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**NEIL SCLATER
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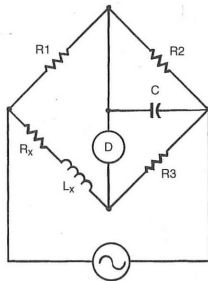
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Anderson bridge can measure inductance with a fixed capacitance.

anemometer An instrument that measures wind velocity.

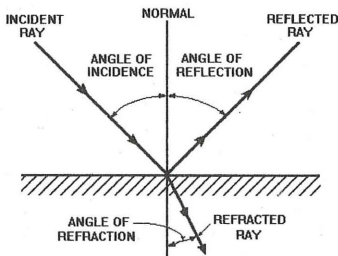
angle diversity Diversity reception in which beyond-the-horizon tropospheric scatter signals are received at slightly different angles, equivalent to paths through different scatter volumes in the troposphere.

angle modulation Modulation in which the angle of a sinewave carrier is the characteristic varied from its normal value. Phase modulation and frequency modulation are forms of angle modulation.

angle noise In radar, tracking error caused by variations in echo arrival area as the target changes its aspect.

angle of elevation The angle between the horizontal plane and the line ascending to the object.

angle of incidence The angle between a wave or beam arriving at a surface and the perpendicular to the surface at the point of arrival.



Angles of incidence, reflection, and refraction for electromagnetic waves.

angle of reflection The angle between a wave or beam leaving a surface and the perpendicular to the surface.

angle of refraction The angle between a refracted wave or beam and the perpendicular to the refracting surface.

angstrom [Å] A unit of length; $10,000 \text{ \AA} = 1 \text{ cm}$; $1 \text{ \AA} = 10^{-8} \text{ cm}$. Also, $1 \text{ \AA} = 10^{-10} \text{ m} = 10^{-4} \text{ \mu m} = 3.937 \times 10^{-9} \text{ in}$. The micrometer (μm) is now preferred to the angstrom as the unit of measure. Visible-light wavelength is between 4000 and 7800 \AA (0.4 and 0.78 \mu m) = 400 to 780 nm; ultraviolet

anode

(UV) radiation is shorter than 0.4 \mu m , and infrared (IR) radiation is longer than 0.78 \mu m .

angular acceleration The rate of change of angular velocity about a rotational axis.

angular accelerometer An accelerometer that measures the rate of change of angle between two objects under observation.

angular deviation loss The ratio of the response of a microphone or loudspeaker on its principal axis to the response at a specified angle from the principal axis, expressed in decibels.

angular deviation sensitivity The ratio of the change in a course-indicator reading to the actual angular change in the course of an aircraft or ship.

angular distance Distance expressed in radians or degrees. It is equal to the distance in wavelengths multiplied by 2π rad or 360° .

angular frequency The frequency expressed in radians per second. It is equal to the frequency in hertz multiplied by 2π .

angular momentum The angular velocity of a body multiplied by its moment of inertia.

angular-momentum quantum number A quantum number that determines the total angular momentum of a molecule exclusive of nuclear spin.

angular resolution The ability of a radar to distinguish between two targets solely by the measurement of angles. It is generally expressed as the minimum angle by which targets must be spaced to be separately distinguishable.

angular velocity $[\omega]$ 1. The speed of a rotating object measured in radians per second. It is equal to revolutions per second multiplied by 2π . 2. The rate of change of phase of an alternating quantity. It is equal to the frequency in hertz multiplied by 2π .

angular width Course width.

anhysteresis Magnetization with a unidirectional field upon which is superposed an alternating field of gradually decreasing amplitude.

anion A negative ion.

anisotropic The characteristic of having different properties in different directions. It is also called *aetotropic*.

anisotropic etching A process of preferential directional etching of a material in the fabrication of silicon integrated circuits and bulk micromachining. It is done with liquid etchants such as potassium hydroxide [KOH] and water for etching silicon.

ANN Abbreviation for *artificial neural networks*.

annular transistor A transistor whose characteristic semiconductor channels are in concentric circles around the emitter.

annunciator An electric-powered remote signaling device, such as a buzzer, signal lamp, or lighted push-button switch.

anode 1. The positive terminal of a cell or battery. Electron flow is toward the anode through the connected load; current flow is away from the anode to the load. 2. [Symbol A] The positive terminal of an electron tube. Electrons flow through the tube to its anode, and from there to the positive terminal of the connected voltage source. Also called plate. 3. In a semiconductor diode, the terminal toward which forward current flows from the external circuit. This anode terminal is normally marked negative. Current flow is from the anode to the cathode

isolation diffusion

isolation diffusion Diffusion that produces the back-to-back junctions required for isolating active devices from each other in an integrated circuit.

isolation network A network inserted into a circuit or transmission line to prevent interaction.

isolation transformer A transformer inserted into a circuit to separate one section of the circuit from undesired influences of other sections. It is usually made with a 1 to 1 ratio of primary turns to secondary turns to eliminate a direct connection without changing voltages.

isolator A passive attenuator whose loss in one direction is much greater than that in the opposite direction. A ferrite isolator for waveguides is an example.

isomagnetic line A line passing through points that have equal magnetic force but not necessarily the same deviation from vertical.

isophotometer A direct-recording photometer that automatically scans and measures optical density of all points in a film transparency or plate and plots the measured density values in a quantitative two-dimensional isodensity tracing of the scanned areas.

isopotential path A line passing through points that have the same potential or field strength.

isosynchronous A serial communications technique that is a hybrid of *synchronous* and *asynchronous* serial protocols. It retains the clock interconnect of the synchronous protocol, but it does not generate synch characters. A start bit is generated as in the synchronous protocol.

isothermal A term meaning without temperature change.

isotropic antenna A theoretical antenna capable of radiating signal energy in all directions with a spherical radiation pattern from a point source. It is used as a standard. It is also called a *unipole*.

isotropic dielectric A dielectric whose dielectric constant is independent of the direction of the applied electric field.

isotropic medium A medium whose properties are the same in all directions.

isotropic radiator A radiator that sends out energy equally in all directions.

I²L Abbreviation for *integrated injection logic*.

I²R loss *Copper loss*.

iterative array An array of a large number of interconnected identical processing modules. When combined with appropriate driver and control circuits in a computer, they permit a large number of simultaneous parallel operations. The technique permits the use of slower, less expensive circuits for individual operations while still providing the required fast total execution time for a problem.

iterative filter A four-terminal filter that provides iterative impedance.

iterative impedance The impedance that, when connected to one pair of terminals of a four-terminal transducer, will cause the same impedance to appear between the other two terminals. The iterative impedance of a uniform transmission line is the same as the characteristic impedance. When a four-terminal transducer is symmetrical, the iterative impedances for the two pairs of terminals are equal and the same as the image impedances and the characteristic impedance.

iterative process A mathematical process for calculating a desired result by a repeating cycle of operations that yields a result closer and closer to the desired result.

ITU Abbreviation for *International Telecommunications Union*.

ITU-TS An abbreviation for *International Telecommunications Union, Telecommunications Standardization Sector*, an advisory committee established by the United Nations to recommend worldwide standards for data transmission. It was formerly known as *CCITT*.

I-type semiconductor *Intrinsic semiconductor*.