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McGraw-Hill
Dictionary ^{of}
SCIENTIFIC
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TERMS



Sixth Edition

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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Ventral view of *Heteraxinales xanthophilis* (Bargis), an ectoparasite of the spot fish (*Leiostomus xanthurus*).

MICRO-ELECTRO-MECHANICAL SYSTEM



Close-up of a torsional ratcheting actuator fabricated by surface micromachining at Sandia National Laboratories.

oocci; chemorganotrophic organisms with respiratory or fermentative metabolism. [*mī-kro-kīk'vās'ē*]

microcode [COMPUT SCI] A code that employs microinstructions, not ordinarily used in programming. [*mī-kro-kōd*]

microcomputer [COMPUT SCI] 1. A digital computer whose central processing unit resides on a single semiconductor integrated circuit chip, a microprocessor. 2. An electronic device, typically consisting of a microprocessor central processing unit, semiconductor memory (RAM), graphics display, and keyboard. Typical configurations also include a hard disk for persistent memory, a compact disk drive, a disk drive which allows removable disks to be used to move data in and out of the machine, and a pointing device. [*mī-kro-kəm'pyūt'ər*]

microcomputer development system [COMPUT SCI] A complete microcomputer system that is used to test both the software and hardware of other microcomputer-based systems. [*mī-kro-kəm'pyūt'ər dī'vel-op'mēt 'sīstəm*]

microconsumer See decomposer. [*mī-kro-kōn'shmēr*]

microcontroller [ELECTR] A microcomputer, microprocessor, or other equipment used for precise process control in data handling, communication, and manufacturing. [*mī-kro-kān'trōl'ər*]

microcopy [GRAPHICS] A photographic reproduction that is too small to be read without magnification. [*mī-kro-kāp'ē*]

microcoquina [PETR] A coarse limestone composed wholly or partially of cemented sand-size particles of shell detritus. [*mī-kro-kā'kē-nā*]

Microcotyloidea [INV ZOO] A superfamily of ectoparasitic trematodes in the subclass Monogenea. [*mī-kro-kōt'āl'ōid'ē-ā*]

microcoulomb [PHYS] A unit of electric charge equal to one-millionth of a coulomb. Abbreviated μC . [*mī-kro-kū'lōm*]

microcrack See microfracture. [*mī-kro-kāk*]

microcrystalline [CRYSTAL] Composed of or containing crystals that are visible only under the microscope. [*mī-kro-krist'al'ē-nē*]

microcrystalline wax [MATER] A petroleum wax containing small, refractive crystals, and having a higher molecular weight, melting point, and viscosity than paraffin wax, used in laminated paper and electrical coil coating. [*mī-kro-krist'al'ē-nē waks*]

Microcyprini [VERT ZOO] The equivalent name for Cyprinodontiformes. [*mī-kro-s'pī-nī*]

microcyst [MUD] A very small cyst. [*mī-kro-sīs*]

microcyte [MED] A red blood cell whose diameter or mean corpuscular volume or both are more than two standard deviations below the normal mean. Also known as microerythrocyte. [*mī-kro-sīt*]

microcythemia [MED] Blood characterized by the presence of small red blood cells. [*mī-kro-sī'thēm-ē-ā*]

microcytic anemia [MED] Any form of anemia in which small erythrocytes occur in the blood. [*mī-kro-sī'tik 'anēm-ē-ā*]

microcytosis [MED] A blood disorder characterized by a preponderance of microcytes. [*mī-kro-sī'tō-sīs*]

microdactyly [MED] A condition of abnormal smallness of fingers or toes. [*mī-kro-dak'tīl'ē*]

microdensitometer [SPEC] A high-sensitivity densitometer used in spectroscopy to detect spectrum lines too faint to be negative to be seen by the human eye. [*mī-kro-dens-sī'tam-ē-tēr*]

microdiagnostic program [COMPUT SCI] A microprogram that tests a specific hardware component, such as a bus or store location, for faults. [*mī-kro-dī-āg'nīs'tīk 'prō-gram*]

microdialysis [ANALY CHEM] A technique for sampling biological systems in which a short length of hollow fiber dialysis membrane is implanted into any tissue or fluid compartment, and through which compounds in the extracellular fluid are collected for subsequent analysis. [*mī-kro-dī'al'ē-sīs*]

microdiffusimeter [PHYS] A type of diffusimeter in which diffusion is measured over microscopic distances, greatly reducing the time required for the measurement and the effects of vibration and temperature changes. [*mī-kro-dī'fyz-ē-tēr*]

microdisk [COMPUT SCI] A small floppy disk with a diameter between 3 and 4 inches (7.6 and 10 centimeters). Also known as microfloppy disk. [*mī-kro-dīsk*]

microdisk laser [OPTICS] A very small semiconductor laser

that consists of a quantum well structure formed into a disk such that total internal reflection of photons traveling around the perimeter of the disk results in high-Q whispering-gallery resonances. [*mī-kro-dīsk 'lā-zər*]

microdissection [BIOC] Dissection under a microscope. [*mī-kro-dī'sek-shən*]

