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IEEE Taxonomy**

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IEEE Taxonomy: A Subset Hierarchical Display of IEEE Thesaurus Terms

The IEEE Taxonomy comprises the first three hierarchical 'levels' under each term-family (or branch) that is formed from the top-most terms of the IEEE Thesaurus. In this document these term-families are arranged alphabetically and denoted by boldface type. Each term family's hierarchy goes to no more than three sublevels, denoted by indents (in groups of four dots) preceding the next level terms. A term can appear in more than one hierarchical branch and can appear more than once in any particular hierarchy. The IEEE Taxonomy is defined in this way so that it is always a subset of the January 2025 IEEE Thesaurus.

**Aerospace and electronic systems**

- ....Aerospace control
- .....Air traffic control
- .....Attitude control
- .....Ground support
- ....Aerospace engineering
- .....Aerospace biophysics
- .....Aerospace electronics
- .....Aerospace safety
- .....Air safety
- .....Aerospace simulation
- .....Aerospace testing
- .....Wind tunnels
- .....Artificial satellites
- .....Earth Observing System
- .....Low earth orbit satellites
- .....Military satellites
- .....Space stations
- .....Space technology
- .....Payloads
- .....Space debris
- .....Space exploration
- ....Aerospace materials
- .....Aerospace components
- ....Aircraft manufacture
- ....Aircraft navigation
- ....Aircraft propulsion
- .....Propellers
- ....Command and control systems
- ....Electronic warfare
- .....Electronic countermeasures
- .....Jamming
- .....Radar countermeasures
- ....Military equipment
- .....Military aircraft
- .....Payloads
- .....Military satellites
- .....Military vehicles
- .....Weapons

- .....Biological weapons
- .....Chemical weapons
- .....Guns
- .....Missiles
- .....Nuclear weapons
- .....Projectiles
- .....Weapons of mass destruction
- ....Sensor systems
- .....Activity recognition
- .....Human activity recognition
- .....Gunshot detection systems
- ....Sonar
- .....Side-scan sonar
- .....Sonar applications
- .....Sonar detection
- .....Sonar measurements
- .....Sonar equipment
- .....Echo sounders
- .....Synthetic aperture sonar
- ....Telemetry
- .....Biomedical telemetry

**Antennas and propagation**

- ....Antennas
- .....Antenna accessories
- .....Radomes
- .....Antenna arrays
- .....Adaptive arrays
- .....Butler matrices
- .....Linear antenna arrays
- .....Log periodic antennas
- .....Microstrip antenna arrays
- .....Microwave antenna arrays
- .....Phased arrays
- .....Planar arrays
- .....Antenna radiation patterns
- .....Near-field radiation pattern
- .....Antenna theory
- .....Frequency selective surfaces



- .....Antenna-in-package
- .....Apertures
  - .....Aperture antennas
  - .....Aperture coupled antennas
- .....Broadband antennas
  - .....Ultra wideband antennas
  - .....Vivaldi antennas
- .....Dielectric resonator antennas
- .....Dipole antennas
- .....Directional antennas
- .....Directive antennas
- .....Feeds
  - .....Antenna feeds
- .....Fractal antennas
- .....Helical antennas
- .....Horn antennas
- .....Leaky wave antennas
- .....Loaded antennas
- .....Log-periodic dipole antennas
- .....Loop antennas
- .....Microstrip antennas
- .....Microwave antennas
- .....Mobile antennas
- .....Multifrequency antennas
- .....Omnidirectional antennas
- .....Optical antennas
  - .....Nanoantennas
- .....Patch antennas
- .....Radar antennas
- .....Receiving antennas
- .....Rectennas
- .....Reflector antennas
- .....Satellite antennas
- .....Slot antennas
- .....Steerable antennas
- .....Textile antennas
- .....Transmission line antennas
- .....Transmitting antennas
- .....UHF antennas
- .....Wearable antennas
- .....Yagi-Uda antennas
- ....Electromagnetic propagation
  - .....Electromagnetic diffraction
    - .....Optical diffraction
      - .....Physical theory of diffraction
      - .....X-ray diffraction
  - .....Electromagnetic propagation in absorbing media
  - .....Electromagnetic reflection
    - .....Optical reflection
    - .....Microwave propagation

- .....Millimeter wave propagation
- .....Optical propagation
  - .....Optical surface waves
  - .....Optical waveguides
- .....Propagation constant
- .....Propagation losses
- .....Radio propagation
  - .....Radiowave propagation
    - .....NVIS
  - .....Submillimeter wave propagation
  - .....UHF propagation
- ....Radio astronomy

### **Broadcast technology**

- ....Broadcasting
  - .....Digital audio broadcasting
    - .....Digital audio players
    - .....Digital Radio Mondiale
  - .....Digital multimedia broadcasting
  - .....Digital video broadcasting
  - .....Motion pictures
  - .....NVIS
  - .....Radio broadcasting
    - .....Frequency modulation
    - .....Radio networks
  - .....Satellite broadcasting
  - .....Web TV

