

McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

Sixth Edition

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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.)

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**McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS,
Sixth Edition**

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extraordinary components of normally incident light emerge from it with a phase difference corresponding to an odd number of half wavelengths. { 'haf 'wäv 'plät }

half-wave rectification [ELECTR] Rectification in which current flows only during alternate half cycles. { 'haf 'wäv 'rek-tə-tō 'kă-shən }

half-wave rectifier [ELECTR] A rectifier that provides half-wave rectification. { 'haf 'wäv 'rek-tə-fī-ər }

half-wave transmission line [ELECTROMAG] Transmission line which has an electrical length equal to one-half the wavelength of the signal being transmitted or received. { 'haf 'wäv 'tranz'mish-ən 'līn }

half-wave vibrator [ELEC] A vibrator having only one pair of contacts; interrupts the flow of direct current through the primary of a power transformer, but does not reverse the current. { 'haf 'wäv 'vī-brād-ər }

half-width [MATH] For a function which has a maximum and falls off rapidly on either side of the maximum, the difference between the two values of the independent variable for which the dependent variable has one-half its maximum value. { 'haf 'widθ }

half-word I/O buffer [COMPUT SCI] A buffer, the upper half being used to store the upper half of a word for both input and output characters, the lower half of the buffer being used for purposes such as the storage of constants. { 'haf 'wörd 'fī-ō 'baf-ər }

halibut [VERT ZOO] Either of two large species of flatfishes in the genus *Hippoglossus*; commonly known as a right-eye flounder. { 'hal-ə-bət }

halibut liver oil [MATER] Fishy-tasting oil, pale yellow to dark red, with slightly fishy smell; soluble in alcohol, ether, chloroform, and carbon disulfide, insoluble in water; derived from halibut livers; used as medicine, as vitamin A and D source, and to dress leather. { 'hal-ə-bət 'līv-ər 'ōil }

Halichondrida [INV ZOO] A small order of sponges in the class Demospongiae with a skeleton of diactinal or monactinal, siliceous megascleres (or both), a skinlike dermis, and small amounts of spongin. { 'hal-ə-kān-drē-də }

Halictidae [INV ZOO] The halictid and sweat bees, a family of hymenopteran insects in the superfamily Apoidea. { 'hə'lik-tə-dē }

halide [CHEM] A compound of the type MX, where X is fluorine, chlorine, iodine, bromine, or astatine, and M is another element or organic radical. { 'ha,līd }

Halimeda [BOT] A genus of small, bushy green algae in the family Codiaceae composed of thick, leaflike segments; important as a fossil and as a limestone builder. { 'hal-ə-mē-də }

Halimond tube [MIN ENG] A miniature pneumatic flotation cell used for examination of small ore samples under closely controllable conditions. { 'hal-ə-mənd 'tūb }

Halitids [INV ZOO] A genus of gastropod mollusks commonly known as the abalones. { 'hal-ē-ōd-əs }

Halipidae [INV ZOO] The crawling water beetles, a family of coleopteran insects in the suborder Adephaga. { 'hə'lip-lə-dē }

halite [MINERAL] NaCl Native salt; an evaporite mineral occurring as isometric crystals or in massive, granular, or compact form. Also known as common salt; rock salt. { 'ha,līt }

Halitheriinae [PALEON] A subfamily of extinct sirenian mammals in the family Dugongidae. { 'hə,lith-ə-rī-ə-nē }

Hall accelerator [PL PHYS] A plasma accelerator based on the Hall effect. { 'həl ak'sel-ə-rād-ər }

Hall angle [ELECTROMAG] The electric field, resulting from the Hall effect, perpendicular to a current, divided by the electric field generating the current. { 'həl ,aŋ-gəl }

Hall coefficient [ELECTROMAG] A measure of the Hall effect, equal to the transverse electric field (Hall field) divided by the product of the current density and the magnetic induction. Also known as Hall constant. { 'həl ,kō-ē'fīsh-ənt }

Hall constant See Hall coefficient. { 'həl ,kän-stənt }

Hall cyclic thermal reforming [CHEM ENG] A gas-making process that uses component parts of carbureted-water gas apparatus to generate high-Btu gas from feedstocks ranging from naphtha to Bunker C. { 'həl 'st-klik 'thər-məl rē'fōr-mīŋ }

Hall effect [ELECTROMAG] The development of a transverse electric field in a current-carrying conductor placed in a magnetic field; ordinarily the conductor is positioned so that the magnetic field is perpendicular to the direction of current flow and the electric field is perpendicular to both. { 'həl i,fekt }

Hall-effect gaussmeter [ENG] A gaussmeter that consists of a thin piece of silicon or other semiconductor material which is inserted between the poles of a magnet to measure the magnetic field strength by means of the Hall effect. { 'həl i,fekt 'gaūs,mēd-ər }

Hall-effect isolator [ELECTROMAG] An isolator that makes use of the Hall effect in a semiconductor plate mounted in a magnetic field, to provide greater loss in one direction of signal travel through a waveguide than in the other direction. { 'həl i,fekt 'T-sə,lād-ər }

Hall-effect modulator [ELECTR] A Hall-effect multiplier used as a modulator to give an output voltage that is proportional to the product of two input voltages or currents. { 'həl i,fekt 'māj-ə,lād-ər }

Hall-effect multiplier [ELECTR] A multiplier based on the Hall effect, used in analog computers to solve such problems as finding the square root of the sum of the squares of three independent variables. { 'həl i,fekt 'māl-tə-plī-ər }

Hall-effect switch [ELECTR] A magnetically activated switch that uses a Hall generator, trigger circuit, and transistor amplifier on a silicon chip. { 'həl i,fekt ,swīch }

Haller's organ [INV ZOO] A chemoreceptor on the tarsus of certain ticks. { 'hal-ərz ,ōr-gən }

Hallett table [MIN ENG] A Wilfley-type concentrating table having the tops of the riffles in the same plane as the cleaning planes, and riffles inclined toward the waste water side. { 'hal-ət ,tā-bəl }

Halley's Comet [ASTRON] A member of the solar system, with an orbit and a period of about 76 years; its nucleus is about 9 miles (15 kilometers) in diameter; next due to appear in 2061. Also known as Comet Halley. { 'hal-ēz ,kām-ət }

Hall generator [ELECTROMAG] A generator using the Hall effect to give an output voltage proportional to magnetic field strength. { 'həl 'jen-ə,rād-ər }

Hallian [GEOL] A North American stage of Pleistocene geologic time, above the Wheelerian and below the Recent. { 'həl-ē-ən }

haliard See halyard. { 'hal-yard }

Hallinger shield [MIN ENG] A tunneling shield valuable for working in very soft ground; incorporates a mechanical excavator and does not entail the use of timbering to protect the miners. { 'hal-in-jər ,shēld }

Hall mobility [SOLID STATE] The product of conductivity and the Hall constant for a conductor or semiconductor; a measure of the mobility of the electrons or holes in a semiconductor. { 'həl mō'bīl-əd-ē }

halloysite [MINERAL] $Al_2Si_2O_5(OH)_4 \cdot 2H_2O$ Porcelainlike clay mineral whose composition is like that of kaolinite but contains more water and is structurally distinct; varieties are known as metahalloysites. { 'hə'lōi,sīt }

Hall plasma thruster [AERO ENG] A type of electromagnetic propulsion system in which electrons drawn through an annular discharge chamber feel the effect of a radial magnetic field between the central and outside pole pieces bounding the discharge region, and thereby follow azimuthal cyclotron (Hall-effect) trajectories that increase the probability that they will have ionizing collisions with propellant atoms; the positive ions produced in these collisions are accelerated downstream, thereby producing thrust. { 'həl 'plaz-mə ,thrəst-ər }

Hall-plate device [ENG] A sensor that uses the Hall effect to measure magnetic field strength. { 'həl 'plāt dī,vīs }

Hall process [MET] An electrolytic recovery process for aluminum employing a fused-bauxite (aluminum oxide), cryolite electrolyte. { 'həl ,prə'səs }

Hall resistance [ELECTR] The ratio of the transverse voltage developed across a current-carrying conductor, due to the Hall effect, to the current itself. { 'həl rī,zis-təns }

Hall's theorem See marriage theorem. { 'həlz ,thir-əm }

hallucination [PSYCH] A perception without an appropriate stimulus. { 'hə,lūs-ən'ā-shən }

hallucinogen [PHARM] A substance, such as LSD, that induces hallucinations. { 'hə'lūs-ən-ə-jən }

hallucinogenic [PHARM] Of or pertaining to a hallucinogen. [PSYCH] Referring to any stimulus that creates the impression of experiencing a hallucination. { 'hə,lūs-ən-ə-jen-ik }

hallucinoses [PSYCH] The condition of being possessed by more or less persistent hallucinations, especially while fully conscious. { 'hə,lūs-ən'ō-səs }

bearing metals, and as an atomic-pile neutron indicator. { 'in-dē-əm }

indium antimonide [INORG CHEM] InSb Crystals that melt at 535°C; an intermetallic compound having semiconductor properties and the highest room-temperature electron mobility of any known material; used in Hall-effect and magnetoresistive devices and as an infrared detector. { 'in-dē-əm ,an-tim-ə-nid }

indium arsenide [INORG CHEM] InAs Metallic crystals that melt at 943°C; an intermetallic compound having semiconductor properties; used in Hall-effect devices. { 'in-dē-əm 'ār-sən-id }

indium chloride [INORG CHEM] InCl₃ Hygroscopic white powder, soluble in water and alcohol. { 'in-dē-əm 'klôr-id }

indium phosphide [INORG CHEM] InP A metallic mass that is brittle and melts at 1070°C; an intermetallic compound having semiconductor properties. { 'in-dē-əm 'fäs-id }

indium sulfate [INORG CHEM] In₂(SO₄)₃ Deliquescent, water-soluble, grayish powder; decomposes when heated. { 'in-dē-əm 'səl-fāt }

individual distributed numerical control [CONT SYS] A form of distributed numerical control involving only a few machines, each of which operates independently of the others and is unaffected by their failures. { 'in-də'vij-ə-wəl dī'strib-yəd-əd nū'mer-ə-kəl kən'trōl }

individual line [COMMUN] Subscriber line arranged to serve only one main station, although additional stations may be connected to the line as extensions; an individual line is not arranged for discriminatory ringing with respect to the stations on that line. { 'in-də'vij-ə-wəl 'līn }

individual psychology [PSYCH] A system of psychology in which traits of an individual are compared in terms of striving for superiority and then restated in the form of a composite of this single tendency. { 'in-də'vij-ə-wəl sī'käl-ə-jē }

