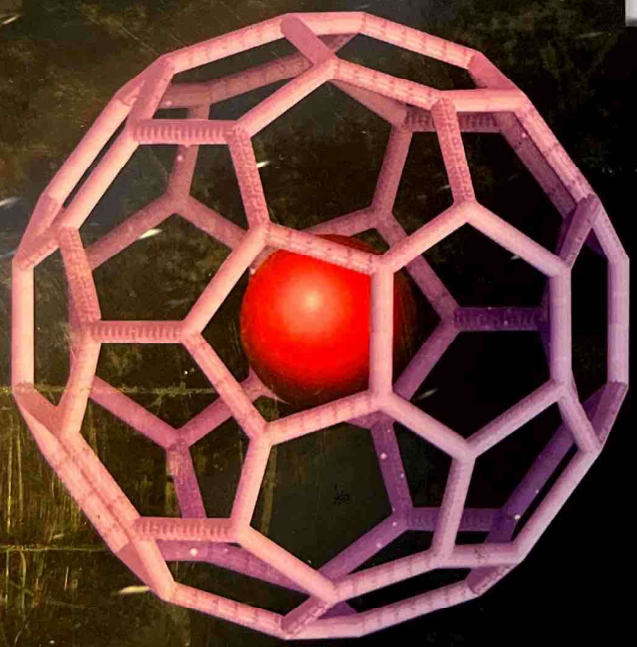
McGraw-Hill Dictionary of SCIENTIFIC and TECHNICAL TERMS



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 meterorites, 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 Procaryotes,* 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.

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parallel [COMPUT SCI] Simultaneous transmission of, storage of, or logical operations on the parts of a word, character, or other subdivision of a word in a computer, using separate facilities for the various parts. [ELEC] Connected to the same pair of terminals. Also known as multiple; shunt. [GEOD] A circle on the surface of the earth, parallel to the plane of the equator and connecting all points of equal latitude. Also known as circle of longitude; parallel of latitude. [MATH] **1.** Lines are parallel in a euclidean space if they lie in a common plane and do not intersect. **2.** Planes are parallel in a Euclidean three-dimensional space if they do not intersect. **3.** A circle parallel to the primary great circle of a sphere or spheroid. **4.** A curve is parallel to a given curve C if it consists of points that are a fixed distance from C along lines perpendicular to C. [PHYS] Of two or more displacements or other vectors, having the same direction. { 'par·ə,lel }

parallel access [COMPUT SCI] Transferral of information to or from a storage device in which all elements in a unit of information are transferred simultaneously. Also known as simultaneous access. { 'par·ə,lel 'ak,ses }

parallel addition [COMPUT SCI] A method of addition by a computer in which all the corresponding pairs of digits of the addends are processed at the same time during one cycle, and one or more subsequent cycles are used for propagation and adjustment of any carries that may have been generated. { 'par·ə,lel ə'dish·ən }

parallel algorithm [COMPUT SCI] An algorithm in which several computations are carried on simultaneously. { 'par·ə,lel 'al·gə,rith·əm }

parallel axiom [MATH] The axiom of an affine plane which states that if p and L are a point and line in the plane such that p is not on L, then there exists exactly one line that passes through p and does not intersect L. { 'par·ə,lel 'ak·sē·əm }

parallel axis theorem [MECH] A theorem which states that the moment of inertia of a body about any given axis is the moment of inertia about a parallel axis through the center of mass, plus the moment of inertia that the body would have about the given axis if all the mass of the body were located at the center of mass. Also known as Steiner's theorem. { 'par·ə,lel ˌak·səs ˌthir·əm }

parallel baffle muffler [DES ENG] A muffler constructed of a series of ducts placed side by side in which the duct cross section is a narrow but long rectangle. { 'par·ə,lel ˌbaf·əl 'məf·lər }

parallel buffer [ELECTR] Electronic device (magnetic core or flip-flop) used to temporarily store digital data in parallel, as opposed to series storage. { 'par·ə,lel 'bəf·ər }

parallel by character [COMPUT SCI] The handling of all the characters of a machine word simultaneously in separate lines, channels, or storage cells. { 'par·ə,lel bī 'kar·ik·tər }

parallel circuit [ELEC] An electric circuit in which the elements, branches (having elements in series), or components are connected between two points, with one of the two ends of each component connected to each point. { 'par·ə,lel 'sər·kət }

parallel communications [COMMUN] The simultaneous transmission of data over two or more communications channels. { 'par·ə,lel kəˌmyü·nə'kā·shənz }

parallel compensation *See* feedback compensation. { 'par·ə,lel ˌkäm·pən'sā·shən }

parallel computation [COMPUT SCI] The simultaneous computation of several parts of a problem. { 'par·ə,lel ˌkäm·pyü'tā·shən }