### **Circuits and systems**

- ....Circuits
  - .....Active circuits
    - .....Active inductors
    - .....Gyrators
    - .....Operational amplifiers
  - .....Adders
  - .....Analog circuits
    - .....Analog integrated circuits
    - .....Analog processing circuits
  - .....Application specific integrated circuits
    - .....System-on-chip
  - .....Asynchronous circuits
  - .....Bipolar transistor circuits
    - .....BiCMOS integrated circuits
    - .....Bipolar integrated circuits
  - .....Bistable circuits
    - .....Latches
  - .....Bridge circuits
  - .....Charge pumps
  - .....Circuit analysis



.....Circuit analysis computing	.....MESFET integrated circuits
.....Coupled mode analysis	.....Microprocessors
.....Nonlinear network analysis	.....Microwave integrated circuits
.....Circuit faults	.....Millimeter wave integrated circuits
.....Electrical fault detection	.....Monolithic integrated circuits
.....Circuit noise	.....Photonic integrated circuits
.....Thermal noise	.....Power integrated circuits
.....Circuit reliability	.....Radiofrequency integrated circuits
.....Circuit simulation	.....SIM card
.....Circuit synthesis	.....Submillimeter wave integrated circuits
.....High level synthesis	.....Superconducting integrated circuits
.....Integrated circuit synthesis	.....Thick film circuits
.....Register transfer level	.....Thin film circuits
.....Coproductors	.....Three-dimensional integrated circuits
.....Counting circuits	.....Through-silicon vias
.....Coupling circuits	.....UHF integrated circuits
.....Digital circuits	.....Ultra large scale integration
.....Circuit topology	.....Very high speed integrated circuits
.....Digital integrated circuits	.....Very large scale integration
.....Digital signal processors	.....Wafer scale integration
.....Distributed parameter circuits	.....Isolators
.....Driver circuits	.....Large scale integration
.....Electronic circuits	.....Ultra large scale integration
.....Breadboard	.....Very large scale integration
.....Central Processing Unit	.....Wafer scale integration
.....Multivibrators	.....Linear circuits
.....Stripboard circuit	.....Logic arrays
.....Equivalent circuits	.....Programmable logic arrays
.....Feedback	.....Logic circuits
.....Feedback circuits	.....Combinational circuits
.....Negative feedback	.....Logic arrays
.....Neurofeedback	.....Programmable logic arrays
.....Hybrid integrated circuits	.....Superconducting logic circuits
.....Integrated circuits	.....Magnetic circuits
.....Analog integrated circuits	.....Microprocessors
.....Analog-digital integrated circuits	.....Automatic logic units
.....Application specific integrated circuits	.....Biomimetics
.....Chiplets	.....Coproductors
.....CMOS integrated circuits	.....Microcontrollers
.....Coproductors	.....Microprocessor chips
.....Current-mode circuits	.....Vector processors
.....Digital integrated circuits	.....Microwave circuits
.....FET integrated circuits	.....Millimeter wave circuits
.....Field programmable gate arrays	.....Millimeter wave integrated circuits
.....Hybrid integrated circuits	.....Millimeter wave integrated circuits
.....Integrated circuit interconnections	.....MIMICs
.....Integrated circuit modeling	.....Monolithic integrated circuits
.....Integrated circuit noise	.....MIMICs
.....Integrated circuit synthesis	.....MMICs
.....Large scale integration	