individuation [EMBRYO] The process whereby, through induction, a spatially organized tissue, organ, or embryo develops. { 'in-dī-vij-ə-wā-shən }

indogen [ORG CHEM] The functional group C₆H₄-(NH)COC=; it occurs, for example, in the molecule indigo. { 'in-də-jən }

indogenide [ORG CHEM] A compound containing the function group C₆H₄(NH)·CO·C= from indogen. { 'in-də-jə-nid }

indole Also known as 2,3-benzopyrrole. [BIOCHEM] C₈H₇N A decomposition product of tryptophan formed in the intestine during putrefaction and by certain cultures of bacteria. [ORG CHEM] Carcinogenic, white to yellowish scales with unpleasant aroma; soluble in alcohol, ether, hot water, and fixed oils; melt at 52°C; used as a chemical reagent and in perfumery and medicine. { 'in-dōl }

indoleacetic acid [BIOCHEM] C₁₀H₉O₂N A decomposition product of tryptophan produced by bacteria and occurring in urine and feces; used as a hormone to promote plant growth. Abbreviated IAA. { 'in-dōl-ə'sēd-ik 'as-əd }

indolebutyric acid [ORG CHEM] C₁₂H₁₃O₂N A crystalline acid similar to indoleacetic acid in auxin activity. Abbreviated IBA. { 'in-dōl-byū'tir-ik 'as-əd }

indolent [MED] 1. Of or relating to a slow-growing, non-painful neoplasm. 2. Slowness in the process of healing. { 'in-də-lənt }

indole test [MICROBIO] A test for the production of indole from tryptophan by microorganisms; a solution of *para*-dimethylaminobenzaldehyde, amyl alcohol, and hydrochloric acid added to the incubated culture of bacteria shows a red color in the alcoholic layer if indole is present. { 'in-dōl ,test }

Indo-Pacific faunal region [ECOL] A marine littoral faunal region extending eastward from the east coast of Africa, passing north of Australia and south of Japan, and ending in the east Pacific south of Alaska. { 'in-dō-pə'sif-ik 'fōn-əl ,rē-jən }

indoxyl [ORG CHEM] (C₈H₇N)OH A yellow crystalline glycoside, used as an intermediate in the manufacture of indigo. { 'in-dāk-səl }

Indridae [VERT ZOO] A family of Madagascan prosimians containing wholly arboreal vertical clingers and leapers. { 'in-dri-ə,dē }

induced angle of attack [AERO ENG] The downward vertical angle between the horizontal and the velocity (relative to the wing of an aircraft) of the airstream passing over the wing. { 'in-düst 'aŋ-gəl əv ə'tak }

induced anisotropy [SOLID STATE] A type of uniaxial anisotropy in a magnetic material produced by annealing the magnetic material in a magnetic field. { 'in-düst ,an-ə'sä-trə-pē }

induced capacity See absolute permeability. { 'in-düst kə'pas-əd-ē }

induced current [ELECTROMAG] A current produced in a conductor by a time-varying magnetic field, as in induction heating. { 'in-düst 'kə-rənt }

Induced dipole [ELEC] An electric dipole produced by application of an electric field. { 'in-düst 'dī,pōl }

Induced angle of attack [AERO ENG] The downward vertical angle between the horizontal and the velocity (relative to the wing of an aircraft) of the airstream passing over the wing. { 'in-düst 'aŋ-gəl əv ə'tak }

induced draft [MECH ENG] A mechanical draft produced by suction stream jets or fans at the point where air or gases leave a unit. { 'in-düst 'draft }

induced-draft cooling tower [MECH ENG] A structure for cooling water by circulating air where the load is on the suction side of the fan. { 'in-düst 'draft 'kūl-ŋ ,taū-ər }

Induced drag [FL MECH] That part of the drag caused by the downflow or downwash of the airstream passing over the wing of an aircraft, equal to the lift times the tangent of the induced angle of attack. { 'in-düst 'drag }

Induced electromotive force [ELECTROMAG] An electromotive force resulting from the motion of a conductor through a magnetic field, or from a change in the magnetic flux that threads a conductor. { 'in-düst 1,lek-trə'mōd-iv 'fōrs }

induced emission See stimulated emission. { 'in-düst i'mish-ən }

induced fission [NUC PHYS] Fission which takes place only when a nucleus is bombarded with neutrons, gamma rays, or other carriers of energy. { 'in-düst 'fish-ən }

induced magnetism [ELECTROMAG] The magnetism acquired by magnetic material while it is in a magnetic field. { 'in-düst 'mag-nə,tiz-əm }

induced magnetization [GEOPHYS] That component of a rock's magnetization which is proportional to, and has the same direction as, the ambient magnetic field. { 'in-düst ,mag-nə-tə'zā-shən }

induced moment [ELEC] The average electric dipole moment per molecule which is produced by the action of an electric field on a dielectric substance. { 'in-düst 'mō-mənt }

induced movement [PSYCH] The perceived movement of a stationary object when its frame of reference moves. { 'in-düst 'mūv-mənt }

induced orientation [MATH] An orientation of a face of a simplex *S* opposite a vertex *p_i* obtained by deleting *p_i* from the ordering defining the orientation of *S*. { 'in-düst ,or-ē-ən'tā-shən }

induced potential See induced voltage. { 'in-düst pə'ten- chəl }

induced precession See real precession. { 'in-düst pri'sesh-ən }

induced radioactivity [NUCLEO] Radioactivity created by bombarding a substance with radiation. Also known as artificial radioactivity. { 'in-düst ,rād-ē-ō-ak'tiv-əd-ē }

induced subgraph See vertex-induced subgraph. { 'in-düst 'səb-graf }

induced voltage [ELECTROMAG] A voltage produced by electromagnetic or electrostatic induction. Also known as induced potential. { 'in-düst 'vōl-tij }

inducer [EMBRYO] The cell group that functions as the acting system in embryonic induction by controlling the mode of development of the reacting system. Also known as inductor. { 'in-dü-sər }

inducible enzyme [BIOCHEM] An enzyme which is present in trace quantities within a cell but whose concentration increases dramatically in the presence of substrate molecules. { 'in-dü-sə-bəl 'en,zīm }

inductance [ELECTROMAG] 1. That property of an electric circuit or of two neighboring circuits whereby an electromotive force is generated (by the process of electromagnetic induction) in one circuit by a change of current in itself or in the other. 2. Quantitatively, the ratio of the emf (electromotive force) to the rate of change of the current. 3. See coil. { 'in-dək-təns }

are changed to vary the voltage or phase relations in the circuit. { in'dak-shən 'völ-tij ,reg-yä,läd-ər }

induction watt-hour meter [ELEC] A watt-hour meter used with alternating current; the energy taken by a circuit over a period of time is proportional to the rotation in that period of a light aluminum disk, in which a driving torque is developed by the joint action of the alternating magnetic flux produced by the potential circuit and by the load current. { in'dak-shən 'wät,äur ,mäd-ər }

induction welding [MET] A process of welding by means of heat generated within the work by induced electric currents. { in'dak-shən 'weld-ij }

inductive capacities [ELECTROMAG] The permeability and permittivity of a substance. { in'dak-tiv kə'pas-əd-ēz }

inductive charge [ELEC] The charge that exists on an object as a result of its being near another charged object. { in'dak-tiv 'chärj }

inductive circuit [ELEC] A circuit containing a higher value of inductive reactance than capacitive reactance. { in'dak-tiv 'sär-kət }

inductive coordination [ELECTROMAG] Measures to reduce induction problems. { in'dak-tiv kō,örd-ən'ä-shən }

inductive coupler [ELEC] A mutual inductance that provides electrical coupling between two circuits; used in radio equipment. { in'dak-tiv 'kəp-lər }

inductive coupling [ELEC] Coupling of two circuits by means of the mutual inductance provided by a transformer. Also known as transformer coupling. { in'dak-tiv 'kəp-liŋ }

inductive divider [ELECTROMAG] A device for incorporating a desired fraction of an inductance into a circuit, usually consisting of an autotransformer with an intermediate tap. { in'dak-tiv di'vid-ər }

inductive effect [PHYS CHEM] In a molecule, a shift of electron density due to the polarization of a bond by a nearby electronegative or electropositive atom. { in'dak-tiv ə'fekt }

inductive fault analysis [ELECTR] A method of analyzing the effects of defects on an integrated circuit, in which a computer simulates an electron that scatters at random faults in the form of additional or missing areas of material on the set of drawings of the masks from which the circuits are fabricated. { in'dak-tiv 'fölt ə,näl-ə-səs }

inductive feedback [ELECTR] 1. Transfer of energy from the plate circuit to the grid circuit of a vacuum tube by means of induction. 2. Transfer of energy from the output circuit to the input circuit of an amplifying device through an inductor, or by means of inductive coupling. { in'dak-tiv 'fēd-bak }

inductive filter [ELECTR] A low-pass filter used for smoothing the direct-current output voltage of a rectifier; consists of one or more sections in series, each section consisting of an inductor on one of the pair of conductors in series with a capacitor between the conductors. Also known as LC filter. { in'dak-tiv 'fil-tər }

inductive grounding [ELEC] Use of grounding connections containing an inductance in order to reduce the magnitude of short-circuit currents created by line-to-ground faults. { in'dak-tiv 'gräund-ij }

inductive interference [COMMUN] Effect arising from the characteristics and inductive relations of electric supply and communications systems of such character and magnitude as would prevent the communications circuits from rendering service satisfactorily and economically if methods of inductive coordination were not applied. { in'dak-tiv ,in-tər'fir-əns }

inductive line pair [COMMUN] A telephone line displaying induction whose effects are of consequence, as in crosstalk; opposed to twisted pair. { in'dak-tiv 'līn ,pər }

inductive load [ELEC] A load that is predominantly inductive, so that the alternating load current lags behind the alternating voltage of the load. Also known as lagging load. { in'dak-tiv 'löd }

inductively coupled plasma-atomic emission spectroscopy [SPECT] A type of atomic spectroscopy in which the light emitted by atoms and ions in an inductively coupled plasma is observed. Abbreviated ICP-AES. { in'dak-tiv-lē 'kəp-äld 'plaz-mə ə'täm-ik i'mish-ən spek'träs-kə-pē }

inductively coupled plasma discharge [PL PHYS] A high-temperature (8000–10,000 K) discharge generated by inducing a magnetic field in a flowing conducting gas, usually argon or argon and nitrogen, by means of a water-cooled copper coil

