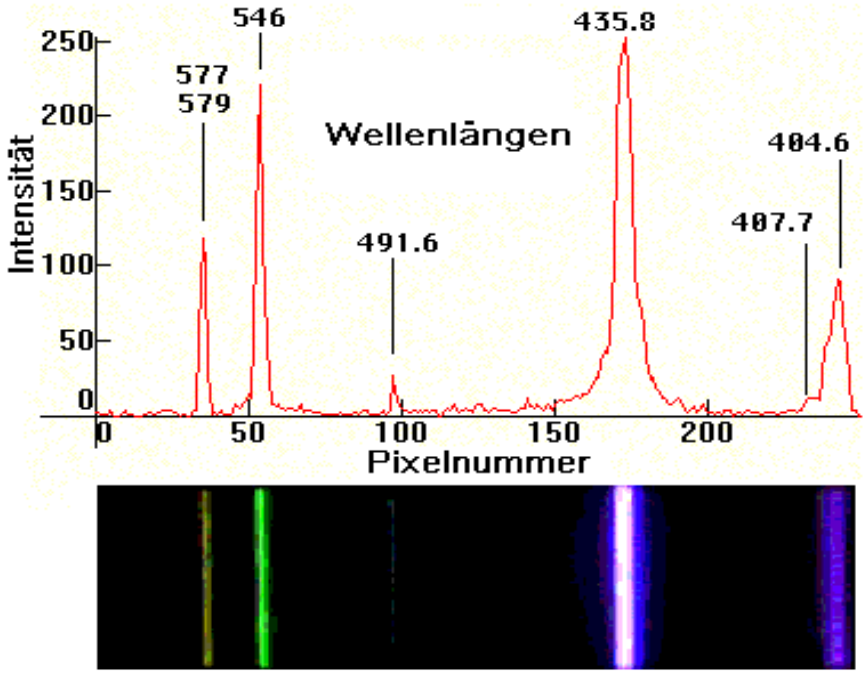
Beispiele: Emissionsspektren

Quelle Wikipedia: Herbert Weidner

Cadmium: Niederdruck Spektrum

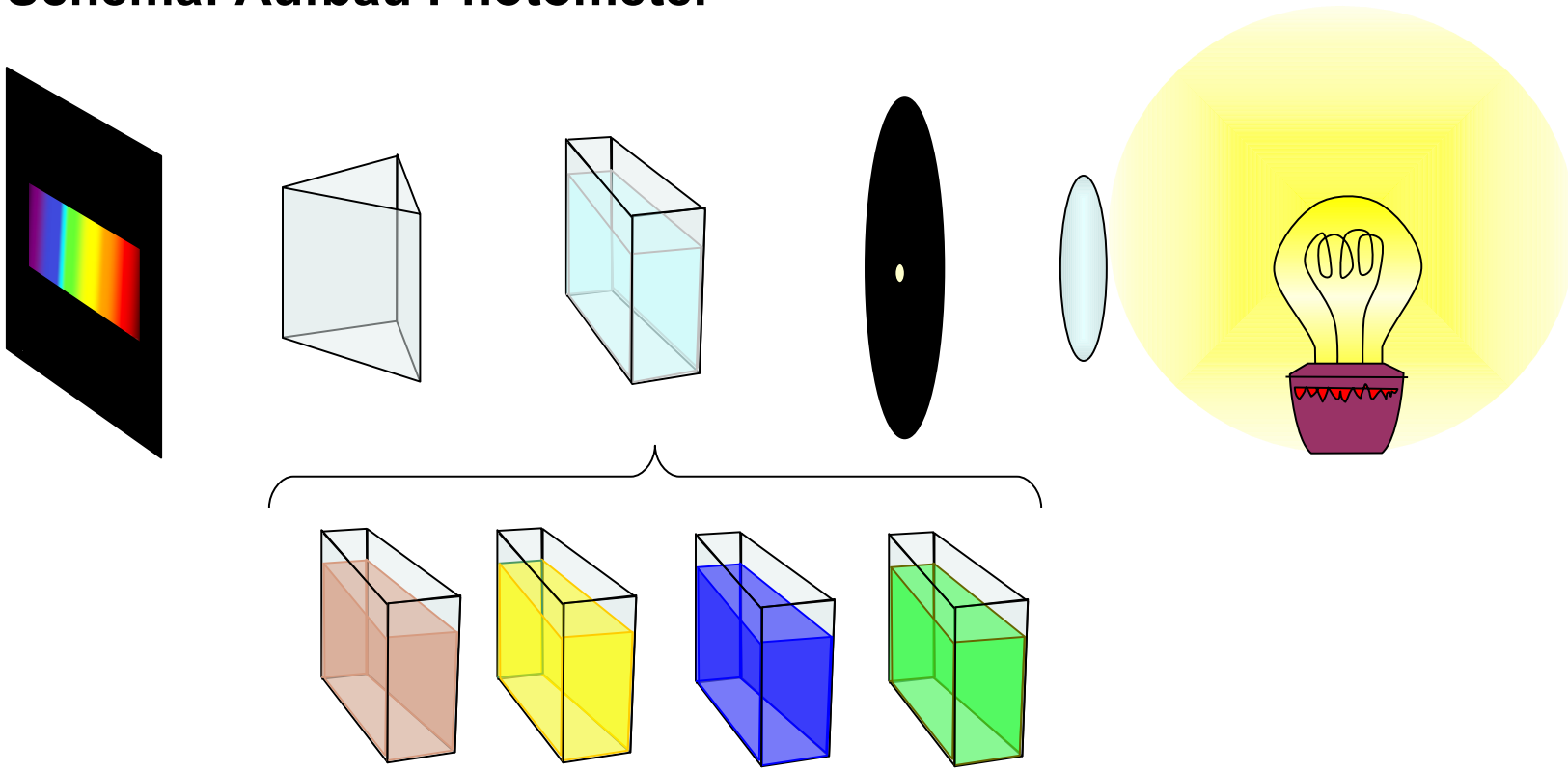


Quecksilber: Niederdruck Spektrum

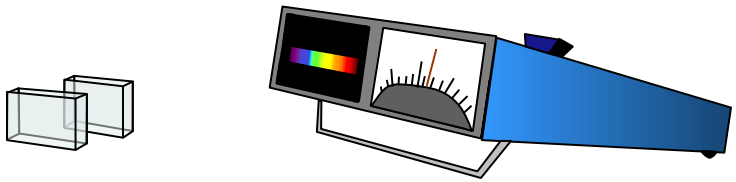


Aufnahme von Absorptionsspektren

Schema: Aufbau Photometer

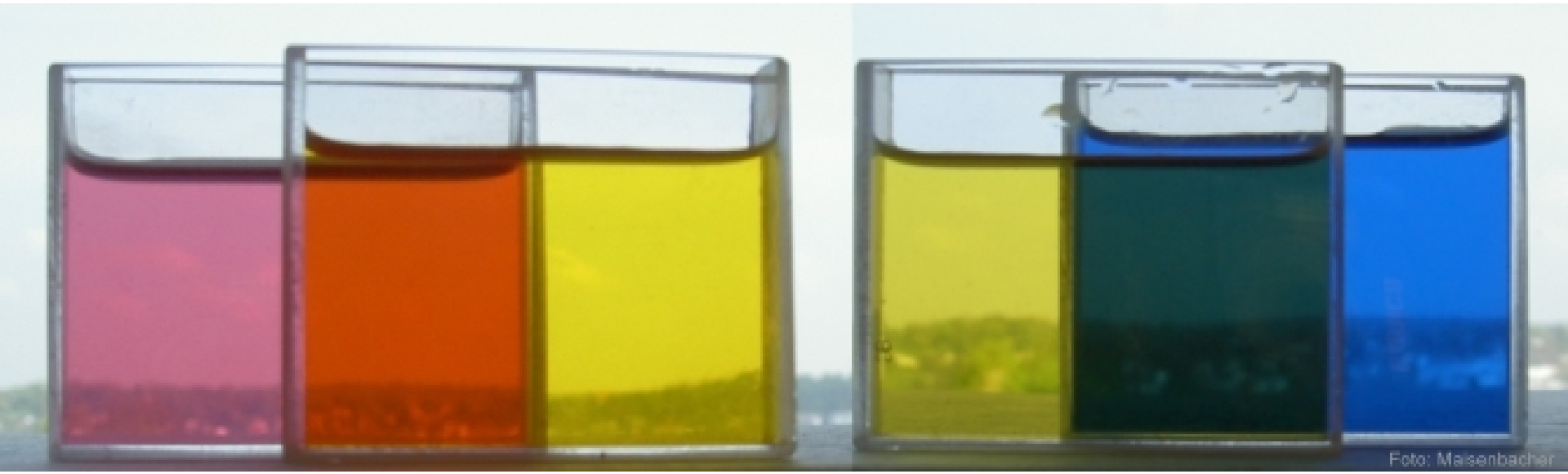


Küvetten mit Probelösungen