- .....MOSFET circuits
- .....CMOSFET circuits
- .....MOS integrated circuits
- .....Power MOSFET
- .....Multiplying circuits
- .....Neural circuits
- .....Nonlinear circuits
- .....Nonlinear network analysis
- .....Passive circuits
- .....Phase shifters
- .....Phase transformers
- .....Power dissipation
- .....Power integrated circuits
- .....Printed circuits
- .....Flexible printed circuits
- .....Memory modules
- .....Surface mount technology
- .....Programmable circuits
- .....Field programmable analog arrays
- .....Programmable logic arrays
- .....Programmable logic devices
- .....Programmable logic arrays
- .....Programmable logic devices
- .....Pulse circuits
- .....Flip-flops
- .....Quantum circuit
- .....Radiation detector circuits
- .....Rail to rail operation
- .....Rail to rail amplifiers
- .....Rail to rail inputs
- .....Rail to rail outputs
- .....Rectifiers
- .....RLC circuits
- .....Sampled data circuits
- .....Sequential circuits
- .....Silicon-on-insulator
- .....Silicon on sapphire
- .....Submillimeter wave circuits
- .....Submillimeter wave integrated circuits
- .....Summing circuits
- .....Switched circuits
- .....Switched capacitor circuits
- .....Switching circuits
- .....Choppers (circuits)
- .....Logic circuits
- .....Switching converters
- .....Zero current switching
- .....Zero voltage switching
- .....Thick film circuits
- .....Thin film circuits
- .....Thyristor circuits
- .....Time varying circuits
- .....Trigger circuits
- .....UHF circuits
- .....UHF integrated circuits
- .....UHF integrated circuits
- .....Ultra large scale integration
- .....Very large scale integration
- .....Neuromorphics
- .....VHF circuits
- .....Voltage multipliers
- .....Capacitors
- .....Diodes
- .....Wafer scale integration
- ...Contacts
- .....Brushes
- .....Contact resistance
- .....Ohmic contacts
- ...Filtering
- .....Filters
- .....Active filters
- .....Anisotropic
- .....Bragg gratings
- .....Channel bank filters
- .....Comb filters
- .....Digital filters
- .....Equalizers
- .....Filtering theory
- .....Gabor filters
- .....Harmonic filters
- .....IIR filters
- .....Kalman filters
- .....Low-pass filters
- .....Matched filters
- .....Microstrip filters
- .....Nonlinear filters
- .....Notch filters
- .....Particle filters
- .....Power filters
- .....Resonator filters
- .....Spatial filters
- .....Superconducting filters
- .....Transversal filters
- .....Information filtering
- .....Information filters
- .....Recommender systems
- ...Integrated circuit technology
- .....Beyond CMOS
- .....CMOS technology
- .....CMOS process
- .....Silicon on sapphire



- .....Moore's Law
- ....Logic devices
- .....Logic gates
- .....Programmable logic devices
- ....Oscillators
- .....Digital-controlled oscillators
- .....Injection-locked oscillators
- .....Local oscillators
- .....Microwave oscillators
- .....Phase noise
- .....Ring oscillators
- .....Voltage-controlled oscillators
- ....Single electron devices
- .....Single electron memory
- .....Hetero-nanocrystal memory
- .....Single electron transistors
- ....Tunable circuits and devices
- .....RLC circuits
- .....Tuned circuits

**Communications technology**

- ....Communication equipment
- .....Auditory displays
- .....Codecs
- .....Speech codecs
- .....Video codecs
- .....Modems
- .....On board unit
- .....Optical communication equipment
- .....Optical transmitters
- .....Radio communication equipment
- .....Base stations
- .....Ham radios
- .....Land mobile radio equipment
- .....Radio transceivers
- .....Transponders
- .....Receivers
- .....Optical receivers
- .....RAKE receivers
- .....Receiving antennas
- .....Repeaters
- .....Speech codecs
- .....Telephone equipment
- .....Cellular phones
- .....Landline
- .....Telephone sets
- .....Vocoders
- .....Transceivers
- .....Radio transceivers
- .....Transmitters

- .....Auxiliary transmitters
- .....Diversity methods
- .....Neurotransmitters
- .....Optical transmitters
- .....Radio transmitters
- .....Transmitting antennas
- .....Transponders
- .....TV equipment
- .....Large screen displays
- .....TV receivers
- .....Video codecs
- .....Video equipment
- .....Optical projectors
- .....Video codecs
- .....Videos
- .....Vocoders
- ....Communication switching
- .....Code division multiplexing
- .....Electronic switching systems
- .....Frame relay
- .....Handover
- .....Multiprotocol label switching
- .....Packet switching
- .....Burst switching
- .....Frame relay
- .....Multiprotocol label switching
- .....Packet loss
- ....Communication systems
- .....Air to ground communication
- .....ARPANET
- .....Biomedical communication
- .....Biomedical telemetry
- .....Telemedicine
- .....Broadband communication
- .....B-ISDN
- .....Broadband amplifiers
- .....Communication networks
- .....Central office
- .....Cyberspace
- .....Industrial communication
- .....Maritime communications
- .....Radio access technologies
- .....Relay networks
- .....Telecommunication network performance
- .....Virtual links
- .....Communication system control
- .....Telecommunication control
- .....Communication system security
- .....Denial-of-service attack
- .....Impersonation attacks



