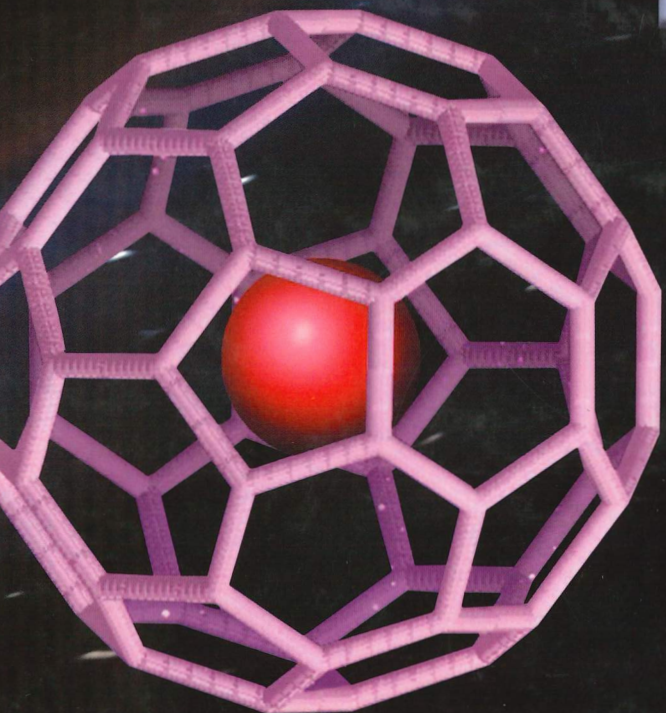


McGraw-Hill  
Dictionary



of  
**SCIENTIFIC**  
**and**  
**TECHNICAL**  
**TERMS**



**Sixth Edition**

Optronic Sciences LLC, Ex. 2013  
BOE Technology Group Co., Ltd. v. Optronic Sciences LLC, IPR2024-01133  
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**On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meteorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. (Image copyright © Dr. Luann Becker. Reproduced with permission.)**

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Procarvates*, Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology*, McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates*, 4th ed., McGraw-Hill, 2000; U.S. Air Force Glossary of Standardized Terms, AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; A *DOD Glossary of Mapping, Charting and Geodetic Terms*, Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, National Aeronautics and Space Administration, 1965; *Glossary of Stinfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology*, White Sands Missile Range, New Mexico, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

### **McGraw-Hill Dictionary of Scientific and Technical Terms, Sixth Edition**

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**capacitive tuning** [ELECTR] Tuning involving use of a variable capacitor. { kə'pas-əd-iv 'tūn-ŋ }

**capacitive window** [ELECTROMAG] Conducting diaphragm extending into a waveguide from one or both sidewalls, producing the effect of a capacitive susceptance in parallel with the waveguide. { kə'pas-əd-iv 'wɪn-dō }

**capacitor** [ELEC] A device which consists essentially of two conductors (such as parallel metal plates) insulated from each other by a dielectric and which introduces capacitance into a circuit, stores electrical energy, blocks the flow of direct current, and permits the flow of alternating current to a degree dependent on the capacitor's capacitance and the current frequency. Symbolized C. Also known as condenser; electric condenser. { kə'pas-əd-ər }

**capacitor antenna** [ELECTROMAG] Antenna consisting of two conductors or systems of conductors, the essential characteristic of which is its capacitance. Also known as condenser antenna. { kə'pas-əd-ər an'ten-ə }

**capacitor bank** [ELEC] A number of capacitors connected in series or in parallel. { kə'pas-əd-ər ,bāŋk }

**capacitor box** [ELECTR] A box-shaped structure in which a capacitor is submerged in a heat-absorbing medium, usually water. Also known as condenser box. { kə'pas-əd-ər ,bāks }

**capacitor color code** [ELEC] A method of marking the value on a capacitor by means of dots or bands of colors as specified in the Electronic Industry Association color code. { kə'pas-əd-ər 'kəl-ər ,kōd }

**capacitor hydrophone** [ENG ACOUS] A capacitor microphone that responds to waterborne sound waves. { kə'pas-əd-ər 'hɪ-drə,fōŋ }