parallel computer [COMPUT SCI] **1.** A computer that can carry out more than one logic or arithmetic operation at one time. **2.** *See* parallel digital computer. { 'par·ə,lel kəm 'pyüd·ər }

parallel conversion [COMPUT SCI] The process of transferring operations from one computer system to another, during which both systems are run together for a period of time to ensure that they are producing identical results. { 'par·ə,lel kən'vər·zhən }

parallel course computer *See* course-line computer. { 'par·ə,lel ˌkȯrs kəm,pyüd·ər }

parallel curves [MATH] Two curves such that one curve is the locus of points on the normals to the other curve at a fixed distance along the normals. { 'par·ə,lel ˌkərvz }

parallel cut [ENG] A group of parallel holes, not all charged with explosive, to create the initial cavity to which the loaded holes break in blasting a development round. Also known as burn cut. { 'par·ə,lel 'kət }

parallel digital computer [COMPUT SCI] Computer in which the digits are handled in parallel; mixed serial and parallel machines are frequently called serial or parallel, according to the way arithmetic processes are performed; an example of a parallel digital computer is one which handles decimal digits in parallel, although it might handle the bits constituting a digit either serially or in parallel. { 'par·ə,lel 'dij·əd·əl kəm 'pyüd·ər }

parallel displacement [MATH] A vector A at a point P of an affine space is said to be obtained from a vector B at a point Q of the space by a parallel displacement with respect to a curve connecting A and B if a vector $V(X)$ can be associated with each point X on the curve in such a manner that $A = V(P)$, $B = V(Q)$, and the values of V at neighboring points of the curve are parallel as specified by the affine connection. { 'par·ə,lel di'splās·mənt }

parallel dot character printer *See* line dot matrix. { 'par·ə,lel ˌdät 'kar·ik·tər ˌprint·ər }

parallel drainage pattern [HYD] A drainage pattern characterized by regularly spaced streams flowing parallel to one another over a large area. { 'par·ə,lel 'drān·ij ˌpad·ərn }

parallel drum [DES ENG] A cylindrical form of drum on which the haulage or winding rope is coiled. { 'par·ə,lel 'drəm }

parallel edges [MATH] Two or more edges that join the same pair of vertices in a graph. Also known as multiple edges. { ˌpar·ə,lel 'ej·əz }

parallel element-processing ensemble [COMPUT SCI] A powerful electronic computer used by the U.S. Army to simulate tracking and discrimination of reentry vehicles as part of the ballistic missile defense research program. Abbreviated PEPE. { 'par·ə,lel 'el·ə·mənt ˌprä,ses·iŋ ən,säm·bəl }

parallel entry [MIN ENG] An intake airway parallel to the haulageway. { 'par·ə,lel 'en·trē }

parallelepiped [MATH] A polyhedron all of whose faces are parallelograms. { ˌpar·ə,lel·ə'pī·pəd }

parallel evolution [EVOL] Evolution of similar characteristics in different groups of organisms. { 'par·ə,lel ˌev·ə'lü·shən }

parallel extinction [OPTICS] Nearly total absorption of light that is propagating in an anisotropic crystal in a direction parallel to crystal outlines or traces of cleavage planes. { 'par·ə,lel ik'stiŋk·shən }

parallel feed [COMPUT SCI] *See* sideways feed. [ELECTR] Application of a direct-current voltage to the plate or grid of a tube in parallel with an alternating-current circuit, so that the direct-current and the alternating-current components flow in separate paths. Also known as shunt feed. { 'par·ə,lel 'fēd }

parallel firing [ENG] A method of connecting together a number of detonators which are to be fired electrically in one blast. { 'par·ə,lel 'fīr·iŋ }

parallel flow [ELEC] Also known as loop flow. **1.** The flow of electric current from one point to another in an electric network over multiple paths, in accordance with Kirchhoff's laws. **2.** In particular, the flow of electric current through electric power systems over paths other than the contractual path. { 'par·ə,lel 'flō }

parallel fold *See* concentric fold. { 'par·ə,lel 'fōld }

parallel gripper [CONT SYS] A robot end effector made up of two jawlike components that grasp objects. { 'par·ə,lel 'grip·ər }

parallel growth *See* parallel intergrowth. { 'par·ə,lel 'grōth }

parallel impedance [ELEC] One of two or more impedances that are connected to the same pair of terminals. { 'par·ə,lel im'pēd·əns }