.....Quantum key distribution	.....Baseband
.....Radio communication	.....DICOM
countermeasures	.....Digital audio broadcasting
.....Communication system signaling	.....Digital images
.....Received signal strength indicator	.....Digital multimedia broadcasting
.....Communication system software	.....Digital video broadcasting
.....Streaming media	.....DSL
.....Communication system traffic	.....ISDN
.....Communication system traffic control	.....Passband
.....Computer networks	.....Portable media players
.....Ad hoc networks	.....SONET
.....Computer network management	.....Spread spectrum communication
.....Content distribution networks	.....Duplex communication systems
.....Cyberspace	.....Full-duplex system
.....Diffserv networks	.....Half-duplex system
.....Domain Name System	.....Facsimile
.....Ethernet	.....FDDI
.....Heterogeneous networks	.....Indoor communication
.....Internet	.....Indoor environment
.....Intserv networks	.....Integrated sensing and communication
.....IP networks	.....Internet
.....Metropolitan area networks	.....Bot (Internet)
.....Multiprocessor interconnection networks	.....Botnet
.....Network function virtualization	.....Cloud computing
.....Network servers	.....Crowdsourcing
.....Next generation networking	.....Dark Web
.....Overlay networks	.....Instant messaging
.....Peer-to-peer computing	.....Internet of Things
.....Software defined networking	.....Internet privacy
.....Storage area networks	.....Internet security
.....Token networks	.....Internet telephony
.....Unicast	.....Internet topology
.....Virtual private networks	.....Linked data
.....Wide area networks	.....Middleboxes
.....Wireless access points	.....Semantic Web
.....Cross layer design	.....Social computing
.....Data buses	.....Web 2.0
.....Backplanes	.....Web conferencing
.....Data communication	.....Web services
.....Asynchronous communication	.....IP networks
.....Asynchronous transfer mode	.....TCPIP
.....Data buses	.....ISDN
.....Data transfer	.....B-ISDN
.....LoRa	.....Local area networks
.....Telecommunication buffers	.....Virtual LAN
.....Telemetry	.....Wireless LAN
.....Teleprinting	.....Low latency communication
.....Visible light communication	.....Ultra reliable low latency communication
.....Device-to-device communication	.....Machine-to-machine communications
.....Digital communication	



.....Massive machine type communications	.....Optical fiber networks
.....Magnetic communication	.....Optical fiber subscriber loops
.....Metropolitan area networks	.....Optical interconnections
.....Microwave communication	.....Optical packet switching
.....Rectennas	.....Optical wavelength conversion
.....Military communication	.....Scheduling algorithms
.....Reconnaissance	.....SONET
.....Mobile communication	.....Visible light communication
.....3G mobile communication	.....Personal communication networks
.....4G mobile communication	.....Protocols
.....5G mobile communication	.....Access protocols
.....6G mobile communication	.....Asynchronous transfer mode
.....Ambient networks	.....Border Gateway Protocol
.....Cellular technology	.....Consensus protocol
.....Dual band	.....Cryptographic protocols
.....Land mobile radio	.....HTTP
.....Location awareness	.....InterPlanetary File System
.....Mobile learning	.....LoRaWAN
.....Mobile nodes	.....Main-secondary
.....Mobile security	.....Multicast protocols
.....Mobile video	.....Multiprotocol label switching
.....Mobility models	.....Proof of stake
.....Open RAN	.....Proof of Work
.....SIM card	.....Routing protocols
.....Software radio	.....Smart contracts
.....Ultra-dense networks	.....Transport protocols
.....Molecular communication	.....Wireless application protocol
.....Multiaccess communication	.....Zero knowledge proof
.....Access charges	.....Quality of experience
.....Direct-sequence code-division multiple access	.....Quality of service
.....Frequency division multiaccess	.....Admission control
.....Multicarrier code division multiple access	.....Quality of transmission
.....Subscriber loops	.....Quantum communication
.....Time division multiple access	.....Quantum circuit
.....Time division synchronous code division multiple access	.....Quantum networks
.....Zero correlation zone	.....Radio communication
.....Multicast communication	.....Baseband
.....Multicast VPN	.....Bluetooth
.....Multimedia communication	.....Cellular technology
.....Hypermedia	.....Indoor radio communication
.....Nanocommunication	.....Land mobile radio
.....Narrowband	.....LoRa
.....NOMA	.....Millimeter wave communication
.....Optical fiber communication	.....Near field communication
.....FDDI	.....Packet radio networks
.....Free-space optical communication	.....Passband
.....Optical buffering	.....Personal area networks
	.....Radio broadcasting
	.....Radio communication
	countermeasures
	.....Radio frequency