**capacitor-input filter** [ELECTR] A power-supply filter in which a shunt capacitor is the first element after the rectifier. { kə'pas-əd-ər 'ɪn,pʊt ,fɪl-tər }

**capacitor loudspeaker** See electrostatic loudspeaker. { kə'pas-əd-ər 'laʊd,speɪk-ər }

**capacitor microphone** [ENG ACOUS] A microphone consisting essentially of a flexible metal diaphragm and a rigid metal plate that together form a two-plate air capacitor; sound waves set the diaphragm in vibration, producing capacitance variations that are converted into audio-frequency signals by a suitable amplifier circuit. Also known as condenser microphone; electrostatic microphone. { kə'pas-əd-ər 'mɪ-krə,fōŋ }

**capacitor motor** [ELEC] 1. A single-phase induction motor having a main winding connected directly to a source of alternating-current power and an auxiliary winding connected in series with a capacitor to the source of ac power. 2. See capacitor-start motor. { kə'pas-əd-ər ,mōd-ər }

**capacitor pickup** [ENG ACOUS] A phonograph pickup in which movements of the stylus in a record groove cause variations in the capacitance of the pickup. { kə'pas-əd-ər 'pɪk-əp }

**capacitor-resistor unit** See rescap. { kə'pas-əd-ər rɪ'zɪs-tər ,yʊ-nət }

**capacitor-start motor** [ELEC] A capacitor motor in which the capacitor is in the circuit only during the starting period; the capacitor and its auxiliary winding are disconnected automatically by a centrifugal switch or other device when the motor reaches a predetermined speed. Also known as capacitor motor. { kə'pas-əd-ər 'stɑrt ,mōd-ər }

**capacitor start-run motor** See permanent-split capacitor motor. { kə'pas-əd-ər 'stɑrt ,rʌn ,mōd-ər }

**capacity** [ANALY CHEM] In chromatography, a measurement used in ion-exchange systems to express the adsorption ability of the ion-exchange materials. [COMPUT SCI] See storage capacity. [ELEC] See capacitance. [SCI TECH] Volume, especially in reference to merchandise or containers thereof. { kə'pas-əd-ē }

**capacity cell** [ELEC] 1. Capacitance-type device used to measure the dielectric constants of gases, liquids, or solids. 2. Capacitance-type device used to monitor certain composition changes in flowing streams. { kə'pas-əd-ē ,sɛl }

**capacity correction** [ENG] The correction applied to a mercury barometer with a nonadjustable cistern in order to compensate for the change in the level of the cistern as the atmospheric pressure changes. { kə'pas-əd-ē kə'rek-shən }

**capacity factor** [IND ENG] The ratio of average actual use to the available capacity of an apparatus or industrial plant to

store, process, treat, manufacture, or produce. { kə'pas-əd-ē ,fak-tər }

**capacity of the wind** [GEOL] The total weight of airborne particles (soil and rock) of given size, shape, and specific gravity, which can be carried in 1 cubic mile (4.17 cubic kilometers) of wind blowing at a given speed. { kə'pas-əd-ē əv ðə 'wɪnd }

**capacity-rate product** [COMMUN] The product of the capacity of a data-storage device in gigabytes and the data rate in megabits per second. { kə'pas-əd-ē ,rāt ,präd-əkt }

**cap-binding protein** [MOL BIO] A protein that specifically recognizes the methylated cap of eukaryotic messenger ribonucleic acid (mRNA) and is essential in the regulation of mRNA translation. { ,kæp ,bɪnd-ɪŋ 'prō,tɛn }

**cap cloud** [METEOROL] An approximately stationary cloud, or standing cloud, on or hovering above an isolated mountain peak; formed by the cooling and condensation of humid air forced up over the peak. Also known as cloud cap. { 'kæp ,klaʊd }

**cap crimper** [ENG] A tool resembling a pliers that is used to press the open end of a blasting cap onto the safety fuse before placing the cap in the primer. { 'kæp ,krɪm-pər }

**cape** [GEOGR] A prominent point of land jutting into a body of water. Also known as head; headland; mull; naze; ness; point; promontory. { kæp }

**cape chisel** [DES ENG] A chisel that tapers to a flat, narrow cutting end; used to cut flat grooves. { 'kæp ,chɪz-əl }