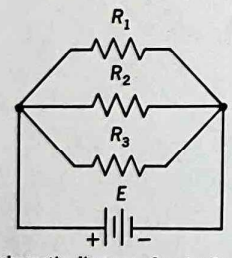
paralleling reactor [ELECTROMAG] Reactor for correcting the division of load between parallel-connected transformers which have unequal impedance voltages. { 'par·ə,lel·iŋ rē'ak·tər }

parallel input/output [COMPUT SCI] Data that are transmitted into and out of a computer over several conductors simultaneously. { 'par·ə,lel 'in,půt 'aůt,půt }

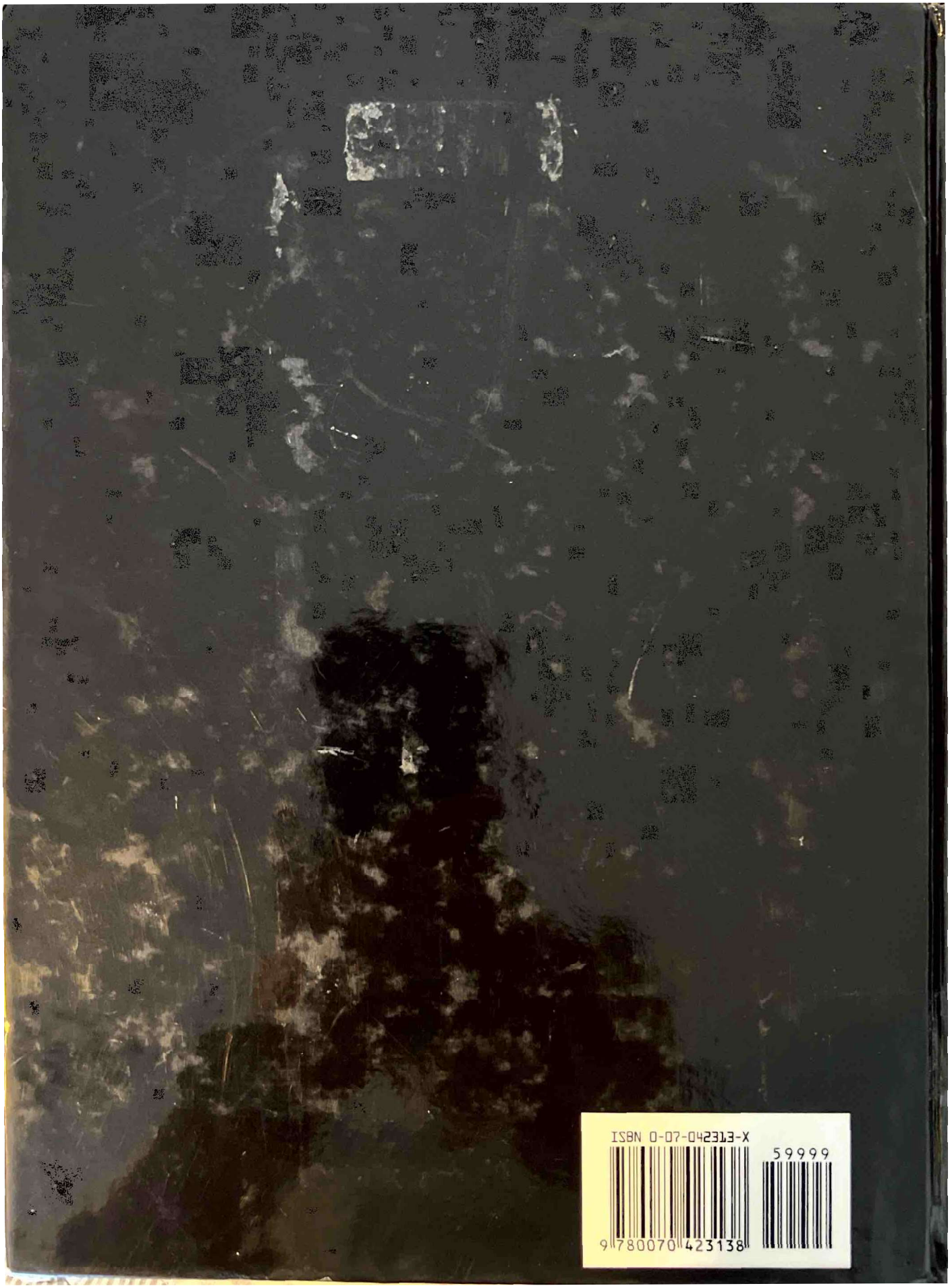
parallel interface [ELECTR] A link between two devices in which all the information transferred between them is transmitted simultaneously over separate conductors. Also known as parallel port. { 'par·ə,lel 'in·tər,fās }

parallel intergrowth [CRYSTAL] Intergrowth of two or more

PARALLEL CIRCUIT



Schematic diagram of a simple parallel circuit in which the resistors, R_1, R_2, and R_3, are connected in parallel between terminals of battery which supplies voltage E.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