McGraw-Hill Dictionary of Scientific and Technical Terms

Fifth Edition

Sybil P. Parker
Editor in Chief

McGraw-Hill, Inc.
New York San Francisco Washington, D.C.

On the cover: Photomicrograph of crystals of vitamin B_1.
(*Dennis Kunkel, University of Hawaii*)

McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS, Fifth Edition

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

ISBN 0-07-042333-4

Library of Congress Cataloging-in-Publication Data

McGraw-Hill dictionary of scientific and technical terms /
Sybil P. Parker, editor in chief..—5th ed.
p. cm.
ISBN 0-07-042333-4
1. Science—Dictionaries. 2. Technology—Dictionaries.
I. Parker, Sybil P.
Q123.M34 1993
503—dc20 93-34772
CIP

INTERNATIONAL EDITION

generate another which meets specified requirements for shape, amplitude, and timing. Also known as signal normalization. { 'sig·nəl ˌstan·dər·də'zā·shən }

signal station [COMMUN] A place on shore at which signals are made to ships at sea. { 'sig·nəl ˌstā·shən }

signal strength [ELECTROMAG] The strength of the signal produced by a radio transmitter at a particular location, usually expressed as microvolts or millivolts per meter of effective receiving antenna height. { 'sig·nəl ˌstreŋkth }

signal-strength meter [ELECTR] A meter that is connected to the automatic volume-control circuit of a communication receiver and calibrated in decibels or arbitrary S units to read the strength of a received signal. Also known as S meter; S-unit meter. { 'sig·nəl ˈstreŋkth ˌmēd·ər }

signal-to-interference ratio [ELECTR] The relative magnitude of signal waves and waves which interfere with signal-wave reception. { 'sig·nəl tü ˌin·tər'fir·əns ˌrā·shō }

signal-to-noise improvement factor *See* noise improvement factor. { 'sig·nəl tə 'nȯiz im'prüv·mənt ˌfak·tər }

signal-to-noise ratio [ELECTR] The ratio of the amplitude of a desired signal at any point to the amplitude of noise signals at that same point; often expressed in decibels; the peak value is usually used for pulse noise, while the root-mean-square (rms) value is used for random noise. Abbreviated S/N; SNR. { 'sig·nəl tə 'nȯiz ˌrā·shō }

signal tower [CIV ENG] A switch tower from which railroad signals are displayed or controlled. { 'sig·nəl ˌtau·ər }

signal tracer [ELECTR] An instrument used for tracing the progress of a signal through a radio receiver or an audio amplifier to locate a faulty stage. { 'sig·nəl ˌtrā·sər }

signal voltage [ELEC] Effective (root-mean-square) voltage value of a signal. { 'sig·nəl ˌvōl·tij }

signal wave [COMMUN] A wave whose characteristics permit some intelligence, message, or effect to be conveyed. Also known as signal. { 'sig·nəl ˌwāv }

signal-wave envelope [COMMUN] Contour of a signal wave which is composed of a series of wave cycles. { 'sig·nəl ˈwāv 'en·vəˌlōp }

signal winding [ELEC] Control winding, of a saturable reactor, to which the independent variable (signal wave) is applied. { 'sig·nəl ˌwīnd·iŋ }

sign-and-magnitude code [COMPUT SCI] The representation of an integer X by $(-1)^{a_0}(2^{n-2}a_1 + 2^{n-3}a_2 + \cdots + a_{n-1})$, where a_0 is 0 for X positive, and a_0 is 1 for X negative, and any a_j is either 0 or 1. { 'sīn ən 'mag·nəˌtüd ˌkōd }

signature [ELECTR] The characteristic pattern of a target as displayed by detection and classification equipment. [GRAPHICS] A folded, printed sheet, usually consisting of 16 or 32 pages, that forms a section of a book or a pamphlet; the sheet may have fewer pages, but is always in multiples of four. [NAV ARCH] The graphic record of the magnetic properties of a vessel automatically traced as the vessel passes over the sensitive element of a recording instrument; more accurately called magnetic signature. [ORD] The identifying characteristics peculiar to each type of target which enable detecting apparatus, such as certain fuses, to sense and differentiate targets. [QUANT MECH] A quantum number α that characterizes a system with the symmetry of a prolate or oblate spheroid and satisfies the equation $r = \exp(-i\pi\alpha)$, where r is the eigenvalue of the system under a rotation through 180° about an axis perpendicular to the symmetry axis. { 'sig·nə·chər }