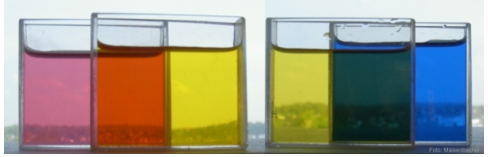
Bromthymolblau

Vier Küvetten mit Lösungen von Bromthymolblau auf der Fensterbank



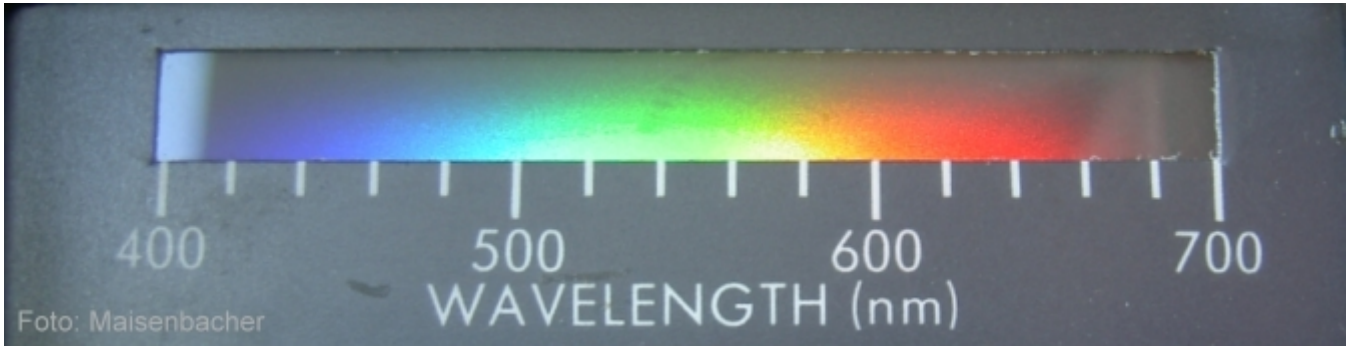
pH 0 pH 4 pH 4 pH 8

Bromthymolblaulösungen

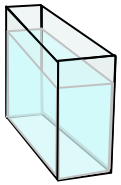


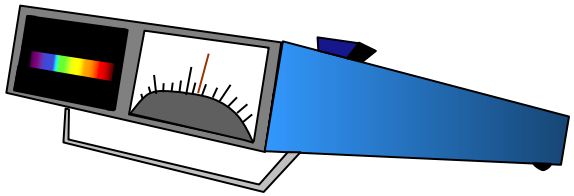
Wasser pH: 0 pH: 4 pH: 8

Photometeranzeige: Absorptionsspektrum

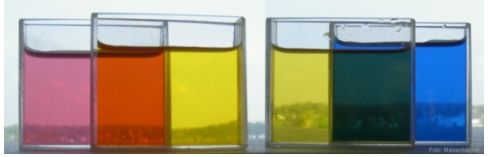


Wasser

