

503
M

McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

Sixth Edition

R/V Oceanus Library
Woods Hole Oceanographic Institution

McGraw-Hill

New York Chicago San Francisco
Lisbon London Madrid Mexico City
Milan New Delhi San Juan Seoul Singapore Sydney Toronto

WiTricity Corp.

Exhibit 2012

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

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Prokaryotes*, 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 Stinco Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology*, White Sands Missile Range, New Mexico, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

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

Copyright © 2003, 1994, 1989, 1984, 1978, 1976, 1974 by The McGraw-Hill Companies, Inc. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

1 2 3 4 5 6 7 8 9 0 DOW/DOW 0 8 7 6 5 4 3 2

ISBN 0-07-042313-X

Library of Congress Cataloging-in-Publication Data

McGraw-Hill dictionary of scientific and technical terms--6th ed.

p. cm.

ISBN 0-07-042313-X (alk. paper)

1. Science--Dictionaries. 2. Technology--Dictionaries. I. Title: Dictionary of scientific and technical terms.

Q123.M15 2002
503--dc21

2002026436

eddy-current loss [ELECTROMAG] Energy loss due to undesired eddy currents circulating in a magnetic core. { 'ed-ē, kə-rant, lōs }

eddy-current sensor [ENG] A proximity sensor which uses an alternating magnetic field to create eddy currents in nearby objects, and then the currents are used to detect the presence of the objects. { 'ed-ē, kə-rant, 'sen-sər }

eddy-current tachometer [AERO ENG] A type of tachometer in which a rotating permanent magnet induces currents in a spring-mounted metal cylinder; the resulting torque rotates the cylinder and moves its attached pointer in proportion to the speed of the rotating shaft. Also known as drag-type tachometer. { 'ed-ē, kə-rant, tək'm-əd-ər }

eddy-current test [ELECTROMAG] A nondestructive test in which the change of impedance of a test coil brought close to a conducting specimen indicates the eddy currents induced by the coil, and thereby indicates certain properties or defects of the specimen. { 'ed-ē, kə-rant, test }

eddy diffusion [FL MECH] Diffusion which occurs in turbulent flow, by the rapid process of mixing of the swirling eddies of fluid. Also known as turbulent diffusion. { 'ed-ē, dā, fyū-zhən }

eddy-diffusion coefficient See eddy diffusivity. { 'ed-ē, dā, fyū-zhən, kō-i, fīsh-ənt }

eddy diffusivity [FL MECH] The exchange coefficient for the diffusion of a conservative property by eddies in a turbulent flow. Also known as coefficient of eddy diffusion; eddy-diffusion coefficient. { 'ed-ē, dā, fyū-siv-əd-ē }

eddy flux [FL MECH] The rate of transport (or flux) of fluid properties such as momentum, mass heat, or suspended matter by means of eddies in a turbulent motion; the rate of turbulent exchange. Also known as moisture flux; turbulent flux. { 'ed-ē, flaks }

eddy heat conduction [THERMO] The transfer of heat by means of eddies in turbulent flow, treated analogously to molecular conduction. Also known as eddy heat flux; eddy conduction. { 'ed-ē, hēt kən'dak-shən }

eddy heat flux See eddy heat conduction. { 'ed-ē, hēt, flaks }

eddy kinetic energy [FL MECH] The kinetic energy of that component of fluid flow which represents a departure from the average kinetic energy of the fluid, the mode of averaging depending on the particular problem. Also known as turbulence energy. { 'ed-ē, kə'net-ik, en-ər-jē }

eddy mill See pothole. { 'ed-ē, mil }

eddy resistance [FL MECH] Resistance or drag of a ship resulting from eddies that are shed from the hull or appendages of the ship and carry away energy. { 'ed-ē, n'z-is-təns }

eddy spectrum [FL MECH] 1. The distribution of frequencies of rotation of eddies in a turbulent flow, or of those eddies having some range of sizes. 2. The distribution of kinetic energy among eddies with various frequencies or sizes. { 'ed-ē, 'spek-trəm }

eddy stress See Reynolds stress. { 'ed-ē, stres }

eddy velocity [FL MECH] The difference between the mean velocity of fluid flow and the instantaneous velocity at a point. Also known as fluctuation velocity. { 'ed-ē, vā, lās-əd-ē }

eddy viscosity [FL MECH] The turbulent transfer of momentum by eddies giving rise to an internal fluid friction, in a manner analogous to the action of molecular viscosity in laminar flow, but taking place on a much larger scale. { 'ed-ē, vī'skās-əd-ē }

eddy viscosity model [FL MECH] A model of the Reynolds stresses in turbulent flow which is based on the idea that turbulent mixing, analogous to molecular mixing, is governed by an effective viscosity (the eddy viscosity) which is not a property of the fluid but a consequence of the local state of turbulence. { 'ed-ē, vī'skās-əd-ē, mūd-əl }

Edeleanu process [CHEM ENG] A process for removal of compounds of sulfur from petroleum fractions by an extraction procedure utilizing liquid sulfur dioxide, or liquid sulfur dioxide and benzene. { ə, del-ē-ē-nū, prās-əs }

EDEL room [ENG ACOUS] A control room in a sound-recording studio in which reflective or diffusive surfaces are placed near the loudspeaker and above the mixing console, while the rear wall behind the mixer is made absorptive. Derived from LEDE room (by reverse spelling). { 'ed-əl, rūm or /əd-ē/ē-ēl, rūm }

edema [MED] An excessive accumulation of fluid in the cells, tissue spaces, or body cavities due to a disturbance in

the fluid exchange mechanism. Also known as dropsy. { ə, dē-mə }

Edenian [GEOL] Lower Cincinnati geologic stage in North America, above the Mohawkian and below Maysvillian. { ə, dē-n-ē-ən }