**cape doctor** [METEOROL] The strong southeast wind which blows on the South African coast. { 'kæp ,dɔk-tər }

**cape foot** [MECH] A unit of length equal to 1.033 feet or to 0.3148584 meter. { 'kæp ,fʊt }

**Cape Horn Current** [OCEANOGR] That part of the west wind drift flowing eastward in the immediate vicinity of Cape Horn, and then curving northeastward to continue as the Falkland Current. { ,kæp ,hɔrn 'kær-ənt }

**Capella** [ASTRON] A star that is 45 light-years from the sun; spectral classification G0IIIp. Also known as  $\alpha$  Aurigae. { kə'pel-ə }

**Capell fan** [MIN ENG] A centrifugal type of mine shaft fan. { kə'pel ,fæn }

**capers** [FOOD ENG] The buds and berries of the caper plant (*Capparis spinosa*) pickled and used as a condiment. { 'kæ-pərz }

**Capgras syndrome** [PSYCH] A delusional misidentification syndrome commonly seen in schizophrenia that causes the individual to replace a familiar person (usually the spouse) with an impostor with the same or similar physical appearance. { 'kæp-græz ,sɪn,drɒm }

**capillarity** [FL MECH] The action by which the surface of a liquid where it contacts a solid is elevated or depressed, because of the relative attraction of the molecules of the liquid for each other and for those of the solid. Also known as capillary action. { ,kæp-ə'lar-əd-ē }

**capillarity correction** [ENG] As applied to a mercury barometer, that part of the instrument correction which is required by the shape of the meniscus of the mercury. { ,kæp-ə'lar-əd-ē kə'rek-shən }

**capillaroscope** [MED] A microscope used for diagnostic examination of the cutaneous capillaries, as in the nail beds and conjunctiva. { ,kæp-ə'lar-ə,skɒp }

**capillary** [ANAT] The smallest vessel of both the circulatory and lymphatic systems; the walls are composed of a single cell layer. [GEOL] A fissure or a crack in a formation which provides a route for flow of water or hydrocarbons. { 'kæp-ə,ler-ē }

**capillary action** See capillarity. { 'kæp-ə,ler-ē 'ak-shən }

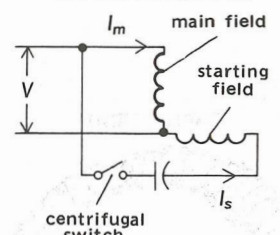
**capillary angioma** See hemangioma. { 'kæp-ə,ler-ē ,an-'jɛ-ō-mə }

**capillary attraction** [FL MECH] The force of adhesion existing between a solid and a liquid in capillarity. { 'kæp-ə,ler-ē ə'træk-shən }

**capillary bed** [ANAT] The capillaries, collectively, of a given area or organ. { 'kæp-ə,ler-ē ,bed }

**capillary collector** [ENG] An instrument for collecting liquid water from the atmosphere; the collecting head is fabricated of a porous material having a pore size of the order of 30 micrometers; the pressure difference across the water-air interface prevents air from entering the capillary system while allowing free flow of water. { 'kæp-ə,ler-ē kə'lek-tər }

### CAPACITOR MOTOR



Winding connections of the starting winding connected to the supply through a capacitor.  $I_m$  = main winding;  $I_s$  = starting winding;  $V$  = common voltage.

**electroconvulsive therapy** [PSYCH] The technique of eliciting convulsions by applying an electric current through the brain of a human or an experimental animal for a brief period by means of electrodes that are placed on the head; sometimes used as a treatment for severe mental depression. { i'lek·trō·kən'vəl·səv 'ther·ə·pē }

**electrocorticogram** [MED] The record obtained by electrocorticography. { i'lek·trō'kōrd·ə·kə·gram }

**electrocorticography** [MED] The technique of surveying the electrical activity of the cerebral cortex. { i'lek·trō'kōrd·ə'kəg·rə·fē }

**electrocratic** [CHEM] Referring to the repulsion exhibited by soap films and other colloids in solutions; such repulsion involves a strong osmotic contribution but is largely controlled by electrical forces. { i'lek·trō'krad·ik }