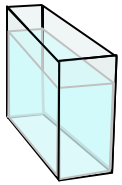




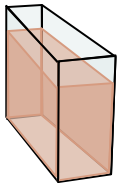
Bromthymolblaulösungen



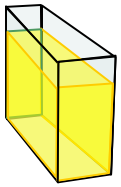
Wasser



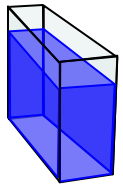
pH: 0



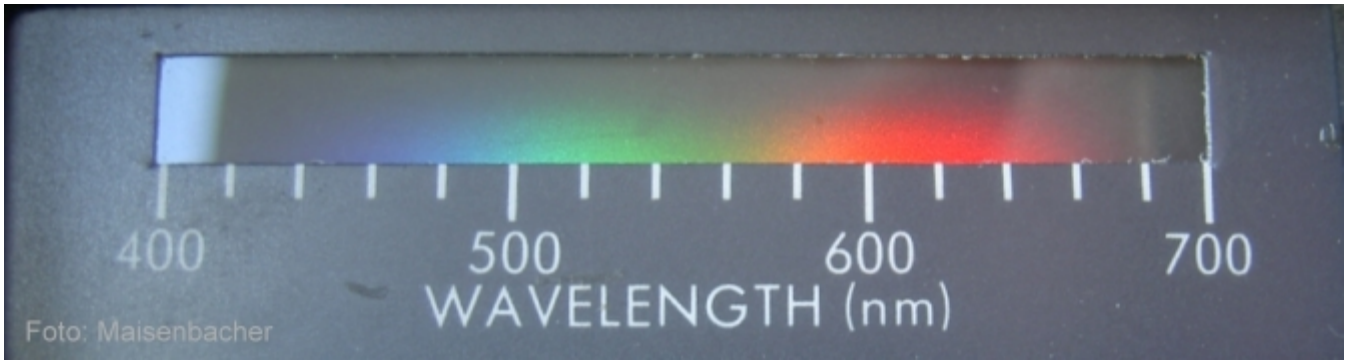
pH: 4



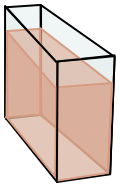
pH: 8

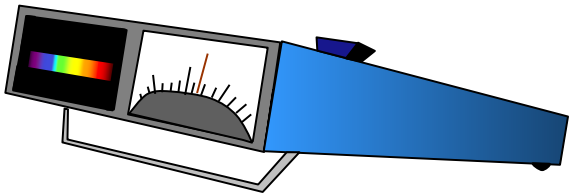


Photometeranzeige: Absorptionsspektrum

