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On the cover: Photomicrograph of crystals of vitamin B₁.
(Dennis Kunkel, University of Hawaii)

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instantaneous condition [PHYS] The condition of a system at a particular instant in time. { 'in-stən'tā-nē-əs kən'dish-ən }

instantaneous cut [ENG] A cut that is set off by instantaneous detonators to be certain that all charges in the cut go off at the same time; the drilling and ignition are carried out so that all the holes break smaller top angles. { 'in-stən'tā-nē-əs 'kət }

instantaneous description [COMPUT SCI] For a Turing machine, the set of machine conditions at a given point in the computation, including the contents of the tape, the position of the read-write head on the tape, and the internal state of the machine. { 'in-stən'tā-nē-əs di'skrip-shən }

instantaneous detonator [ENG] A type of detonator that does not have a delay period between the passage of the electric current through the detonator and its explosion. { 'in-stən'tā-nē-əs 'det-ən,əd-ər }

instantaneous effects [COMMUN] Impairment of telephone or telegraph transmission caused by instantaneous changes in phase or amplitude of the wave in a transmission line. { 'in-stən'tā-nē-əs i'feks }

instantaneous field of view [OPTICS] The solid angle within which radiation is detected by an imaging system employing some form of scanning mechanism, at a given instant of time. { 'in-stən'tā-nē-əs 'fild əv 'vyü }

instantaneous frequency [COMMUN] The time rate of change, divided by 2π , of a phase angle whose sine is proportional to the amplitude of a frequency-modulated wave. { 'in-stən'tā-nē-əs 'frē-kwən-sē }

instantaneous frequency-indicating receiver [ELECTR] A radio receiver with a digital, cathode-ray, or other display that shows the frequency of a signal at the instant it is picked up anywhere in the band covered by the receiver. { 'in-stən'tā-nē-əs 'frē-kwən-sē in-də,kād-ɪŋ ri'sē-vər }

instantaneous fuse [ENG] A fuse with an ignition rate of several thousand feet per minute; an example is PETN. { 'in-stən'tā-nē-əs 'fyüz }

instantaneous power [ELEC] The product of the instantaneous voltage and the instantaneous current for a circuit or component. { 'in-stən'tā-nē-əs 'paʊ-ər }

instantaneous readout [COMMUN] Readout by a radio transmitter instantaneous with the computation of data to be transmitted. { 'in-stən'tā-nē-əs 'rēd,aut }

instantaneous recording [ENG ACOUS] A recording intended for direct reproduction without further processing. { 'in-stən'tā-nē-əs ri'kɔrd-ɪŋ }

instantaneous recovery [MECH] The immediate reduction in the strain of a solid when a stress is removed or reduced, in contrast to creep recovery. { 'in-stən'tā-nē-əs ri'kəv-ərē }

instantaneous sample [COMMUN] One of a sequence of instantaneous values of a wave taken at regular intervals. { 'in-stən'tā-nē-əs 'sam-pəl }

instantaneous strain [MECH] The immediate deformation of a solid upon initial application of a stress, in contrast to creep strain. { 'in-stən'tā-nē-əs 'strān }

instantaneous value [PHYS] The value of a sinusoidal or otherwise varying quantity at a particular instant. { 'in-stən'tā-nē-əs 'val-yü }

instant center See instantaneous center. { 'in-stənt 'sen-tər }

instantiation [COMPUT SCI] 1. An external declaration or a reference to another program or subprogram in the Ada programming language. 2. The deduction of omitted values in a set of data from the known values. 3. The creation of an object of a specific class in an object-oriented program. { in-stən'ti-ə-shən }

instantizing [FOOD ENG] Redrying a wet agglomerate of non-fat dry milk powder to render the product more easily reconstituted. { 'in-stən,tiz-ɪŋ }

instanton [PARTIC PHYS] A hypothetical pseudoparticle which provides solutions to equations describing the gauge fields of quantum chromodynamics, and represents large vacuum fluctuations in these fields that would exert forces on quarks. { 'in-stən,tən }

instant-on switch [ELECTR] A switch that applies a reduced filament voltage to all tubes in a television receiver continuously, so the picture appears almost instantaneously after the set is turned on. { 'in-stənt 'ɒn swɪtʃ }