**electrocyclic reaction** [PHYS CHEM] The interconversion of a linear  $\pi$ -system containing  $n$   $\pi$ -electrons and a cyclic molecule containing  $(n-2)$   $\pi$ -electrons which is formed by joining the ends of the linear molecule. { i'lek·trō'si·klik rē'ak·shən }

**electrode** [ELEC] 1. An electric conductor through which an electric current enters or leaves a medium, whether it be an electrolytic solution, solid, molten mass, gas, or vacuum. 2. One of the terminals used in dielectric heating or diathermy for applying the high-frequency electric field to the material being heated. { i'lek·trōd }

**electrode admittance** [ELECTR] Quotient of dividing the alternating component of the electrode current by the alternating component of the electrode voltage, all other electrode voltages being maintained constant. { i'lek·trōd ad'mit·əns }

**electrodecentration** [PHYS CHEM] A modification of electrodialysis in which a cell is divided into three sections by two membranes and electrodes are placed in the end sections; colloidal matter is concentrated at the sides and bottom of the middle section, and the liquid that floats to the top is drawn off. { i'lek·trō'dē·kan'tā·shən }

**electrode capacitance** [ELECTR] Capacitance between one electrode and all the other electrodes connected together. { i'lek·trōd kə'pas·əd·əns }

**electrode characteristic** [ELECTR] Relation between the electrode voltage and the current to an electrode, all other electrode voltages being maintained constant. { i'lek·trōd ,kə'rik·tə'ris·tik }

**electrode conductance** [ELECTR] Quotient of the inphase component of the electrode alternating current by the electrode alternating voltage, all other electrode voltage being maintained constant; this is a variational and not a total conductance. Also known as grid conductance. { i'lek·trōd kən'dak·təns }

**electrode couple** [ELEC] The pair of electrodes in an electric cell, between which there is a potential difference. { i'lek·trōd ,kə·pəl }

**electrode current** [ELECTR] Current passing to or from an electrode, through the interelectrode space within a vacuum tube. { i'lek·trōd ,kə·rənt }

**electrode dark current** [ELECTR] The electrode current that flows when there is no radiant flux incident on the photocathode in a phototube or camera tube. Also known as dark current. { i'lek·trōd 'därk 'kə·rənt }

**electrode dissipation** [ELECTR] Power dissipated in the form of heat by an electrode as a result of electron or ion bombardment. { i'lek·trōd ,dis·ə'pā·shən }

**electrode drop** [ELECTR] Voltage drop in the electrode due to its resistance. { i'lek·trōd ,drāp }

**electrode efficiency** [PHYS CHEM] The ratio of the amount of metal actually deposited in an electrolytic cell to the amount that could theoretically be deposited as a result of electricity passing through the cell. { i'lek·trōd ə'fish·ən·sē }

**electrode force** [MET] The force that occurs between electrodes during seam, spot, and projection welding. Also known as welding force. { i'lek·trōd ,fōrs }

**electrode impedance** [ELECTR] Reciprocal of the electrode admittance. { i'lek·trōd im'ped·əns }

**electrode inverse current** [ELECTR] Current flowing through an electrode in the direction opposite to that for which the tube is designed. { i'lek·trōd 'in·vərs ,kə·rənt }

**electrodeless discharge** [ELECTR] An electric discharge generated by placing a discharge tube in a strong, high-frequency electromagnetic field. { i'lek·trōd·ləs 'dis·chàrj }

**electrodeless lamp** [ELECTR] A lamp based on an electrodeless discharge. { i'lek·trōd·ləs 'lamp }

**electrodeposition** [MET] Electrolytic process in which a metal is deposited at the cathode from a solution of its ions, includes electroplating and electroforming. Also known as electrolytic deposition. { i'lek·trō·dep·ə'zish·ən }

**electrodeposition analysis** [ANALY CHEM] An electrolytic technique in which an element is quantitatively deposited on an electrode. { i'lek·trō·dep·ə'zish·ən ə'nal·ə·səs }

**electrode potential** Also known as electrode voltage. [ELECTR] The instantaneous voltage of an electrode with respect to the cathode of an electron tube. [PHYS CHEM] The voltage existing between an electrode and the solution or electrolyte in which it is immersed; usually, electrode potentials are referred to a standard electrode, such as the hydrogen electrode. { i'lek·trōd pə'ten·chəl }