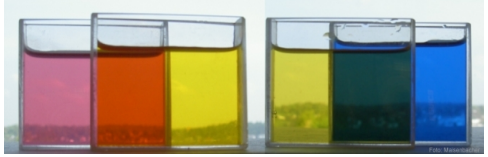


pH: 0

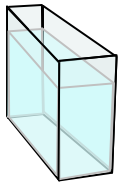




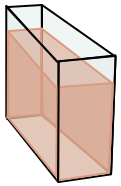
Bromthymolblaulösungen



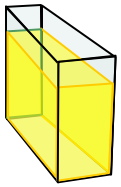
Wasser



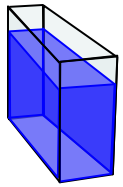
pH: 0



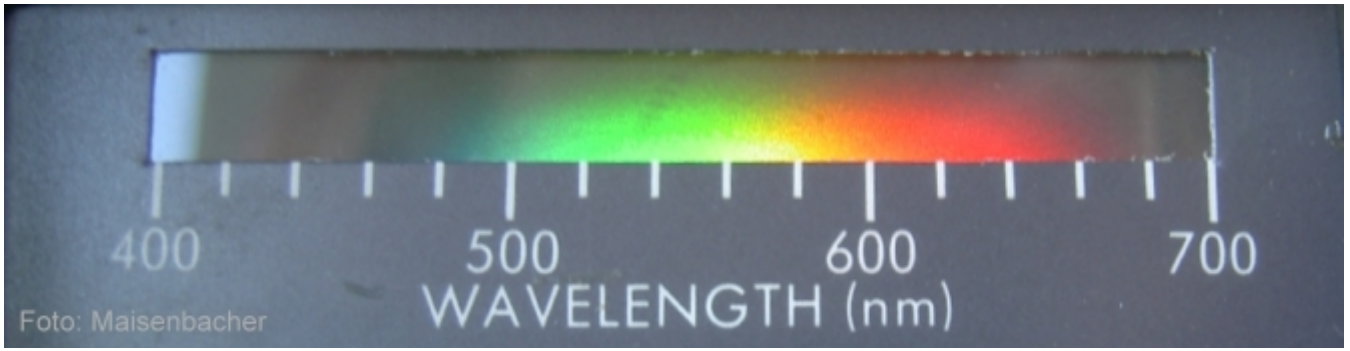
pH: 4



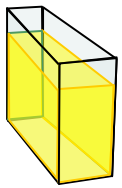
pH: 8

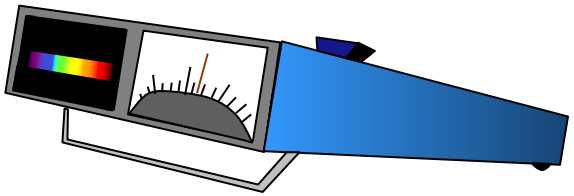