which surrounds tubes through which the gas flows. { in'dak-tiv-lē 'kəp-äld 'plaz-mə 'dis,čärj }

inductive neutralization [ELECTR] Neutralizing an amplifier whereby the feedback susceptance due to an interelement capacitance is canceled by the equal and opposite susceptance of an inductor. Also known as coil neutralization; shunt neutralization. { in'dak-tiv ,nü-trə-lä'zä-shən }

inductive-output tube [ELECTR] A tube in which output energy is obtained from the electron stream by electric induction between a cylindrical output electrode and the electron stream that flows through but does not touch the electrode. { in'dak-tiv 'äut,püt ,tüb }

inductive post [ELECTROMAG] Metal post or screw extending across a waveguide parallel to the *E* field, to add inductive susceptance in parallel with the waveguide for tuning or matching purposes. { in'dak-tiv 'pöst }

inductive pressure transducer [ELECTROMAG] A type of pressure transducer in which changes in pressure cause a bourdon tube or other pressure-sensing element to move a magnetic core, and this results in a change in inductance of one or more windings of a coil surrounding the core. { in'dak-tiv 'pres-ər tranz,dü-sər }

inductive reactance [ELEC] Reactance due to the inductance of a coil or circuit. { in'dak-tiv rē'ak-təns }

inductive relay [ELECTROMAG] A relay displaying inductance, as opposed to one wound to be noninductive. { in'dak-tiv 'rē,lä }

inductive spacing [ELECTROMAG] Spacing of parallel transmission lines so that there is transfer of energy by mutual inductance. { in'dak-tiv 'späs-ij }

inductive superconducting fault-current limiter See shielded-core superconducting fault-current limiter. { in'dak-tiv ,sü-pər-kən'dak-tiv 'fölt ,cor-ənt ,līm-əd-ər }

inductive surge [ELECTROMAG] A surge in voltage caused by sudden interruption of current in an inductive circuit. { in'dak-tiv 'sərj }

inductive susceptance [ELEC] In a circuit containing almost no resistance, the part of the susceptance due to inductance. { in'dak-tiv sə'sep-təns }

inductive tuning [ELECTR] Tuning involving the use of a variable inductance. { in'dak-tiv 'tün-ij }

inductive voltage divider [ELEC] An autotransformer that has its winding subdivided into 10 equal turn sections so that when an alternating voltage *V* is applied to the whole winding the voltage across each section is nominally *V*/10; used as a ratio standard for electrical measurements. { in'dak-tiv 'völ-tij di,vid-ər }

inductive waveform [ELEC] A graph or trace of the effect of current buildup across an inductive network; proportional to the exponential of the product of a negative constant and the time. { in'dak-tiv 'wāv,fōrm }

inductive window [ELECTROMAG] Conducting diaphragm extending into a waveguide from one or both sidewalls of the waveguide, to give the effect of an inductive susceptance in parallel with the waveguide. { in'dak-tiv 'win,dō }

inductometer [ELECTROMAG] A coil of wire of known inductance; the inductance may be fixed as in the case of primary standards, adjustable by means of switches, or continuously variable by means of a movable-coil construction. { in'dak'täm-əd-ər }

inductor See coil; inducer. { in'dak-tər }

inductor alternator [ELEC] A synchronous generator in which the field winding is fixed in magnetic position relative to the armature conductors. { in'dak-tər 'öl-tər,näd-ər }

inductor generator [ELEC] An alternating-current generator in which all the windings are fixed, and the flux linkages are varied by rotating an appropriately toothed ferromagnetic rotor; sometimes used for generating high power at frequencies up to several thousand hertz for induction heating. { in'dak-tər 'jen-ə,räd-ər }

inductor microphone [ENG ACOUS] Moving-conductor microphone in which the moving element is in the form of a straight-line conductor. { in'dak-tər 'mī-krə,fōn }

inductor tachometer [ENG] A type of impulse tachometer in which the rotating member, consisting of a magnetic material, causes the magnetic flux threading a circuit containing a magnet and a pickup coil to rise and fall, producing pulses in the circuit which are rectified for a permanent-magnet, movable-coil instrument. { in'dak-tar tə'kām-əd-ər }

inductosyn [CONT SYS] A resolver whose output phase is proportional to the shaft angle. { in'dak-tə'sin }

Inductrack [ENG] A magnetic levitation concept for trains and other moving objects that uses special arrays of permanent magnets to achieve levitation forces, and is inherently stable. { in'dak-trak }

inductura [INV ZOO] A layer of lamellar shell material along the inner lip of the aperture in gastropods. { in'dak-chə-rə }

indumentum [BOT] A covering, such as one that is woolly. [MYCOL] A covering of hairs. [VERT ZOO] The plumage covering a bird. { in-də'men-təm }

induplicate [BOT] Having the edges turned or rolled inward without twisting or overlapping; applied to the leaves of a bud. { in'dū-plə-kət }

induration [BIOL] The process of hardening, especially by increasing the fibrous elements. [GEOL] 1. The hardening of a rock material by the application of heat or pressure or by the introduction of a cementing material. 2. A hardened mass formed by such processes. 3. The hardening of a soil horizon by chemical action to form a hardpan. [MED] Hardening of a tissue or organ due to an accumulation of blood, inflammation, or neoplastic growth. { in-də'rā-shən }

Indus [ASTRON] A constellation, right ascension 21 hours, declination 55° south. Also known as Indian. { 'in-dəs }

Indusium [ANAT] A covering membrane such as the amnion. [BOT] An epidermal outgrowth covering the sori in many ferns. [MYCOL] The annulus of certain fungi. { in'dū-zē-əm }

Industrial alcohol [ORG CHEM] Ethyl alcohol that has been denatured by acetates, ketones, gasoline, or other additives to make it unfit for beverage purposes. { in'das-trē-əl 'al-kə'həl }

Industrial anthropometry [IND ENG] Application of the knowledge of physical anthropology to the design and construction of equipment for human use, such as automobiles. { in'das-trē-əl 'an-thrə'pām-ə-trē }

Industrial car [IND ENG] Any of various narrow-gage railcars used for indoor or outdoor handling of bulk and package materials. { in'das-trē-əl 'kār }

Industrial climatology [CLIMATOL] A type of applied climatology which studies the effect of climate and weather on industry's operations; the goal is to provide industry with a sound statistical basis for all administrative and operational decisions which involve a weather factor. { in'das-trē-əl ,klīm-ə'täl-ə-jē }

Industrial cost control [IND ENG] A specific system or procedure used to keep manufacturing costs in line. Also known as cost control. { in'das-trē-əl 'kóst kan-tról }

Industrial crop [AGR] Any crop that provides materials for industrial processes and products such as soybeans, cotton (lint and seed), flax, and tobacco. { in'das-trē-əl 'kräp }

Industrial diamond [MINERAL] Diamond that is too hard or too radial-grained to be used for jewel cutting. { in'das-trē-əl 'dī-mənd }

Industrial ecology [IND ENG] The development and use of industrial processes that result in products based on simultaneous consideration of product functionality and competitiveness, natural-resource conservation, and environmental preservation. Also known as design for environment; green design. [SYS ENG] The multidisciplinary study of industrial and economic systems and their linkages with fundamental natural systems. { in'das-trē-əl ə'käl-ə-jē }

Industrial engineering [ENG] A branch of engineering concerned with the design, improvement, and installation of integrated systems of people, materials, and equipment. Also known as management engineering. { in'das-trē-əl ,en-jä'nir-ig }

Industrial frequency bands [COMMUN] The radio-frequency bands allocated in the United States for land mobile communications of private industries other than transportation. { in'das-trē-əl 'frē-kwən-sē ,bantz }

Industrial geography [GEOGR] A branch of geography that

deals with location, raw materials, products, and distribution, as influenced by geography. { in'das-trē-əl jē'äg-rə-fē }

Industrial glass [MATER] Any glass molded into shapes for product parts, for example, lime glass and lead glass. { in'das-trē-əl 'glas }

Industrial hygiene [MED] The science that deals with the anticipation and control of unhealthy conditions in workplaces in order to prevent illness among employees. { in'das-trē-əl 'hijēn }

Industrial jewel [MINERAL] A hard stone, such as ruby or sapphire, used for bearings and impulse pins in instruments and for recording needles. { in'das-trē-əl 'jül }

Industrial meteorology [METEOROL] The application of meteorological information and techniques to industrial problems. { in'das-trē-əl ,mē-dē-ə'räl-ə-jē }

Industrial microbiology [MICROBIO] The study, utilization, and manipulation of those microorganisms capable of economically producing desirable substances or changes in substances, and the control of undesirable microorganisms. { in'das-trē-əl ,mī-krō-bī'äl-ə-jē }

Industrial microorganism [MICROBIO] Any microorganism utilized for industrial microbiology. { in'das-trē-əl ,mī-krō'ör-gə,niz-əm }

Industrial mobilization [IND ENG] Transformation of industry and other productive facilities and contributory services from their peacetime activities to the fulfillment of the munitions program necessary to support a military effort. { in'das-trē-əl ,mō-bä-lä'zā-shən }

Industrial psychology [PSYCH] Psychology applied to problems in industry, dealing chiefly with the selection, efficiency, and mental health of personnel. { in'das-trē-əl sī'käl-ə-jē }

Industrial railway [IND ENG] 1. A usually short feeder line that is either owned or controlled and wholly operated by an industrial firm. 2. Narrow-gage rail lines used on construction jobs or around industrial plants. { in'das-trē-əl 'räl,wä }

Industrial revolution [IND ENG] A widespread change in industrial or production methods, toward production by machine and away from manual labor. { in'das-trē-əl ,rēv-ə'lü-shən }

Industrial security [IND ENG] The portion of internal security which refers to the protection of industrial installations, resources, utilities, materials, and classified information essential to protection from loss or damage. { in'das-trē-əl sī'kyūr-əd-ē }

Industrial television [COMMUN] Closed-circuit television used for remote viewing of industrial processes and operations. Abbreviated ITV. { in'das-trē-əl 'tel-ə,vīzh-ən }

Industrial truck [ENG] A manually propelled or powered wheeled vehicle for transporting materials over level or slightly inclined running surfaces in a manufacturing or warehousing facility. { in'das-trē-əl 'trāk }

Industrial waste [ENG] Worthless materials remaining from industrial operations. { in'das-trē-əl 'wäst }

Industrial yeast [MICROBIO] Any yeast used for the production of fermented foods and beverages, for baking, or for the production of vitamins, proteins, alcohol, glycerol, and enzymes. { in'das-trē-əl 'yēst }