Microdomatacea [POLYCH] An extinct superfamily of deep-sea polychaete mollusks in the order Aspidobanchia. [*mī-kro-dō-mā-tā-sē-ā*]

microearthquake [SEISMO] An earthquake with a low intensity, usually less than 3 on the Richter scale. Also known as microquake. [*mī-kro-'arth'kwāk*]

microelectrode [ELEC] 1. In biological research, an electrode with a microscopic tip dimension that may be placed adjacent to or inside a cell for the purpose of recording the electric potentials of single cells, passing electrical currents, or injecting electrically charged substances into the cell. 2. In physical chemistry, a minute electrode used to perform electrolysis of small quantities of material. [*mī-kro-'lek'trōd*]

microelectrolysis [PHYS CHEM] Electrolysis of small quantities of material. [*mī-kro-'lek'trōl'ē-sīs*]

micro-electro-mechanical system [ENG] A system in which micromechanisms are coupled with microelectromechanics, most commonly fabricated as microarrays or microstructures. Abbreviated MEMS. Also known as microsystem. [*mī-kro-'lek'trō-mē-kān-ē-kal 'sīstəm*]

microelectronic circuitry See microcircuitry. [*mī-kro-'lek'trō-nīk 'sēr-tā-trē*]

microelectronics [ELECTR] The technology of constructing circuits and devices in extremely small packages by various techniques. Also known as microminiaturization; microsystem electronics. [*mī-kro-'lek'trō-nīks*]

microelectrophoresis [ANALY CHEM] Direct microscopic observation and measurement of the velocity of migration of ions or other charged bodies through a solution toward oppositely charged electrodes. Also known as optical cytophotometry. [*mī-kro-'lek'trō-fōr-ē-sīs*]

microelement [ELECTR] Resistor, capacitor, transistor, diode, inductor, transformer, or other electronic element in combination of elements mounted on a ceramic chip (100 centimeter thick and about 0.75 centimeter square; individual microelements are stacked, interconnected, and joined to form micromodules. [*mī-kro*] An element of a workpiece whose time span is too short to be observed by the human eye. [*mī-kro-'el-ē-mēt*]

microemulsion [MATER] A thermodynamically stable dispersion of two immiscible liquids, stabilized by surfactants, is typically clear because the dispersed droplets are less than 100 nanometers in diameter. [*mī-kro-'emū-lshən*]

microemulsion flooding See micellar flooding. [*mī-kro-'emū-lshən 'flōd'īŋ*]

microencapsulation [CHEM ENG] Enclosing of material in capsules from well below 1 micrometer to over 2000 micrometers in diameter. [*mī-kro-ēn-kap-sū-lā-shən*]

microencephaly See microcephaly. [*mī-kro-ēn'sēf'ē-ā*]

microengineering [ENG] The design and production of small, three-dimensional objects, usually for manufacturing in high volumes at low cost. [*mī-kro-en-jī-nī-ŋ*]

microenvironment [ECOL] The specific environmental factors in a microhabitat. [*mī-kro-'ē-vī-rō-n'mēt*]

microerythrocyte See microcyte. [*mī-kro-'ē-rī-thē-sīt*]

microevolution [EVOL] 1. Evolutionary processes resulting from the accumulation of minor changes over a relatively short period of time; evolutionary changes due to gene mutation. 2. Evolution of species. [*mī-kro-'ev-ō-lū-shən*]

microfabrication [ENG] The technology of fabricating microsystems from silicon wafers, using standard semiconductor process technologies in combination with specially developed processes. [*mī-kro-fab-rī-kā-shən*]

microfacies [PETR] The composition, features, or appearance of a rock or mineral in thin section under the microscope. [*mī-kro-fā-sēz*]

microfarad [ELECTR] A unit of capacitance equal to one-millionth of a farad. Abbreviated μF . [*mī-kro-far-əd*]

microfauna [BIOG] Microscopic animals such as protozoa and nematodes. [*mī-kro-fā-nā*]

microfibril [CELL BIOL] The submicroscopic unit of a microscopic cellular fiber. [*mī-kro-fībrīl*]

microfiche [JOURNALS] A microfilm card or sheet of