**Ion Chromatography (IC)**

**ion chromatography** (IC) - An ion-exchange technique in which low concentrations of anions or cations are determined using low-capacity ion exchangers with weak buffers. Conductivity detectors are often used. Ion chromatography is practiced in two forms. In suppressed IC, a second column (suppressor column) is used to remove the buffer ions so that sample ions can be more easily detected; membrane separator is sometimes used. In nonsuppressed IC, weakly conducting buffers at low concentration are carefully selected, and the entire effluent is passed through the detector; ions are detected above the background signal.

**conductivity detector** – IC device for continuous monitoring effluent conductivity.

**anion-exchange chromatography** - the ion-exchange procedure used for the separation of anions. Both resins and bonded phases are available for this mode.

**cation-exchange chromatography** - the form of ion-exchange chromatography that uses resins or packing with functional groups that can separate cations. A sulfonic acid would be an example of a strong cation-exchange group; a carboxylic acid would be a weak cation-exchange group.

**chromatographic column** - Usually stainless steel tube with polished inner surface and endfittings at both ends densely packed with small porous adsorbent

**bonded phase** - silica is traditionally the common "normal" chromatography packing material. When another material is chemically bonded to the surface of the silica, a new adsorbent with unique surface chemistry and separation properties can result. Historically this bonded molecular layer is called "bonded phase".

**mobile phase** - liquid media which continuously flows through the column and carries the analytes. Usually, in IC the mobile phase is a solvent mixture such as methanol and water for reversed phase LC, or hexane for normal phase.

**eluent** - general designation of mobile phase in chromatography.

**suppressor column** - in ion chromatography, refers to the column placed after the ion-exchange column. Its purpose is to remove or suppress the ionization of buffer ions so that sample ions can be observed in a weakly conducting background with a conductivity detector, particles.

**retention time** - time elapsed between sample introduction and maximum of response.