Indwelling catheter [MED] A thin tube communicating to the body surface, inserted into the vascular system and positioned to permit pressure measurements or blood sampling over a long period of time. { 'in,dwel-ig 'kath-əd-ər }

ineffective time [COMPUT SCI] Time during which a computer can operate normally but which is not used effectively because of mistakes or inefficiency in operating the installation or for other reasons. { ,in-i'fek-tiv 'tīm }

inelastic [MECH] Not capable of sustaining a deformation without permanent change in size or shape. { ,in-ə'las-tik }

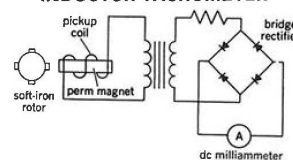
inelastic buckling [MECH] Sudden increase of deflection or twist in a column when compressive stress reaches the elastic limit but before elastic buckling develops. { ,in-ə'las-tik 'bək-liŋ }

inelastic collision [MECH] A collision in which the total kinetic energy of the colliding particles is not the same after the collision as before it. { ,in-ə'las-tik kə'līzh-ən }

inelastic cross section [PHYS] The cross section for an inelastic collision. { ,in-ə'las-tik 'krōs ,sek-shən }

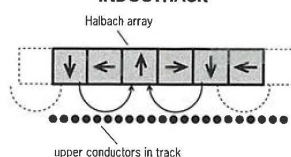
inelastic neutron scattering See slow-neutron spectroscopy. { ,in-ə'las-tik 'nü,trän ,skad-ə-riŋ }

INDUCTOR TACHOMETER



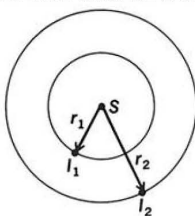
Circuit for an inductor form of tachometer.

INDUCTRACK



Elements of the system. An end view of the Halbach array on a moving car is shown above the upper conductors of the shorted levitation circuits in the track. Straight arrows show magnetization of permanent magnets in the array. Curved arrows show the periodic magnetic field below the array.

INVERSE-SQUARE LAW



Point source S emitting energy of intensity I . The inverse-square law states that $I_1/I_2 = r_2^2/r_1^2$.

inverse-square law [PHYS] Any law in which a physical quantity varies with distance from a source inversely as the square of that distance. { 'in,vərs 'skwer,ló }

inverse Stark effect [SPECT] The Stark effect as observed with absorption lines, in contrast to emission lines. { 'in,vərs 'stärk i,fekt }

inverse substitution [MATH] A substitution that precisely nullifies the effect of a given substitution. { 'in,vərs ,səb-stə'tü-shən }

inverse tangent See arc tangent. { 'in,vərs 'tan-jənt }

inverse trigonometric function [MATH] An inverse function of a trigonometric function; that is, an arc sine, arc cosine, arc tangent, arc cotangent, arc secant, or arc cosecant. Also known as antitrigonometric function. { 'in,vərs ,trig-ə-nə-metrik 'fəŋk-shən }

inverse variation [MATH] 1. A relationship between two variables wherein their product is equal to a constant. 2. An equation or function expressing such a relationship. { 'in,vərs ,ver-e'ä-shən }

inverse video See reverse video. { 'in,vərs 'vid-ē-ō }

inverse voltage [ELECTR] The voltage that exists across a rectifier tube or x-ray tube during the half cycle in which the anode is negative and current does not normally flow. { 'in,vərs 'völ-tij }

inverse Zeeman effect [SPECT] A splitting of the absorption lines of atoms or molecules in a static magnetic field; it is the Zeeman effect observed with absorption lines. { 'in,vərs 'zē-mən i,fekt }

inversion [CHEM] Change of a compound into an isomeric form. [COMMUN] The process of scrambling speech for secrecy by beating the voice signal with a fixed, higher audio frequency and using only the difference frequencies. [CRYSTAL] A change from one crystal polymorph to another. Also known as transformation. [ELEC] The solution of certain problems in electrostatics through the use of the transformation in Kelvin's inversion theorem. [GEN] A type of chromosomal rearrangement in which two breaks take place in a chromosome and the orientation of the fragment between breaks is reversed in rejoining. [GEOL] 1. Development of inverted relief through which anticlines are transformed into valleys and synclines are changed into mountains. 2. The occupancy by a lava flow of a ravine or valley that occurred in the side of a volcano. 3. A diagenetic process in which unstable minerals are converted to a more stable form without a change in chemical composition. [MATH] 1. Given a point O lying in a plane or in space, a mapping of the plane or of space, excluding the point O , into itself in which every point is mapped into its inverse point with respect to a circle or sphere centered at O . 2. The interchange of two adjacent members of a sequence. [MECH ENG] The conversion of basic four-bar linkages to special motion linkages, such as parallelogram linkage, slider-crank mechanism, and slow-motion mechanism by successively holding fast, as ground link, members of a specific linkage (as drag link). [MED] The act or process of turning inward or upside down. [METEOROL] A departure from the usual decrease or increase with altitude of the value of an atmospheric property, most commonly temperature. [OPTICS] The formation of an inverted image by an optical system. [PHYS] The simultaneous reflection of all three directions in space, so that each coordinate is replaced by the negative of itself. Also known as space inversion. [SOLID STATE] The production of a layer at the surface of a semiconductor which is of opposite type from that of the bulk of the semiconductor, usually as the result of an applied electric field. [THERMO] A reversal of the usual direction of a variation or process, such as the change in sign of the expansion coefficient of water at 4°C, or a change in sign in the Joule-Thomson coefficient at a certain temperature. { 'in'vər-zhən }

inversion axis See rotation-inversion axis. { 'in'vər-zhən ,ak-səs }

inversion heterozygote [GEN] A diploid organism in which one member of a pair of homologous chromosomes has an inverted gene sequence and the other has the normal gene sequence. { 'in'vər-zhən ,hed-ə-rə'zī,gōt }

inversion layer [METEOROL] The atmosphere layer through which an inversion occurs. { 'in'vər-zhən ,lā-ər }

inversion ratio [PHYS] The negative of the ratio in a maser

medium of the difference in populations between two nondegenerate energy states under a condition of population inversion, to the population difference at equilibrium. { 'in'vər-zhən ,rā-shō }

inversion spectrum [SPECT] Lines in the microwave spectra of certain molecules (such as ammonia) which result from the quantum-mechanical analog of an oscillation of the molecule between two configurations which are mirror images of each other. { 'in'vər-zhən ,spek-trəm }

inversion symmetry [PHYS] The principle that the laws of physics are unchanged by the operation of inversion; it is violated by the weak interactions. { 'in'vər-zhən 'sim-ə-trē }

inversion temperature [ENG] The temperature to which one junction of a thermocouple must be raised in order to make the thermoelectric electromotive force in the circuit equal to zero, when the other junction of the thermocouple is held at a constant low temperature. [THERMO] The temperature at which the Joule-Thomson effect of a gas changes sign. { 'in'vər-zhən ,tem-prə-chər }

invert [CIV ENG] The floor or bottom of a conduit. { 'in,vərt }

invertase See saccharase. { 'in'vər,tās }

invertebrata [INV ZOO] A division of the animal kingdom including all animals which lack a spinal column; has no taxonomic status. { 'in,vərd-ə'brəd-ə }

invertebrate [INV ZOO] An animal lacking a backbone and internal skeleton. { 'in'vərd-ə,brət }

invertebrate pathology [INV ZOO] All studies having to do with the principles of pathology as applied to invertebrates. { 'in'vərd-ə,brət pə'thāl-ə-jē }

invertebrate zoology [ZOO] A branch of biology that deals with the study of Invertebrata. { 'in'vərd-ə,brət zō'äl-ə-jē }

inverted See overturned. { 'in'vərd-əd }

inverted amplifier [ELECTR] A two-tube amplifier in which the control grids are grounded and the input signal is applied between the cathodes; the grid then serves as a shield between the input and output circuits. { 'in'vərd-əd 'am-plə,fī-ər }

inverted arch [CIV ENG] An arch with the crown downward, below the line of the springings; commonly used in tunnels and foundations. Also known as inflected arch. { 'in'vərd-əd 'ärch }

inverted compass [NAV] A marine magnetic compass designed and installed for observation from below the compass card; frequently used as a telltale compass. Also known as hanging compass; overhead compass. { 'in'vərd-əd 'käm-pəs }

inverted engine [MECH ENG] An engine in which the cylinders are below the crankshaft. { 'in'vərd-əd 'en-jən }

inverted file [COMPUT SCI] 1. A file, or method of file organization, in which labels indicating the locations of all documents of a given type are placed in a single record. 2. A file whose usual order has been inverted. { 'in'vərd-əd 'fil }

inverted heading and bench method See heading-overhead bench method. { 'in'vərd-əd 'hed-ŋ ōn 'bench ,meth-əd }

inverted image [OPTICS] An image in which up and down, as well as left and right, are interchanged; that is, an image that results from rotating the object 180° about a line from the object to the observer; such images are formed by most astronomical telescopes. Also known as reversed image. { 'in'vərd-əd 'im-ij }

inverted L antenna [ELECTROMAG] An antenna consisting of one or more horizontal wires to which a connection is made by means of a vertical wire at one end. { 'in'vərd-əd 'el-an,tēn-ə }

inverted micelle [PHYS CHEM] An aggregate of colloidal dimension in which the polar groups are concentrated in the interior and the lipophilic groups extend outward into the solvent. Also known as inverse micelle. { 'in'vərd-əd mī'sel }

inverted microscope [OPTICS] A microscope in which the body of the microscope, including the objective and the ocular, are below the stage, the illumination for transmitted light is above the stage, and with opaque materials, the vertical illuminator is used under the stage near the objective. { 'in'vərd-əd 'mī-krə,sköp }

inverted plunge [GEOL] A plunge of a fold whose inclination has been carried past the vertical, so that the plunge is less than 90° in the direction opposite from the original attitude; younger rocks plunge beneath the older rocks. { 'in'vərd-əd 'pləŋj }

powder lubricant [MET] An agent mixed with a powder metal to facilitate formation and ejection of a compact. { 'paüd-ər 'lū-brə-kənt }

powderman [MIN ENG] An individual in charge of explosives in an operation of any nature requiring their use. { 'paüd-ər mən }

powder metal [MET] Finely divided particles of a metal. { 'paüd-ər 'med-əl }

powder metallurgy [MET] A metalworking process used to fabricate parts of simple or complex shape from a wide variety of metals and alloys in the form of powders. The process involves shaping of the powder and subsequent bonding of its individual particles by heating or mechanical working. { 'paüd-ər 'med-əl,ər-jē }