- .....Radio links
- .....Radio spectrum management
- .....Satellite communications
- .....Satellite ground stations
- .....Software radio
- .....Zigbee
- .....Regional area networks
- .....WRAN
- .....Routing
- .....Wavelength routing
- .....Satellite communications
- .....Downlink
- .....Satellite broadcasting
- .....Satellite ground stations
- .....Uplink
- .....Satellite ground stations
- .....Semantic communication
- .....SIMO
- .....Spatial diversity
- .....Submillimeter wave communication
- .....Subscriber loops
- .....Switching systems
- .....Electronic switching systems
- .....Switching frequency
- .....Switching loss
- .....Telecommunication switching
- .....Synchronous digital hierarchy
- .....Telecommunications
- .....Ambient intelligence
- .....Feedback communications
- .....IP networks
- .....Radio access networks
- .....Railway communication
- .....Space communications
- .....Telecommunication computing
- .....Telecommunication network topology
- .....Telecommunication services
- .....Telematics
- .....Teleconferencing
- .....Telegraphy
- .....Telephony
- .....Teleprinting
- .....Teletext
- .....Terahertz communications
- .....Terrestrial communications
- .....Token networks
- .....UHF communication
- .....Underwater communication
- .....Vehicle-to-everything
- .....Vehicle-to-infrastructure
- .....Video conferencing
- .....Videophone systems
- .....Videotex
- .....Visual communication
- .....Wide area networks
- .....Low-power wide area networks
- .....Wideband
- .....Wireless communication
- .....Cognitive radio
- .....Cooperative communication
- .....Dedicated short range communication
- .....GSM
- .....MIMO
- .....MISO
- .....Open wireless architecture
- .....Point-to-multipoint communications
- .....Roaming
- .....SISO
- .....Smart devices
- .....Spatial diversity
- .....WiMAX
- .....Wireless access points
- .....Wireless application protocol
- .....Wireless networks
- .....WRAN
- .....Wireless mesh networks
- .....Wireless sensor networks
- .....Body sensor networks
- .....Event detection
- ...Couplers
- .....Directional couplers
- ...Green communications
- ...High-speed electronics
- .....High-speed integrated circuits
- .....High-speed networks
- .....Ultrafast electronics
- ...Image communication
- .....Facsimile
- .....Picture archiving and communication systems
- ...Information and communication technology
- .....Ambient assisted living
- ...Message systems
- .....Electronic mail
- .....Unified messaging
- .....Unsolicited e-mail
- .....Electronic messaging
- .....Instant messaging
- .....Unified messaging



- .....Postal services
- .....Publish subscribe systems
- .....Voice mail
- ....MIMO
- .....Massive MIMO
- .....Rician channels
- ....MISO
- ....Modulation
- .....Amplitude modulation
- .....Amplitude shift keying
- .....Quadrature amplitude modulation
- .....Chirp modulation
- .....Demodulation
- .....Digital modulation
- .....Constellation diagram
- .....Partial response signaling
- .....Frequency modulation
- .....Frequency shift keying
- .....Magnetic modulators
- .....Modulation coding
- .....Interleaved codes
- .....Optical modulation
- .....Cross-phase modulation
- .....Intensity modulation
- .....Optical modulators
- .....Electro-absorption modulators
- .....Electro-optic modulators
- .....Phase modulation
- .....Continuous phase modulation
- .....Cross-phase modulation
- .....Differential phase shift keying
- .....Phase shift keying
- .....Pulse modulation
- .....Pulse width modulation
- .....Pulse width modulation inverters
- .....Space vector pulse width modulation
- ....Multiplexing
- .....Code division multiplexing
- .....Demultiplexing
- .....Frequency division multiplexing
- .....Layered division multiplexing
- .....Multiplexing equipment
- .....Add-drop multiplexers
- .....OFDM
- .....Multiple access interference
- .....OFDM modulation
- .....Partial transmit sequences
- .....Peak to average power ratio
- .....Space division multiplexing
- .....Time division multiplexing
- .....Wavelength division multiplexing
- .....WDM networks
- ....Network topology
- .....Complex networks
- .....Computer network reliability
- .....Fault tolerant computer networks
- .....Network architecture
- .....Active networking
- .....Information-centric networking
- .....Network function virtualization
- .....Network slicing
- ....Presence network agents
- ....SISO
- ....TV
- .....Analog TV
- .....Cable TV
- .....Must-carry regulations
- .....Color TV
- .....Digital TV
- .....HDTV
- .....IPTV
- .....Mobile TV
- .....Smart TV
- .....Three-dimensional television
- .....Web TV
- ....UHF technology
- .....UHF antennas
- .....UHF circuits
- .....UHF integrated circuits
- .....UHF communication
- .....UHF devices
- .....UHF integrated circuits
- ....Ultra wideband technology
- .....Ultra wideband antennas
- .....Ultra wideband communication
- .....Ultra wideband radar
- ....VHF devices

**Components, packaging, and manufacturing technology**

- ....Component architectures
- ....Electronic components
- .....Capacitors
- .....Ceramic capacitors
- .....Power capacitors
- .....Varactors
- .....Coils
- .....Superconducting coils
- .....Connectors
- .....Plugs