instant replay See video replay. { 'in-stənt 'rē,plā }

instar [INV ZOO] A stage between molts in the life of arthropods, especially insects. { 'in,stär }

instep [ANAT] The arch on the medial side of the foot. { 'in,step }

instinct [PSYCH] A primary tendency or inborn drive, as toward life, sexual reproduction, and death. [ZOO] A precise form of behavior in which there is an invariable association of a particular series of responses with specific stimuli; an unconditioned compound reflex. { 'in,stɪŋkt }

instinctive behavior [ZOO] Any species-typical pattern of responses not clearly acquired through training. { 'in,stɪŋktɪv bi'hā-vyər }

instinctual [PSYCH] Pertaining to an emotional, impulsive, and generally unreasoned behavior or mental process which is a function of the id. [ZOO] Of or pertaining to instincts. { 'in,stɪŋktʃəl-wəl }

instruction [COMPUT SCI] A pattern of digits which signifies to a computer that a particular operation is to be performed and which may also indicate the operands (or the locations of operands) to be operated on. { 'in,strə'k-shən }

instruction address [COMPUT SCI] The address of the storage location in which a given instruction is stored. { 'in,strə'k-shən ə'dres }

instruction address register [COMPUT SCI] A special storage location, forming part of the program controller, in which addresses of instructions are stored in order to control their sequential retrieval from memory during the execution of a program. { 'in,strə'k-shən ə'dres 'rej-ə'stər }

instruction area [COMPUT SCI] A section of storage used for storing program instructions. { 'in,strə'k-shən ,er-ə }

instruction card [IND ENG] A written description of the standard method used by a worker, to guide his activities. { 'in,strə'k-shən ,kɑrd }

instruction code [COMPUT SCI] That part of an instruction which distinguishes it from all other instructions and specifies the action to be performed. { 'in,strə'k-shən ,kɔd }

instruction constant [COMPUT SCI] A dummy instruction of the type $K = 1$, where K is irrelevant to the program. { 'in,strə'k-shən ,kən'stənt }

instruction counter [COMPUT SCI] A counter that indicates the location of the next computer instruction to be interpreted. Also known as location counter; program counter; sequence counter. { 'in,strə'k-shən ,kaʊnt-ər }

instruction cycle [COMPUT SCI] The steps involved in carrying out an instruction. { 'in,strə'k-shən ,sɪ'kəl }

instruction deck [COMPUT SCI] Set of cards punched to contain a symbolic coded program to be read into a computer. { 'in,strə'k-shən ,dek }

instruction format [COMPUT SCI] Any rule which assigns various functions to the various digits of an instruction. { 'in,strə'k-shən ,fɔr'mat }

instruction length [COMPUT SCI] The number of bits or bytes (eight bits per byte) which defines an instruction. { 'in,strə'k-shən ,lɛŋkθ }

instruction lookahead [COMPUT SCI] A technique for speeding up the process of fetching and decoding instructions in a computer program, and of computing addresses of required operands and fetching them, in which the control unit fetches any unexecuted instructions on hand, to the extent this is feasible. Also known as fetch ahead. { 'in,strə'k-shən 'lʊk-ə,hed }

instruction mix [COMPUT SCI] The proportion of various types of instructions that appear in a particular computer program, or in a benchmark representing a class of programs. { 'in,strə'k-shən ,mɪks }

instruction modification [COMPUT SCI] A change, carried out by the program, in an instruction so that, upon being repeated, this instruction will perform a different operation. { 'in,strə'k-shən ,mɒd-ə'fə'kā-shən }

instruction pointer [COMPUT SCI] 1. A component of a task descriptor that designates the next instruction to be executed by the task. 2. An element of the control component of the stack model of block structure execution, which points to the current instruction. { 'in,strə'k-shən ,pɔɪnt-ər }

instruction register [COMPUT SCI] A hardware element that receives and holds an instruction as it is extracted from memory; the register either contains or is connected to circuits that interpret the instruction (or discover its meaning). Also known as current-instruction register. { 'in,strə'k-shən ,rej-ə'stər }

instruction repertory See instruction set. { 'in,strə'k-shən ,rep-ə'tɔrē }

instruction set [COMPUT SCI] Also known as instruction rep-