powder method [SOLID STATE] A method of x-ray diffraction analysis in which a collimated, monochromatic beam of x-rays is directed at a sample consisting of an enormous number of tiny crystals having random orientation, producing a diffraction pattern that is recorded on film or with a counter tube. Also known as x-ray powder method. { 'paüd-ər 'meth-əd }

powder mine [MIN ENG] An excavation filled with powder for the purpose of blasting rocks. { 'paüd-ər 'mīn }

powder-moisture test [ENG] Determination of moisture in a propellant by drying under prescribed conditions; expressed as percentage by weight. { 'paüd-ər 'mōis-čər 'test }

powder molding [ENG] Generic term for plastics-molding techniques to produce objects of varying sizes and shapes by melting polyethylene powder, usually against the heated inside of a mold. { 'paüd-ər 'mōld-ɪŋ }

powder pattern [CRYSTAL] In the powder method of x-ray diffraction analysis, the display of lines made on film by the Debye-Scherrer method or on paper by a recording diffractometer. [ELECTROMAG] The pattern created by very fine powders or colloidal particles, spread over the surface of a magnetic material; reveals the magnetic domains in a single crystal of such material. { 'paüd-ər 'pad-ərən }

powder silk [TEXT] Special silk fabric formerly used in making propellant bags; it left no burning residue when the propellant burned; silk has now been largely replaced by other materials, and the fabric is called cartridge cloth. Also known as cartridge silk. { 'paüd-ər 'silk }

powder snow [HYD] A cover of dry snow that has not been compacted in any way. { 'paüd-ər 'snō }

powder train [ENG] 1. Train, usually of compressed black powder, used to obtain time action in older fuse types. 2. Train of explosives laid out for destruction by burning. { 'paüd-ər 'træn }

powdery mildew [MYCOL] A fungus characterized by production of abundant powdery conidia on the host; a member of the family Erysiphaceae or the genus *Oidium*. [PL PATH] A plant disease caused by a powdery mildew fungus. { 'paüd-ər 'mīl,dī }

powdery scab [PL PATH] A fungus disease of potato tubers caused by *Spongospora subterranea* and characterized by nodular discolored lesions, which burst and expose masses of powdery fungus spores. { 'paüd-ər 'skab }

powellite [MINERAL] $\text{Ca(WMoO}_4\text{)}$ A commercially important tungsten mineral, crystallizing in the tetragonal system; isomorphous with scheelite (CaWO_4). { 'paü-ə,līt }

power [MATH] 1. The value that is assigned to a mathematical expression and its exponent. 2. The power of a set is its cardinality. 3. For a point, with reference to a circle, the quantity $(x - a)^2 + (y - b)^2 - r^2$, where x and y are the coordinates of the point, a and b are the coordinates of the center of the circle, and r is the radius of the circle. 4. For a point, with reference to a sphere, the quantity $(x - a)^2 + (y - b)^2 + (z - c)^2 - r^2$, where x , y , and z are the coordinates of the point; a , b , and c are the coordinates of the center of the sphere; and r is the radius of the sphere. [OPTICS] See focal power. [PHYS] The time rate of doing work. [STAT] One minus the probability that a given test causes the acceptance of the null hypothesis when it is false due to the validity of an alternative hypothesis; this is the same as the probability of rejecting the null hypothesis by the test when the alternative is true. { 'paü-ər }

power-actuated pressure relief valve [MECH ENG] A pressure relief valve connected to and controlled by a device which utilizes a separate energy source. { 'paü-ər 'ak-čə,wä-dəd 'preʃ-ər rɪ'leɪf ,vəlv }

power amplification See power gain. { 'paü-ər ,am-plə-fə'kā-shən }

power amplifier [ELECTR] The final stage in multistage amplifiers, such as audio amplifiers and radio transmitters, designed to deliver maximum power to the load, rather than maximum voltage gain, for a given percent of distortion. { 'paü-ər 'am-plə,fī-ər }

power amplifier tube See power tube. { 'paü-ər 'am-plə,fī-ər ,tüb }

power attenuation See power loss. { 'paü-ər ,ten-yə'wā-shən }

power bandwidth [COMMUN] The frequency range for which half the rated power of an audio amplifier is available at rated distortion. { 'paü-ər 'bænd,wɪðth }

power barker See barker. { 'paü-ər ,bärk-ər }

power brake [MECH ENG] An automotive brake with engine-intake-manifold vacuum used to amplify the atmospheric pressure on a piston operated by movement of the brake pedal. { 'paü-ər ,brāk }

power breeder [NUCLEO] A nuclear reactor designed to produce both useful power and fuel. { 'paü-ər ,brēd-ər }

power car [AERO ENG] A suspended structure on an airship that houses an engine. [MECH ENG] 1. A railroad car with equipment for furnishing heat and electric power to a train. 2. A railroad car with controls, which can be operated by itself or as part of a train. { 'paü-ər ,kär }

power check [COMPUT SCI] An automatic suspension of computer operations resulting from a significant fluctuation in internal electric power. { 'paü-ər ,ček }

power circuit [ELEC] The wires that carry current to electric motors and other devices that use electric power. { 'paü-ər ,sər-kət }

power component See active component. { 'paü-ər ,kəm,pō-nənt }

power control rod [NUCLEO] A control rod that produces only a small change in reactivity of a nuclear reactor, as required for controlling power level. { 'paü-ər ,kən'tröl ,rəd }

power control valve [MECH ENG] A safety relief device operated by a power-driven mechanism rather than by pressure. { 'paü-ər ,kən'tröl ,vəlv }

power cord See line cord. { 'paü-ər ,kórd }

power curve [STAT] The graph of the power of a test for various alternatives. { 'paü-ər ,kərv }

power cylinder [CONT SYS] A linear actuator consisting of a piston in a cylinder, driven by pneumatic or hydraulic fluid under high pressure. { 'paü-ər ,sil-ən-dər }

power dam [CIV ENG] A dam designed to raise the level of a stream to create or concentrate hydrostatic head for power purposes. { 'paü-ər ,dam }

power density [ELECTROMAG] The amount of power per unit area in a radiated microwave or other electromagnetic field, usually expressed in units of watts per square centimeter. [NUCLEO] The power generation per unit volume of a nuclear-reactor core. { 'paü-ər 'den-səd-ē }

power-density spectrum See frequency spectrum. { 'paü-ər 'den-səd-ē ,spek-trəm }

power detection [ELECTR] Form of detection in which the power output of the detecting device is used to supply a substantial amount of power directly to a device such as a loudspeaker or recorder. { 'paü-ər ,di'tek-shən }

power detector [ELECTR] Detector capable of handling strong input signals without appreciable distortion. { 'paü-ər ,di'tek-tər }

power diode See pin diode. { 'paü-ər ,dī,ōd }

power distribution unit [COMPUT SCI] Equipment located in or near a computer room which breaks down electric power from a high-voltage source to appropriate levels for distribution to the central processing unit and peripheral devices. Abbreviated PDU. { 'paü-ər ,di'strə'byü-shən ,yü-nət }

power divider [ELECTROMAG] A device used to produce a desired distribution of power at a branch point in a waveguide system. { 'paü-ər ,di,vīd-ər }

power down [COMPUT SCI] To exit from any running programs and remove floppy- and hard-disk cartridges before switching the computer off. { 'paü-ər ,daün }

power drill [MECH ENG] A motor-driven drilling machine. { 'paü-ər ,dril }

power-driven [MECH ENG] Of a component or piece of

collides with the gas molecules, creating additional ionization which is detected by a proportional counter. Abbreviated RIS. { 'rez-ən-əns 'tɪ-ə-nə'zā-shən spek'trās-kə-pē }

resonance Kuiper Belt object [ASTRON] A member of the Kuiper Belt that lies in a stable region where it is protected from close encounters with the planet Neptune because its period of revolution is a simple fraction of Neptune's period. { 'rez-ən-əns 'kɪ-pər ,bɛlt ,əb.jekt }

resonance lamp [ATOM PHYS] An evacuated quartz bulb containing mercury, which acts as a source of radiation at the wavelength of the pure resonance line of mercury when irradiated by a mercury-arc lamp. { 'rez-ən-əns ,lamp }

resonance level [QUANT MECH] An unstable state of a compound system capable of being formed in a collision between two particles, and associated with a peak in a graph of cross section versus energy for the scattering of the particles. Also known as resonance. { 'rez-ən-əns ,lev-əl }

resonance line [SPECT] The line of longest wavelength associated with a transition between the ground state and an excited state. { 'rez-ən-əns ,lɪn }

resonance luminescence See resonance radiation. { 'rez-ən-əns ,lū-mə-nəs-əns }

resonance method [ELEC] A method of determining the impedance of a circuit element, in which resonance frequency of a resonant circuit containing the element is measured. [ENG] In ultrasonic testing, a method of measuring the thickness of a metal by varying the frequency of the beam transmitted to excite a maximum amplitude of vibration. { 'rez-ən-əns ,meth-əd }

resonance radiation [ATOM PHYS] The emission of radiation by a gas or vapor as a result of excitation of atoms to higher energy levels by incident photons at the resonance frequency of the gas or vapor; the radiation is characteristic of the particular gas or vapor atom but is not necessarily the same frequency as the absorbed radiation. Also known as resonance fluorescence; resonance luminescence. { 'rez-ən-əns ,ræd-ē-ā-shən }

resonance reaction [NUC PHYS] A nuclear reaction that takes place only when the energy of the incident particles is at or very close to a characteristic value. { 'rez-ən-əns ,rɛ-ak-shən }

resonance scattering [NUC PHYS] A peak in the cross section of a nucleus for elastic scattering of neutrons at energies near a resonance level, accompanied by an anomalous phase shift in the scattered neutrons. { 'rez-ən-əns ,skad-ə-rɪŋ }

resonance spectrum [SPECT] An emission spectrum resulting from illumination of a substance (usually a molecular gas) by radiation of a definite frequency or definite frequencies. { 'rez-ən-əns ,spek-trəm }

resonance structure [ORG CHEM] Any of two or more possible structures of the same compound that have identical geometry but different arrangements of their paired electrons; none of the structures has physical reality or adequately accounts for the properties of the compound, which exists as an intermediate form. { 'rez-ən-əns ,strʌk-ʃər }

resonance transformer [ELEC] A high-voltage transformer in which the secondary circuit is tuned to the frequency of the power supply. [ELECTR] An electrostatic particle accelerator, used principally for acceleration of electrons, in which the high-voltage terminal oscillates between voltages which are equal in magnitude and opposite in sign. { 'rez-ən-əns ,tranz-fɔrmər }