- .....Sockets
- .....Diodes
- .....Active matrix organic light emitting diodes
- .....Diode lasers
- .....Light emitting diodes
- .....Organic light emitting diodes
- .....P-i-n diodes
- .....Schottky diodes
- .....Semiconductor lasers
- .....Superluminescent diodes
- .....Electrodes
- .....Anodes
- .....Cathodes
- .....Microelectrodes
- .....Fuses
- .....Inductors
- .....Active inductors
- .....Thick film inductors
- .....Thin film inductors
- .....Resistors
- .....Memristors
- .....Switched capacitor networks
- .....Varistors
- .....Structural plates
- .....Switches
- .....Contactors
- .....Microswitches
- .....Optical switches
- .....Transducers
- .....Acoustic transducers
- .....Biomedical transducers
- .....Capacitive transducers
- .....Chemical transducers
- .....Inductive transducers
- .....Piezoelectric transducers
- .....Resistive transducers
- .....Ultrasonic transducer arrays
- ....Electronic equipment manufacture
- .....Damascene integration
- .....Micromachining
- .....Radiation hardening (electronics)
- .....Semiconductor device manufacture
- .....Diffusion processes
- .....Flip-chip devices
- .....High-k gate dielectrics
- .....Physical unclonable function
- .....Semiconductor device doping
- .....Semiconductor epitaxial layers
- .....Semiconductor growth
- .....Silicidation

- .....Wafer bonding
- ....Electronics packaging
- .....Antenna-in-package
- .....Ball grid arrays
- .....Chip scale packaging
- .....System-in-package
- ....Environmentally friendly manufacturing techniques
- ....Integrated circuit manufacture
- .....Surface mount technology
- .....Ball grid arrays
- ....Integrated circuit packaging
- .....Multichip modules
- .....Plastic integrated circuit packaging
- ....Semiconductor device packaging
- ....Thermal management of electronics
- .....Electronic packaging thermal management
- .....Electronics cooling

### **Computational and artificial intelligence**

- ....Artificial intelligence
- .....Affective computing
- .....AI accelerators
- .....Artificial general intelligence
- .....Autonomous robots
- .....Bio-inspired computing
- .....Cognitive systems
- .....Commonsense reasoning
- .....Context awareness
- .....Context management
- .....Conversational artificial intelligence
- .....Chatbots
- .....Virtual assistants
- .....Cooperative systems
- .....Edge AI
- .....Explainable AI
- .....Foundation models
- .....Generative AI
- .....Prompt engineering
- .....Intelligent systems
- .....Autonomous systems
- .....Collective intelligence
- .....Hyper-intelligent systems
- .....Intelligent automation
- .....Intelligent robots
- .....Knowledge based systems
- .....Expert systems
- .....Mobile agents
- .....Knowledge engineering



- .....Inference mechanisms
- .....Knowledge acquisition
- .....Knowledge discovery
- .....Knowledge representation
- .....Large language models
- .....Generative Pre-trainer transformer
- .....Learning (artificial intelligence)
- .....Distance learning
- .....Naive Bayes methods
- .....Nearest neighbor methods
- .....Learning systems
- .....Active learning
- .....Backpropagation
- .....Cognitive systems
- .....Collective learning
- .....Electronic learning
- .....Hybrid learning
- .....Immersive learning
- .....Learning automata
- .....Learning management systems
- .....Self-supervised learning
- .....Semisupervised learning
- .....Stability plasticity
- .....Supervised learning
- .....Unsupervised learning
- .....Weak supervision
- .....Machine learning
- .....Adversarial machine learning
- .....Association rule learning
- .....Attention mechanisms
- .....Automated machine learning
- .....Boosting
- .....Concept drift
- .....Deep learning
- .....Deep reinforcement learning
- .....Diffusion models
- .....Dimensionality reduction
- .....Ensemble learning
- .....Explainable AI
- .....Federated learning
- .....Few shot learning
- .....Generative Pre-trainer transformer
- .....High dimensional data
- .....Hyperparameter optimization
- .....Imitation learning
- .....Incremental learning
- .....Multi-armed bandit problem
- .....One shot learning
- .....Random forests
- .....Reinforcement learning
- .....Relevance vector machines
- .....Representation learning
- .....Robot learning
- .....Statistical learning
- .....Tiny machine learning
- .....Transfer learning
- .....Machine listening
- .....Prediction methods
- .....Linear predictive coding
- .....Predictive coding
- .....Predictive encoding
- .....Predictive models
- .....Retrieval augmented generation
- .....Text to image
- .....Text to video
- .....Virtual artifact
- ....Autonomous mental development
- ....Computational intelligence
- .....Computation theory
- .....Computational chemistry
- .....Computational complexity
- .....Computational statistics
- .....Concurrent computing
- .....Greedy algorithms
- .....Reservoir computing
- .....Support vector machines
- .....Turing completeness
- .....Computational cybernetics
- .....Evolutionary computation
- .....Evolutionary robotics
- .....Particle swarm optimization
- .....Fuzzy systems
- .....Fuzzy control
- .....Fuzzy neural networks
- .....Hybrid intelligent systems
- .....Genetic algorithms
- .....Genetic operators
- ....Logic
- .....Fuzzy logic
- .....Takagi-Sugeno model
- .....Multivalued logic
- .....Probabilistic logic
- .....Sufficient conditions
- ....Machine intelligence
- .....Pattern analysis
- ....Neural networks
- .....Artificial neural networks
- .....Autoencoders
- .....Convolutional neural networks
- .....Hebbian theory
- .....Long short term memory
- .....Neural architecture search