Edentata [VERT ZOO] An order of mammals characterized by the absence of teeth or the presence of simple prismatic, unspecialized teeth with no enamel. { ə, dē-n'ti-dā }

edentate [VERT ZOO] 1. Lacking teeth. 2. Any member of the Edentata. { ə, dē-n, tāt }

edentulous [VERT ZOO] Having no teeth; especially, having lost teeth that were present. { ə, dē-n'chə-lōs }

EDFA See erbium-doped fiber amplifier. { 'ed, fā or /əd-ē/ēfā }

edge [MATH] 1. A line along which two plane faces of a solid intersect. 2. A line segment connecting nodes or vertices in a graph (a geometric representation of the relation among situations). 3. The edge of a half plane is the line that bounds it. Also known as arc. { ej }

edgeboard connector See card-edge connector. { 'ej, bōrd kə, nek-tər }

edge-bridging ligand [ORG CHEM] A ligand that forms a bridge over one edge of the polyhedron of a metal cluster structure. { 'ej, brī-jīŋ 'lī-gənd }

edge connector [ELECTR] A row of etched lines on the edge of a printed circuit board that is inserted into a slot to establish a connection with another printed circuit board. { 'ej kə, nek-tər }

edge cover [MATH] A set of edges in a graph such that every vertex of positive degree is the vertex of at least one of the edges in this set. { 'ej, kəv-ər }

edge-covering number [MATH] For a graph, the sum of the number of edges in a minimum edge cover and the number of isolated vertices. { 'ej, kəv-ər-īŋ, nəm-bər }

edge dislocation [CRYSTAL] A dislocation which may be regarded as the result of inserting an extra plane of atoms, terminating along the line of the dislocation. Also known as Taylor-Orowan dislocation. { 'ej, dis-lō, kā-shən }

edge domination number [MATH] For a graph, the smallest possible number of edges in a dominating edge set. { 'ej, dām-ə-nā-shən, nəm-bər }

edge effect [ECOL] The influence of adjacent plant communities on the number of animal species present in the direct vicinity. [ELEC] An outward-curving distortion of lines of force near the edges of two parallel metal plates that form a capacitor. { 'ej i, fekt }

edge excitation [CRYO] An excitation of a droplet of incompressible quantum Hall liquid in which a surface wave propagates along the edge of the droplet in the same direction that electrons drift along the edge, as determined by the direction of the magnetic field. { 'ej, ek-si'tā-shən }

edge focusing [ELECTROMAG] Axial focusing of a stream of ions which occurs when it crosses a fringe magnetic field obliquely; used in mass spectrometers and cyclotrons. { 'ej, fō-kās-īŋ }

edge fog [GRAPHICS] The light fog which appears along the edge of roll film, generally from exposure during loading or unloading. { 'ej, fāg }

edge grain [MATER] The grain pattern produced when soft wood is cut so that the tree's annular rings form an angle of more than 45° with the board's surface. { 'ej, grān }

edge independence number [MATH] For a graph, the largest possible number of edges in a matching. { 'ej, in-dā-pen-dāns, nəm-bər }

edge-induced subgraph [MATH] A subgraph whose vertices consist of all the vertices in the original graph that are incident on at least one edge in the subgraph. { 'ej in, dūst 'səb, grāf }

edge joint [MET] A joint between the edges of welded members which are essentially parallel to each other. { 'ej, jōint }

edge line [MAP] In cartography, a heavy line on a relief map that indicates a sharp change of slope. { 'ej, līn }

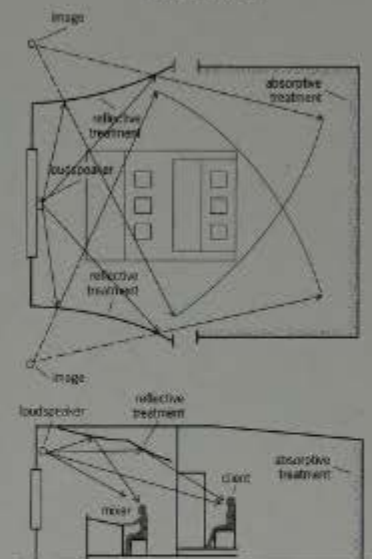
edge of regression [MATH] The curve swept out by the characteristic point of a one-parameter family of surfaces. { 'ej əv rē'grēsh-ən }

edge printing [GRAPHICS] A preprinted identification along the edge of film. { 'ej, print-īŋ }

edger [MET] The part of a forging die which portions out the quantity of metal needed for shaping. { 'ej-ər }

edge runner See Chile mill. { 'ej, rən-ər }

EDEL ROOM



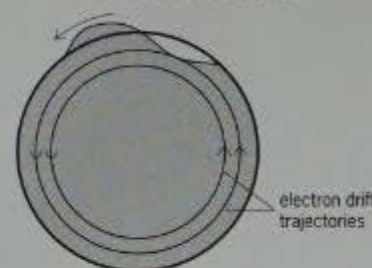
EDL room with an absorptive rear wall and a live front end as in conventional listening locales.

EDENTATA



The giant anteater (*Myrmecophaga tridactyla*).

EDGE EXCITATION



An edge wave on a quantum Hall droplet, which propagates in only one direction.