resonance trough [METEOROL] A large-scale pressure trough which forms at an appropriate wavelength away from a dominant trough; for example, the mean trough over the Mediterranean in winter is often considered a resonance trough between the two more dynamically active troughs along the east coasts of North America and Asia. { 'rez-ən-əns ,trɒf }

resonance vibration [MECH] Forced vibration in which the frequency of the disturbing force is very close to the natural frequency of the system, so that the amplitude of vibration is very large. { 'rez-ən-əns ,vɪ-brə-shən }

resonant antenna [ELECTROMAG] An antenna for which there is a sharp peak in the power radiated or intercepted by the antenna at a certain frequency, at which electric currents in the antenna form a standing-wave pattern. { 'res-ən-ənt an 'ten-ə }

resonant capacitor [ELEC] A tubular capacitor that is wound to have inductance in series with its capacitance. { 'res-ən-ənt kə'pəs-əd-ər }

resonant cavity See cavity resonator. { 'res-ən-ənt 'kav-əd-ē }

resonant-cavity maser [PHYS] A maser in which the paramagnetic active material is placed in a cavity resonator. { 'res-ən-ənt 'kav-əd-ē 'mā-zər }

resonant chamber See cavity resonator. { 'res-ən-ənt 'chām-bər }

resonant-chamber switch [ELECTROMAG] Waveguide switch in which a tuned cavity in each waveguide branch serves the functions of switch contacts; detuning of a cavity blocks the flow of energy in the associated waveguide. { 'res-ən-ənt 'chām-bər ,swɪtʃ }

resonant circuit [ELEC] A circuit that contains inductance, capacitance, and resistance of such values as to give resonance at an operating frequency. { 'res-ən-ənt 'sər-kət }

resonant coupling [ELEC] Coupling between two circuits that reaches a sharp peak at a certain frequency. { 'res-ən-ənt 'kəp-lɪŋ }

resonant detector [PHYS] A detector of electromagnetic radiation which is responsive to radiation only at certain frequencies at which resonance is created in the detector. { 'res-ən-ənt dɪ'tek-tər }

resonant diaphragm [ELECTROMAG] Diaphragm, in waveguide technique, so proportioned as to introduce no reactive impedance at the design frequency. { 'res-ən-ənt 'drɪ-ə-frəm }

resonant element See cavity resonator. { 'res-ən-ənt 'el-ə-mənt }

resonant frequency See resonance frequency. { 'res-ən-ənt 'frɛ-kwən-sē }

resonant gate transistor [ELECTR] Surface field-effect transistor incorporating a cantilevered beam which resonates at a specific frequency to provide high-Q-frequency discrimination. { 'res-ən-ənt 'gæt træn-zɪs-tər }

resonant helix [ELECTROMAG] An inner helical conductor in certain types of transmission lines and resonant cavities, which carries currents with the same frequency as the rest of the line or cavity. { 'res-ən-ənt 'hɛ-lɪks }

resonant ionization mass spectrometry [SPECT] An instrumental technique for quantitative identification of trace impurities (at or below the part-per-billion level); it begins with laser-induced or ion-induced desorption, followed by resonant laser ionization (usually from two or three lasers), and then analysis by time-of-flight mass spectrometry. Abbreviated RIMS. { 'rez-ən-ənt ,ɪ-ə-nə-zā-shən 'mas spek'träm-ə-trē }

resonant iris [ELECTROMAG] A resonant window in a circular waveguide; it resembles an optical iris. { 'res-ən-ənt 'ɪ-rɪs }

resonant jet [AERO ENG] A pulsejet engine, exhibiting intensification of power under the rhythm of explosions and compression waves within the engine. { 'res-ən-ənt 'dʒet }

resonant line [ELECTROMAG] A transmission line having values of distributed inductance and distributed capacitance so as to make the line resonant at the frequency it is handling. { 'res-ən-ənt 'lɪn }

resonant-line oscillator [ELECTR] Oscillator in which one or more sections of transmission lines are employed as resonant elements. { 'res-ən-ənt 'lɪn 'əs-ə-lād-ər }

resonant-line tuner [ELECTR] A television tuner in which resonant lines are used to tune the antenna, radio-frequency amplifier, and radio-frequency oscillator circuits; tuning is achieved by moving shorting contacts that change the electrical lengths of the lines. { 'res-ən-ənt 'lɪn 'tʊn-ər }

resonant-mass antenna [ENG] A detector of gravitational radiation, consisting of a mass of several tons of aluminum or other metal, in the shape of a cylinder or a truncated icosahedron, and attached electromechanical transducers that convert deformations of the mass to electronic signals. { 'rez-ən-ənt 'mas an'ten-ə }

resonant-mode power supply [ELECTR] An electronic power supply in which the current and voltage waveforms are shaped to sinusoids by a small inductor and capacitor inserted in the current path. { 'rez-ən-ənt 'mɒd 'paʊ-ər sʌ-plɪ }

resonant Raman effect [ATOM PHYS] A process in which a photon whose energy is exactly matched to the transition energy between two atomic energy levels (within the natural linewidth) promotes an atomic electron to an excited state, which decays in the same step. { 'rez-ən-ənt 'rā,mən i,fekt }

resonant reaction [NUC PHYS] A nuclear reaction whose

probability is enhanced at an energy corresponding to an energy level of one of the nuclei. { 'rez-ən-ənt rē,ak-shən }

resonant-reed relay [ELEC] A reed relay in which the reed switch closes only when the required frequency is applied to the operating coil, to make one of the reeds vibrate until its amplitude is sufficient to make contact with the other reed; used in selective paging systems. { 'res-ən-ənt rēd 'rē,lā }

resonant resistance [ELEC] Resistance value to which a resonant circuit is equivalent. { 'res-ən-ənt ri'zis-təns }

resonant scattering [QUANT MECH] Scattering of a photon by a quantum-mechanical system (usually an atom or nucleus) in which the system first absorbs the photon by undergoing a transition from one of its energy states to one of higher energy, and subsequently reemits the photon by the exact inverse transition. { 'res-ən-ənt 'skad-ə-rɪŋ }

resonant ultrasound spectroscopy [ACOUS] An experimental technique for obtaining a complete set of elastic constants of a material in which a sample of the material of well-defined shape, usually a sphere or a rectangular parallelepiped, is held between two transducers, one of which excites the sample while the other measures its response, and the spectrum of free mechanical resonances of the sample is measured. { 'rez-ən-ənt ,əl-trə,saʊnd spek'trəs-kə-pē }

resonant voltage step-up [ELEC] Ability of an inductor and a capacitor in a series resonant circuit to deliver a voltage several times greater than the input voltage of the circuit. { 'res-ən-ənt 'vɒl-tij 'step,əp }

resonant wavelength [ELECTROMAG] The wavelength in free space of electromagnetic radiation having a frequency equal to a natural resonance frequency of a cavity resonator. { 'res-ən-ənt 'wæv,leŋkθ }

resonant window [ELECTROMAG] A parallel combination of inductive and capacitive diaphragms, used in a waveguide structure to provide transmission at the resonant frequency and reflection at other frequencies. { 'res-ən-ənt 'wɪn-də }

resonate [ELEC] To bring to resonance, as by tuning. { 'rez-ən,ət }

resonating cavity [ELECTROMAG] Short piece of waveguide of adjustable length, terminated at either or both ends by a metal piston, an iris diaphragm, or some other wave-reflecting device; it is used as a filter, as a means of coupling between guides of different diameters, and as impedance networks corresponding to those used in radio circuits. { 'rez-ən,əd-ɪŋ 'kav-əd-ē }

resonator [PHYS] A device that exhibits resonance at a particular frequency, such as an acoustic resonator or cavity resonator. { 'rez-ən,əd-ər }

resonator grid [ELECTR] Grid that is attached to a cavity resonator in velocity-modulated tubes to provide coupling between the resonator and the electron beam. { 'rez-ən,əd-ər ,grɪd }

resonator wavemeter [ELECTROMAG] Any resonant circuit used to determine wavelength, such as a cavity-resonator frequency meter. { 'rez-ən,əd-ər 'wæv,mēd-ər }

resorbed reef [GEOL] A reef characterized by embayed margins and by the numerous isolated patches of reef that are closely distributed about the main mass. { rē'sɔrbd 'rēf }

resorcin See resorcinol. { rə'zɔrs-ən }

resorcinol [ORG CHEM] $C_6H_4(OH)_2$ Sweet-tasting, white, toxic crystals; soluble in water, alcohol, ether, benzene, and glycerol; melts at 111°C; used for resins, dyes, pharmaceuticals, and adhesives, and as a chemical intermediate. Also known as resorcin. { rə'zɔrs-ən,əl }

resorcinol acetate [ORG CHEM] $HOC_6H_4OCOCH_3$ A viscous, combustible, yellow to amber liquid with burning taste; soluble in alcohol; boils at 283°C; used in cosmetics and medicine. Also known as resorcinol monoacetate. { rə'zɔrs-ən,əl 'as-ə,tæt }

resorcinol diglycidyl ether [ORG CHEM] $C_{12}H_{14}O_2$ A straw yellow liquid with a boiling point of 172°C (at 0.8 mmHg or 100 pascals); used for epoxy resins. Abbreviated RDGE. { rə'zɔrs-ən,əl dɪ'glɪs-ə,dɪl ,ē-θər }

resorcinol-formaldehyde resin [ORG CHEM] A phenol-formaldehyde resin, soluble in water, ketones, and alcohol; used to make fast-curing adhesives for wood gluing. { rə'zɔrs-ən,əl fɔr'mal-də,hɪd 'rez-ən }

resorcinol monoacetate See resorcinol acetate. { rə'zɔrs-ən,əl 'mān-ə's-ə,tæt }

β-resorcylic acid [ORG CHEM] $(OH)_2C_6H_3COOH$ Combustible, white needles; soluble in alcohol and ether, very slightly soluble in water; decomposes at 220°C; used as a dyestuff and a pharmaceutical intermediate, and in the manufacture of fine chemicals. { 'bəd-ə 'rē-zɔr'sɪl-ɪk 'as-əd }

resorption [PETR] The process by which a magma redissolves previously crystallized minerals. [PHYS] Absorption or, less commonly, adsorption of material by a body or system from which the material was previously released. { rē'sɔrp-shən }

resource [SCI TECH] A reserve source of supply, such as a material or mineral. { 'rē,sɔrs }

resource allocation in multiproject scheduling [IND ENG] A system that employs network analysis as an aid in making the best assignment of resources which must be stretched over a number of projects. Abbreviated RAMPS. { 'rē,sɔrs ,əl-ə'kā-shən ɪn 'mʌl-tɪ'prɔj-ekt 'sked-jə-lɪŋ }