- .....Residual neural networks
- .....Self-organizing feature maps
- .....Spiking neural networks
- .....Biological neural networks
- .....Cellular neural networks
- .....Feedforward neural networks
- .....Extreme learning machines
- .....Multilayer perceptrons
- .....Graph neural networks
- .....Graph convolutional networks
- .....Multi-layer neural network
- .....Neural network compression
- .....Neural network hardware
- .....Perception evolution networks
- .....Radial basis function networks
- .....Recurrent neural networks
- .....Bidirectional long short term memory
- .....Echo state networks
- .....Hopfield neural networks
- .....Stability plasticity

**Computers and information processing**

- ....Approximate computing
- ....Computer applications
  - .....Application virtualization
  - .....Edge computing
  - .....Big Data applications
  - .....Bot (Internet)
  - .....Computer aided analysis
  - .....Computer aided engineering
  - .....Computer aided instruction
  - .....Hybrid learning
  - .....Learning management systems
  - .....Computer generated music
  - .....Computer integrated manufacturing
  - .....Control engineering computing
  - .....Engineering computing
  - .....Green computing
  - .....High energy physics instrumentation computing
  - .....Linear particle accelerator
  - .....Knowledge management
  - .....Knowledge transfer
  - .....Mathematics computing
  - .....MATLAB
  - .....Medical information systems
  - .....Electronic medical records
  - .....Military computing
  - .....Mobile applications
- .....Mobility as a service
- .....Physics computing
- .....Power engineering computing
- .....Power system analysis computing
- .....Publishing
  - .....Bibliometrics
  - .....Desktop publishing
  - .....Electronic publishing
  - .....Journalism
  - .....Open Access
  - .....Scientific publishing
  - .....Scientific computing
  - .....Telecommunication computing
  - .....Internetworking
  - .....Soft switching
  - .....Virtual assistants
  - .....Personal voice assistants
  - .....Virtual enterprises
  - .....Virtual manufacturing
  - .....Virtual machining
  - .....Web sites
  - .....Uniform resource locators
  - .....Web design
  - .....World Wide Web
  - .....Bot (Internet)
  - .....Mashups
- ....Computer architecture
  - .....Accelerator architectures
  - .....Data structures
  - .....Arrays
  - .....Binary decision diagrams
  - .....Null value
  - .....Octrees
  - .....Persistent identifiers
  - .....Table lookup
  - .....Tree data structures
  - .....Dynamic voltage scaling
  - .....Memory architecture
  - .....Memory management
    - .....In-memory computing
    - .....Neural network compression
    - .....Multiprocessor interconnection
    - .....Hypercubes
    - .....Parallel architectures
    - .....Multicore processing
    - .....Reconfigurable architectures
    - .....Reconfigurable intelligent surfaces
- ....Computer interfaces
  - .....Application programming interfaces
  - .....Restful API
  - .....WebRTC



.....Browsers	.....Internet telephony
.....Field buses	.....Internet topology
.....Firewire	.....Linked data
.....Haptic interfaces	.....Middleboxes
.....Data gloves	.....Semantic Web
.....Force feedback	.....Social computing
.....Grasping	.....Web 2.0
.....Tactile Internet	.....Web conferencing
.....HDMI	.....Web services
.....Hypertext systems	.....Intserv networks
.....HTTP	.....Space-air-ground integrated networks
.....Input devices	.....IP networks
.....Interface phenomena	.....TCPIP
.....Network interfaces	.....Metropolitan area networks
.....Interface states	.....Multiprocessor interconnection networks
.....Musical instrument digital interfaces	.....Network function virtualization
.....Ports (computers)	.....Cloud radio access networks
.....System buses	.....Virtual LAN
....Computer networks	.....Network servers
.....Ad hoc networks	.....Next generation networking
.....AODV	.....Overlay networks
.....Mesh networks	.....Dark Web
.....Mobile ad hoc networks	.....Peer-to-peer computing
.....Vehicular ad hoc networks	.....InterPlanetary File System
.....Computer network management	.....Software defined networking
.....Computer network reliability	.....Service function chaining
.....Disruption tolerant networking	.....Virtual LAN
.....Management information base	.....Storage area networks
.....Middleboxes	.....Token networks
.....Network address translation	.....Unicast
.....Network synthesis	.....Virtual private networks
.....Source address validation	.....Extranets
.....Content distribution networks	.....Wide area networks
.....Cyberspace	.....Low-power wide area networks
.....Cyberbullying	.....Wireless access points
.....Diffserv networks	....Computer performance
.....Domain Name System	.....Computer errors
.....Ethernet	.....Computer crashes
.....Energy efficient ethernet	.....Hardware acceleration
.....EPON	.....Performance loss
.....Heterogeneous networks	....Computer peripherals
.....Internet	.....Disk drives
.....Bot (Internet)	.....Keyboards
.....Botnet	.....Modems
.....Cloud computing	.....Printers
.....Crowdsourcing	.....Laser printers
.....Dark Web	....Computer science
.....Instant messaging	.....Computational neuroscience
.....Internet of Things	.....Formal languages
.....Internet privacy	
.....Internet security	