Photometeranzeige: Absorptionsspektrum

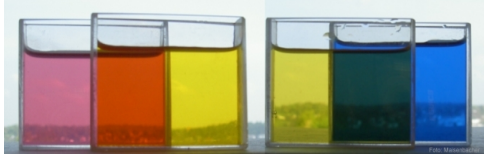


pH: 4

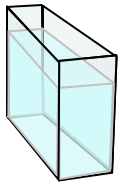




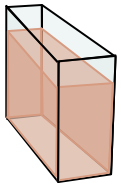
Bromthymolblaulösungen



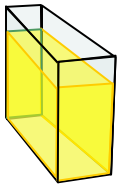
Wasser



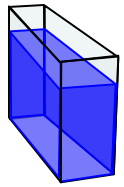
pH: 0



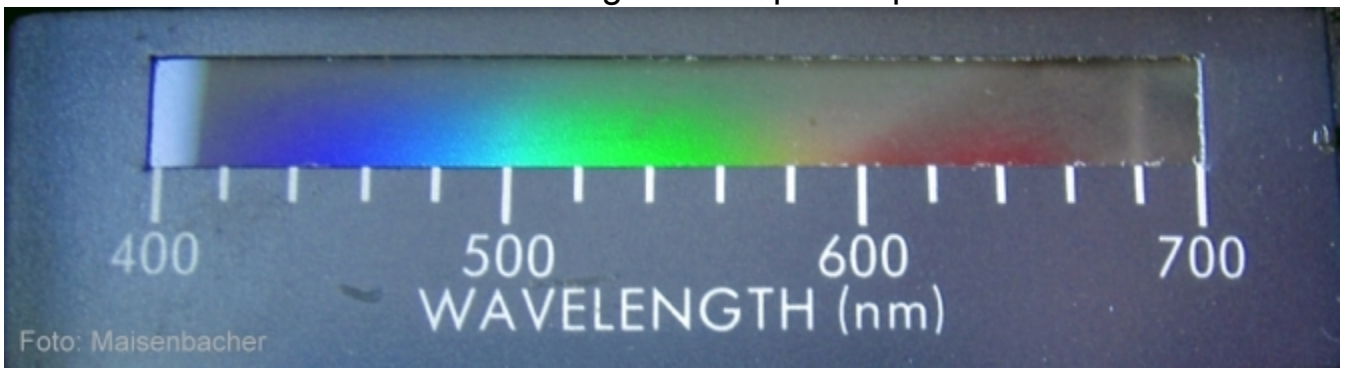
pH: 4



pH: 8



Photometeranzeige: Absorptionsspektrum



pH: 8