respiration [PHYSIO] 1. The processes by which tissues and organisms exchange gases with their environment. 2. The act of breathing with the lungs, consisting of inspiration and expiration. { ,res-pə'rei-shən }

respirator [ENG] A device for maintaining artificial respiration to protect the respiratory tract against irritating and poisonous gases, fumes, smoke, and dusts, with or without equipment supplying oxygen or air; some types have a fitting which covers the nose and mouth. { 'res-pə,rəd-ər }

respiratory arrest [MED] Sudden cessation of spontaneous respiration due to failure of the respiratory center. { 'res-prə,tɔr-ē 'ə'rest }

respiratory center [PHYSIO] A large area of the brain involved in regulation of respiration. { 'res-prə,tɔr-ē 'sen-tər }

respiratory dead space [PHYSIO] That part of the respiratory system which has no alveoli and in which little or no exchange of gas between air and blood takes place. { 'res-prə,tɔr-ē 'ded ,spæs }

respiratory distress syndrome of newborn [MED] A disease occurring during the first days of life, characterized by respiratory distress and cyanosis; a hyaline membrane lines the alveoli when the disease persists for more than several hours. Abbreviated RDS. { 'res-prə,tɔr-ē dɪ'stɪs ,sɪn,drɔm əv 'nū,bɔrn }

respiratory epithelium [HISTOL] The ciliated pseudostratified epithelium lining the respiratory tract. { 'res-prə,tɔr-ē ,ep-ə'thē-lē-əm }

respiratory minute volume [PHYSIO] The total amount of air which moves in and out of the lungs in a minute. { 'res-prə,tɔr-ē 'mɪn-ət 'vɒl-yəm }

respiratory pigment [BIOCHEM] Any of various conjugated proteins that function in living organisms to transfer oxygen in cellular respiration. { 'res-prə,tɔr-ē 'pɪg-mənt }

respiratory quotient [PHYSIO] The ratio of volumes of carbon dioxide evolved and oxygen consumed during a given period of respiration. Abbreviated RQ. { 'res-prə,tɔr-ē 'kwɔ-shənt }

respiratory syncytial virus [VIROL] An enveloped, single-stranded RNA animal virus belonging to the Paramyxoviridae genus *Pneumovirus*; associated with a large proportion of respiratory illnesses in very young children, particularly bronchiolitis and pneumonia. { 'res-prə,tɔr-ē sɪn'sɪʃ-əl 'vɪ-rəs }

respiratory system [ANAT] The structures and passages involved with the intake, expulsion, and exchange of oxygen and carbon dioxide in the vertebrate body. { 'res-prə,tɔr-ē 'sɪs-təm }

respiratory tree [ANAT] The trachea, bronchi, and bronchioles. [INV ZOO] Either of a pair of branched tubular appendages of the cloaca in certain holothurians that is thought to have a respiratory function. { 'res-prə,tɔr-ē ,trē }

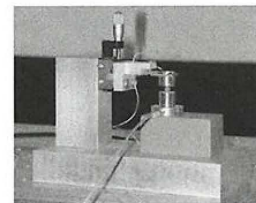
respirometer [ENG] 1. An instrument for studying respiration. 2. A diver's helmet containing a compressed air supply for replenishing oxygen used by the diver. { ,res-pə'rɪm-əd-ər }

responder [ELECTR] The transmitter section of a radar beacon. { rɪ'spān-dər }

responder beacon [ELECTR] The radar beacon that serves to emit the signals of the responder in a transponder. { rɪ'spān-dər ,bē-kən }

response [COMMUN] See reply. [CONT SYS] A quantitative expression of the output of a device or system as a function

RESONANT ULTRASOUND SPECTROSCOPY



Resonant ultrasound spectroscopy transducer with a mounted sample. (Dynamic Resonance Systems Inc.)

alteration of a body's responsiveness to a foreign antigen, usually an allergen, such that upon subsequent exposures to the allergen there is a heightened immune response. [PSYCH] A process in which a given behavior increases in intensity simply with repeated occurrences. { 'sen-səd-ə'zā-shən }

sensitometer [ENG] An instrument for measuring the sensitivity of light-sensitive materials. { 'sen-sə'tām-əd-ər }

sensor [ENG] The generic name for a device that senses either the absolute value or a change in a physical quantity such as temperature, pressure, flow rate, or pH, or the intensity of light, sound, or radio waves and converts that change into a useful input signal for an information-gathering system; a television camera is therefore a sensor, and a transducer is a special type of sensor. Also known as primary detector; sensing element. { 'sen-sər }

sensorineural deafness [MED] Deafness caused by an abnormality of the sense organ in the inner ear or the auditory nerve (cranial nerve VIII). { 'sen-sə-rē'nūr-əl 'def-nəs }

sensorium [PHYSIO] 1. A center, especially in the brain, for receiving and integrating sensations. 2. The entire sensory apparatus of an individual. { 'sen-sōr-ē-əm }

sensory aphasia [MED] A form of aphasia in which the perception of sounds as language is partially preserved, but the patient is unable to comprehend the meaning of words, and in speaking, words are evoked with difficulty, are used incorrectly, and do not convey ideas correctly, resulting frequently in other forms of language impairment, particularly in agrammatism. Also known as receptive aphasia. { 'sen-sə-rē 'āf-ā-zhə }

sensory area [NEUROSCI] Any area of the cerebral cortex associated with the perception of sensations. { 'sen-sə-rē 'er-ē-ə }

sensory cell [NEUROSCI] A neuron having its terminal processes connected with sensory nerve endings. [PHYSIO] A modified epithelial or connective tissue cell adapted for the reception and transmission of sensations. { 'sen-sə-rē 'sel }

sensory control [CONT SYS] Control of a robot's actions on the basis of its sensor readings. { 'sen-sə-rē kən'trōl }

sensory controlled robot [CONT SYS] A robot whose programmed sequence of instructions can be modified by information about the environment received by the robot's sensors. { 'sen-sə-rē kən'trōld 'rō-bōt }

sensory learning [PSYCH] Learning situations in which a person or animal is trained to respond to changes in or differences between some aspects of a physical stimulus presented to one of the sense organs. { 'sen-sə-rē 'lɔrn-ɪŋ }

sensory memory [PSYCH] The sensations that briefly continue after something has been perceived. { 'sens-ə-rē 'mem-rē }

sensory nerve [NEUROSCI] A nerve that conducts afferent impulses from the periphery to the central nervous system. { 'sen-sə-rē 'nɔrv }

sensory-neural hearing loss [PHYSIO] A type of hearing loss resulting from damage to the receptive elements in the ear or to the auditory nerve itself. { 'sen-sə-rē 'nūr-əl 'hɪr-ɪŋ 'lɔs }

sentence [COMPUT SCI] An entire instruction in the COBOL programming language. { 'sent-əns }

sentential calculus See propositional calculus. { 'sen'ten-ʃəl 'kal-kyə-ləs }

sentential connectives See propositional connectives. { 'sen'ten-ʃəl kə'nek-tivz }

sentential function See propositional function. { 'sen'ten-ʃəl 'fɒŋk-shən }

sentinel [COMPUT SCI] Symbol marking the beginning or end of an element of computer information such as an item or a tape. { 'sent-ən-əl }

sepal [BOT] One of the leaves composing the calyx. { 'sep-əl }

separable degree [MATH] Let E be an algebraic extension of a field F , and let f be any embedding of F in a field L such that L is the algebraic closure of the image of F under f ; the separable degree of E over F is the number of distinct embeddings of E in L which are extensions of f . { 'sep-rə-bəl dɪ'grē }

separable element [MATH] An element a is said to be separable over a field F if it is algebraic over F and if the extension field of F generated by a is a separable extension of F . { 'sep-rə-bəl 'el-ə-mənt }

separable extension [MATH] A field extension K of a field F is separable if every element of K is a root of a separable

polynomial whose coefficients are elements of F . { 'sep-rə-bəl ik'sten-ʃən }

separable polynomial [MATH] A polynomial with no multiple roots. { 'sep-rə-bəl ,pāl-i'nō-mē-əl }

separable space [MATH] A topological space which has a countable subset that is dense. { 'sep-rə-bəl 'spās }

separate See soil separate. { 'sep-rət }

separated aggregate [MATER] Aggregate for concrete that has been separated into fine and coarse constituents. { 'sep-ə,rəd-əd 'ag-rə-gət }

separated ammunition [ORD] Ammunition characterized by the arrangement of the propelling charge and the projectile for loading into the gun; the propelling charge, contained in a primed cartridge case that is sealed with a closing plug, and the projectile are loaded into the gun in one operation; separated ammunition is used when the ammunition is too large to handle as fixed ammunition. { 'sep-ə,rəd-əd ,am-yə'nish-ən }

separated-function synchrotron [NUCLEO] A proton synchrotron in which separate groups of magnets are used to focus and deflect the beam so that it follows a circular path. { 'sep-ə,rəd-əd 'fɒŋk-shən 'sɪŋ-kro'trɒn }

separated sets [MATH] Sets A and B in a topological space are separated if both the closure of A intersected with B and the closure of B intersected with A are disjoint. { 'sep-ə,rəd-əd 'sets }

separate loading ammunition [ORD] Ammunition in which the projectile, propellant charge (bag-loaded), and primer are loaded separately into the gun; no cartridge case is utilized in this type of ammunition. { 'sep-rət 'lɔd-ɪŋ ,am-yə'nish-ən }

separately excited [ELEC] Obtaining excitation from a source other than the machine or device itself. { 'sep-rət-lē ik'sɪd-əd }

separate sewage system [CIV ENG] A drainage system in which sewage and groundwater are carried in separate sewers. { 'sep-rət 'si:ŋ ,sɪs-təm }

separating calorimeter [PHYS] A device for measuring the moisture content of steam. { 'sep-ə,rəd-ɪŋ ,kal-ə'rim-əd-ər }

separating power [CHEM ENG] The measure of the ability of a system (such as a rectifying system) to separate the components of a mixture, when the components have increasingly close boiling points. { 'sep-ə,rəd-ɪŋ ,paʊ-ər }

separating transcendence base [MATH] A transcendence base of a field E over a field F such that E is algebraic and separable over the field generated by F and the transcendence base. { 'sep-ə,rəd-ɪŋ tran'sen-dəns ,bās }