sign bit [COMPUT SCI] A sign digit consisting of one bit. { 'sīn ˌbit }

sign check indicator [COMPUT SCI] An error checking device, indicating no sign or improper signing of a field used for arithmetic processes; the machine can, upon interrogation, be made to stop or enter into a correction routine. { 'sīn ˌchek 'in·dəˌkād·ər }

sign-control flip-flop [COMPUT SCI] In computers, a flip-flop in the arithmetic unit used for storing the sign of the result of an operation. { 'sīn kənˌtrōl 'flipˌfläp }

sign convention [OPTICS] A convention as to which quantities, such as angles, distances, and radii of curvature, are positive and which are negative in computations involving a lens or a mirror. { 'sīn kənˌven·chən }

sign digit [COMPUT SCI] A digit containing one to four binary

signed decimal [COMPUT SCI] A form representation in which the low-order nibbl a sign bit that specifies whether the numbe ative. { 'sīnd 'des·məl }

signed field [COMPUT SCI] A field of number which includes a sign digit indicatin { 'sīnd 'fēld }

signed integer [COMPUT SCI] A whole n lies anywhere in a domain that extends fr positive integer, and which therefore carries ə·jər }

signed measure [MATH] An extended m defined on a sigma algebra of subsets of the value of m on the empty set is 0, (2) countable union of disjoint sets is the sum set, and (3) m assumes at most one of the va { ˌsīnd 'mezh·ər }

signet-ring cell [HISTOL] A cell with a hydrate-filled vacuole that pushes the nuc membrane. { 'sig·nət ˌriŋ 'sel }

sign flag [COMPUT SCI] A bit in a status central processing unit that indicates whet arithmetic operation is positive or negative

significance [MATH] The arbitrary rank, relative magnitude assigned to a given pc { sig'nif·i·kəns }

significance arithmetic [COMPUT SCI] A estimating the numbers and positions of the the radix approximation that results when tion is applied to operands in radix a { sig'nif·i·kəns ə,rith·mə·tik }

significance level *See* level of significance i·kəns ˌlev·əl }

significance probability [STAT] The pr ing a value of a test statistic as significa significant than, the value actually observ ˌpräb·əˌbil·əd·ē }

significant digit *See* significant figure. { s

significant figure [MATH] A prescribed determines the amount of rounding off to be based upon the degree of accuracy in m known as significant digit. { sig'nif·i·kənt

significant wave [OCEANOGR] Statistica average height of the highest third of the wa group. { sig'nif·i·kənt ˌwāv }

sign of the zodiac [ASTRON] The zodia sections, called signs, in each of which the month of the year; each sign, 30° in leng constellation with which the sign once coin 'zō·dēˌak }

sign position [COMPUT SCI] That positic the left or right end of a numeral, in which the number is represented. { 'sīn pəˌzish·ə

sign stimulus [PSYCH] A specific extern tiates certain behavioral sequences that typi stereotyped fashion. { 'sīn ˌstim·yə·ləs }

sign test [STAT] A test which can be us periment is conducted to compare a treatme a number of matched pairs, provided the assigned to the members of each pair at ran

signum [MATH] The real function sgn(different from zero, where $\operatorname{sgn}(x) = 1$ if x -1 if $x < 0$. { 'sig·nəm }

sigua [METEOROL] A straight-blowing n Philippines. { 'sēˌwä }

sikussak [OCEANOGR] Very old sea ice resembles glacier ice because snowfall and ute to its formation. { səˈkü,säk }

SIL *See* speech interference level.

silage [AGR] Green or mature fodder t retard spoilage and produce a succulent v stock. { 'sī·lij }

silane [INORG CHEM] Si_nH_{2n+2} A cla compounds analogous to alkanes, that is, rated paraffin hydrocarbons; they can be Also known as silicon hydride. { 'siˌlān }

silanol [CHEM] A member of the family o