**electrode resistance** [ELECTR] Reciprocal of the electrode conductance; this is the effective parallel resistance and is not the real component of the electrode impedance. { i'lek·trōd ri'zistəns }

**electrodermal response** See galvanic skin response. { i'lek·trō'dərm·əl ri'spāns }

**electrodermography** [MED] The recording of the electrical resistance of the skin. { i'lek·trō'dər'māg·rə·fē }

**electrodesiccation** [MED] The use of a single terminal electrode with a small sparking distance to destroy lesions or seal off blood vessels. { i'lek·trō·des·ə'kā·shən }

**electrode skid** [MET] Sliding of an electrode over the work surface in spot, seam, or projection welding. { i'lek·trōd ,skid }

**electrode-type liquid-level meter** [ENG] Device that senses liquid level by the effect of the liquid-gas interface on the conductance of an electrode or probe. { i'lek·trōd ,tīp ,lik·wəd 'lev·əl 'mēd·ər }

**electrode voltage** See electrode potential. { i'lek·trōd ,vōltij }

**electrodiagnosis** [MED] Diagnosis of disease states by recording the spontaneous electrical activity of tissue or organs, or by the response to stimulation of electrically excitable tissue. { i'lek·trō·dī·əg'nō·səs }

**electrodialysis** [PHYS CHEM] Dialysis that is conducted with the aid of an electromotive force applied to electrodes adjacent to both sides of the membrane. { i'lek·trō·dī·əl·ə·səs }

**electrodialyzer** [PHYS CHEM] An instrument used to conduct electrodialysis. { i'lek·trō·dī·ə·līz·ər }

**electrodisintegration** [NUC PHYS] The breakup of a nucleus into two or more fragments as a result of bombardment by electrons. { i'lek·trō·dis·int·ə'grā·shən }

**electrodrill** [MECH ENG] A drilling machine driven by electric power. { i'lek·trō·dril }

**electrodynamic ammeter** [ENG] Instrument which measures the current passing through a fixed coil and a movable coil connected in series by balancing the torque on the movable coil (resulting from the magnetic field of the fixed coil) against that of a spiral spring. { i'lek·trō·dī·nam·ik 'a,mēd·ər }

**electrodynamic drift** [GEOPHYS] Motion of charged particles in the upper atmosphere due to the combined effect of electric and magnetic fields; in the ionospheric F region and above, the drift velocity is perpendicular to both the electric and magnetic fields. { i'lek·trō·dī·nam·ik 'drift }

**electrodynamic instrument** [ENG] An instrument that depends for its operation on the reaction between the current in one or more movable coils and the current in one or more fixed coils. Also known as electrodynamicometer. { i'lek·trō·dī·nam·ik 'in·strə·mənt }

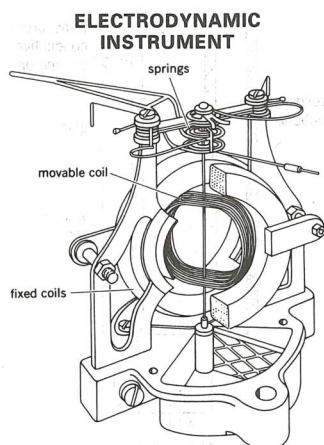
**electrodynamic loudspeaker** [ENG ACOUS] Dynamic loudspeaker in which the magnetic field is produced by an electromagnet, called the field coil, to which a direct current must be furnished. { i'lek·trō·dī·nam·ik 'ləud·spēk·ər }

**electrodynamic machine** [ELEC] An electric generator or motor in which the output load current is produced by magnetomotive currents generated in a rotating armature. { i'lek·trō·dī·nam·ik mə'shēn }

**electrodynamics** [ELECTROMAG] The study of the relations between electrical, magnetic, and mechanical phenomena. { i'lek·trō·dī·nam·iks }

**electrodynamic shaker** See shaker. { i'lek·trō·dī·nam·ik 'shāk·ər }

**electrodynamic wattmeter** [ENG] An electrodynamic instrument connected as a wattmeter with the main current



Electrodynamic instrument mechanism. (Weston Instruments, Division of Sangamo Weston, Inc.)