separation [AERO ENG] The action of a fallaway section or companion body as it casts off from the remaining body of a vehicle, or the action of the remaining body as it leaves a fallaway section behind it. [CHEM ENG] The separation of liquids or gases in a mixture, as by distillation or extraction. [ENG] 1. The action segregating phases, such as gas-liquid, gas-solid, liquid-solid. 2. The segregation of solid particles by size range, as in screening. [ENG ACOUS] The degree, expressed in decibels, to which left and right stereo channels are isolated from each other. [GEOL] The apparent relative displacement on a fault, measured in any given direction. [MIN ENG] The removal of gangue from raw ores, as in frothing. { 'sep-ə'rā-shən }

separation axioms [MATH] Properties of topological spaces such as Hausdorff, regular, and normal which reflect how points and closed sets may be enclosed in disjoint neighborhoods. { 'sep-ə'rā-shən 'ak-sē-əmz }

separation disk [BOT] A layer of gelatinous material between two adjacent negative cells in some blue-green algae; associated with hormogonium formation. { 'sep-ə'rā-shən 'disk }

separation energy [NUC PHYS] The energy needed to remove a proton, neutron, or alpha particle from a nucleus. { 'sep-ə'rā-shən ,en-ər-jē }

separation factor [NUCLEO] The abundance ratio of two isotopes after processing, divided by their abundance ratio before processing. { 'sep-ə'rā-shən ,fak-tər }

separation filter [ELECTR] Combination of filters used to separate one band of frequencies from another. { 'sep-ə'rā-shən ,fɪl-tər }

separation layer [BOT] A structurally distinct layer of the abscission zone of a plant containing abundant starch and dense cytoplasm. { 'sep-ə'rā-shən ,lā-ər }

separation negatives [GRAPHICS] The negatives made

tangential surface [OPTICS] A surface containing the primary foci of points in a plane perpendicular to the optical axis of an astigmatic system. { 'tan'jen-chəl 'sər-fəs }

tangential velocity [MECH] 1. The instantaneous linear velocity of a body moving in a circular path; its direction is tangential to the circular path at the point in question. 2. The component of the velocity of a body that is perpendicular to a line from an observer or reference point to the body. { 'tan'jen-chəl və'lās-əd-ē }

tangential wave See S wave. { 'tan'jen-chəl 'wāv }

tangential wave path [ELECTROMAG] In radio propagation over the earth, a path of propagation of a direct wave which is tangential to the surface of the earth; the tangential wave path is curved by atmospheric refraction. { 'tan'jen-chəl 'wāv ,path }

tangent indicatrix See spherical indicatrix. { 'tan-jənt in'dik-ə-tryks }

tangent latitude error [NAV] The angle between the local meridian and the setting position or spin axis in a nonpendulous gyrocompass where damping is accomplished by offsetting the point of application of the force of a mercury ballistic. { 'tan-jənt 'lad-ə-tūd ,er-ər }

tangent offset [ENG] In surveying, a method of plotting traverse lines; angles are laid out by linear measurement, using a constant times the natural tangent of the angle. { 'tan-jənt 'ɔf ,set }

tangent plane [MATH] The tangent plane to a surface at a point is the plane having every line in it tangent to some curve on the surface at that point. { 'tan-jənt 'plān }

tangent point See point of tangency. { 'tan-jənt ,point }

tangent screw [ENG] A screw providing tangential movement along an arc, such as the screw which provides the final angular adjustment of a marine sextant during an observation. { 'tan-jənt ,skrū }

tangent space [MATH] 1. The vector space of all tangent vectors at a given point of a differentiable manifold. 2. See tangent bundle. { 'tan-jənt ,spās }

tangent surface [MATH] The ruled surface generated by the tangents to a specified space curve. Also known as tangential developable. { 'tan-jənt ,sər-fəs }

tangent vector [MATH] A tangent vector at a point of a differentiable manifold is any vector tangent to a differentiable curve in the manifold at this point; alternatively, a member of the tangent plane to the manifold at the point. { 'tan-jənt ,vek-tər }

tangent welding [MET] Arc welding in which two or more electrodes are in a plane parallel to the line of travel. { 'tan-jənt 'weld-ɪŋ }

tangerine [BOT] Any of several trees of the species *Citrus reticulata*; the fruit is a loose-skinned mandarin with a deep-orange or scarlet rind. { 'tan-jə-rēn }

tangerine oil See mandarin oil. { 'tan-jə-rēn ,oil }

tangling [SOLID STATE] The reduction of motion of dislocations in a substance by increasing the total number of dislocations, so that they tangle and interfere with each other's motions. { 'taŋ-gliŋ }

tangoreceptor [PHYSIO] A sense organ in the skin that responds to touch and pressure. { 'taŋ-go-ri'sep-tər }

tanh See hyperbolic tangent. { 'tan'əch }

tank [ELECTR] 1. A unit of acoustic delay-line storage containing a set of channels, each forming a separate recirculation path. 2. The heavy metal envelope of a large mercury-arc rectifier or other gas tube having a mercury-pool cathode. 3. See tank circuit. [ENG] A large container for holding, storing, or transporting a liquid. { 'taŋk }

tankage [ENG] Contents of a storage tank. [MATER] Slaughter-house entrails and scraps used as fertilizer. { 'taŋk-kiŋ }

tank balloon [ENG] An air- and vapor-tight flexible container fitted to the breather pipe of a gasoline storage tank to receive gasoline vapors; as the tank cools, the vapors return to the tank. { 'taŋk bə,lūn }

tank barge [NAV ARCH] A barge equipped with tanks that may carry any one of a great variety of liquid commodities, such as petroleum and petroleum products, chemicals, and fertilizers. { 'taŋk ,bārj }

tank battery [PETRO ENG] A grouping of interconnected storage tanks situated to receive the output of one or more oil wells. { 'taŋk ,bad-ə-rē }

tank bottom [CHEM ENG] The liquid material in a tank below the level of the outlet pipe; often a mixture of the stored liquid with rust and other sediment. { 'taŋk ,bād-əm }

tank car [ENG] Railroad car onto which is mounted a cylindrical, horizontal tank designed for the transport of liquids, chemicals, gases, meltable solids, slurries, emulsions, or fluidizable solids. { 'taŋk ,kär }

tank circuit [ELECTR] A circuit which exhibits resonance at one or more frequencies, and which is capable of storing electric energy over a band of frequencies continuously distributed about the resonant frequency, such as a coil and capacitor in parallel. Also known as electrical resonator; tank. { 'taŋk ,sər-kət }

tank ditch See antitank ditch. { 'taŋk ,dich }

tank dozer [ORD] Standard tank equipped with a detachable bulldozer blade. { 'taŋk ,döz-ər }

tanker [NAV ARCH] A steel ship in which the hull is subdivided into tanks for carrying petroleum products or other liquid cargo in bulk. Also known as tankship. { 'taŋ-kər }

tank farm [PETRO ENG] An area in which a number of large-capacity storage tanks are located, generally used for crude oil or petroleum products. { 'taŋk ,färm }

tank gage [ENG] A device used to measure the contents of a liquid storage tank; can be manual or automatic. { 'taŋk ,gāj }

tank obstacle See antitank obstacle. { 'taŋk 'əb-stə-kəl }

tank periscope [OPTICS] A periscope permitting a tank occupant to observe without being exposed to bullet fire; employs a pair of plane, parallel, reflecting surfaces (either mirrors or prisms) so arranged in a mount that the path of light through the instrument forms a letter Z. { 'taŋk 'per-ə-sköp }

tank reactor [NUCLEO] A nuclear reactor in which the core is suspended in a closed tank, as distinct from an open-pool reactor. { 'taŋk rē'ak-tər }

tank scale [ENG] A counterweighted suspension or platform weighing mechanism for tanks, hoppers, and similar solids or liquids containers. { 'taŋk ,skāl }

tankship See tanker. { 'taŋk ,ship }

tank switch [PETRO ENG] An automatic control of lease tanks in oil fields, including controls of lines to fill tanks and for pipeline runs; can be electrically or pneumatically actuated. { 'taŋk ,swɪch }

tank truck [ENG] A truck body onto which is mounted a cylindrical, horizontal tank, designed for the transport of liquids, chemicals, gases, meltable solids, slurries, emulsions, or fluidizable solids. { 'taŋk ,trək }

tannase [BIOCHEM] An enzyme that catalyzes the hydrolysis of tannic acid to gallic acid; found in cultures of *Aspergillus* and *Penicillium*. { 'ta,nās }

tannic acid [ORG CHEM] 1. $C_{14}H_{10}O_9$ A yellowish powder with an astringent taste; soluble in water and alcohol, insoluble in acetone and ether; derived from nutgalls; decomposes at 210°C; used as an alcohol denaturant and a chemical intermediate, and in tanning and textiles. Also known as digallic acid; gallotannic acid; gallotannin; tannin. 2. $C_{76}H_{52}O_{46}$ Yellowish-white to light-brown amorphous powder or flakes; decomposes at 210–215°C; very soluble in alcohol and acetone; used as a mordant in dyeing, in photography, as a reagent, and in clarifying wine or beer. Also known as pentadigalloylglucose. { 'tan-ik 'as-əd }

tannin See tannic acid. { 'tan-ən }

tanning [ENG] A process of preserving animal hides by chemical treatment (using vegetable tannins, metallic sulfates, and sulfurized phenol compounds, or syntans) to make them immune to bacterial attack, and subsequent treatment with fats and greases to make them pliable. { 'tan-ɪŋ }

tanning agent [MATER] Any one of the tannins used to treat skins and hides to preserve the hide substance and to protect it from decay. { 'tan-ɪŋ ,ä-jənt }

tanning extract [MATER] Tannin-rich liquor extracted from woods and pulps; used in leather tanning. { 'tan-ɪŋ ,ek-strakt }

tan rot [PL PATH] A fungus disease of strawberries caused by *Pezizella lythri* and characterized by the appearance of tan depressions on the fruit. { 'tan ,rät }

tantalic acid anhydride See tantalum oxide. { 'tan'tal-ik 'as-əd an'hīd-rid }

tantal chloride See tantalum chloride. { 'tan'tal-ik 'klōr,ɪd }

tantalite [MINERAL] $(Fe,Mn)Ta_2O_6$ An iron-black mineral that crystallizes in the orthorhombic system and commonly occurs in short prismatic crystals; luster is submetallic, hardness

TANK BARGE



Tank barges carrying refrigerated ammonia.

TANK PERISCOPE

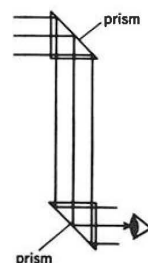


Diagram of a simple tank periscope with parallel reflecting surfaces.