- .....Computer languages
- .....Runtime library
- .....Network theory (graphs)
- .....Programming
  - .....Answer set programming
  - .....Augmented reality
  - .....Automatic programming
  - .....Concatenated codes
  - .....Functional programming
  - .....Granular computing
  - .....Integer linear programming
  - .....Logic programming
  - .....Microprogramming
  - .....Object oriented methods
  - .....Object oriented programming
  - .....Opportunistic software systems development
  - .....Parallel programming
  - .....Performance analysis
  - .....Programming profession
  - .....Robot programming
- ....Computer security
  - .....Application security
  - .....Authentication
    - .....Multi-factor authentication
    - .....Nonfungible tokens
  - .....Cloud computing security
  - .....Computer crime
  - .....Counterfeiting
  - .....Cyber terrorism
  - .....Cyber threat intelligence
  - .....Cyberattack
    - .....SQL injection
  - .....Computer hacking
    - .....Hackathon
    - .....Cross-site scripting
    - .....Cyber espionage
    - .....Cyber warfare
    - .....Cyberattack
      - .....Session hijacking
  - .....Data integrity
    - .....Data enhancement
    - .....Non-repudiation
  - .....Denial-of-service attack
    - .....Distributed denial-of-service attack
  - .....Firewalls (computing)
  - .....Honey pot (computing)
  - .....Identity management systems
    - .....Federated identity
  - .....Internet security
  - .....Mobile security
- .....Passwords
- .....Penetration testing
- .....Permission
- .....Phishing
- .....Proof of Work
- .....Trusted computing
- ...Computers
  - .....Analog computers
  - .....Calculators
    - .....Difference engines
  - .....Digital computers
    - .....Mainframes
    - .....Microcomputers
      - .....Portable computers
        - .....Workstations
  - .....Parallel machines
    - .....Supercomputers
      - .....Exascale computing
    - .....Tablet computers
    - .....Wearable devices
      - .....Smart glasses
      - .....Wearable antennas
      - .....Wearable Health Monitoring Systems
        - .....Concurrency control
        - .....Processor scheduling
          - .....Scheduling algorithms
    - .....Data systems
      - .....Buffer storage
        - .....Triples (Data structure)
      - .....Data acquisition
        - .....Data transparency
          - .....Fastbus
            - .....User-generated content
      - .....Data centers
        - .....Data center power
        - .....Data compression
          - .....Adaptive coding
          - .....Audio compression
            - .....Huffman coding
            - .....Neural network compression
            - .....Point cloud compression
            - .....Source coding
              - .....Test data compression
          - .....Transform coding
        - .....Data conversion
          - .....Analog-digital conversion
          - .....Digital-analog conversion
        - .....Data engineering
          - .....Data handling
            - .....Data assimilation



.....Data augmentation	.....Web 2.0
.....Data dissemination	.....Web conferencing
.....Data encapsulation	.....Web services
.....Data enhancement	.....ISDN
.....Data governance	.....B-ISDN
.....Data ingestion	.....Local area networks
.....Data integrity	.....Virtual LAN
.....Data retrieval	.....Wireless LAN
.....Document handling	.....Metropolitan area networks
.....Merging	.....Smart agriculture
.....Open data	.....Token networks
.....Sorting	.....Virtual artifact
.....Turing completeness	...Distributed computing
.....Data processing	.....Client-server systems
.....Associative processing	.....Middleware
.....Business data processing	.....Servers
.....Data analysis	.....Cluster computing
.....Data collection	.....Decentralized applications
.....Data integration	.....Diffserv networks
.....Data preprocessing	.....Distributed databases
.....Data transfer	.....Blockchains
.....Information exchange	.....Distributed information systems
.....Spreadsheet programs	.....Distributed management
.....Text processing	.....Publish-subscribe
.....Virtual enterprises	.....Internet
.....Data warehouses	.....Bot (Internet)
...Database machines	.....Botnet
...Digital systems	.....Cloud computing
.....Digital preservation	.....Crowdsourcing
.....Digital storage	.....Dark Web
.....DNA data storage	.....Instant messaging
.....Solid state drives	.....Internet of Things
.....Digital transformation	.....Internet privacy
.....Fifth Industrial Revolution	.....Internet security
.....Fourth Industrial Revolution	.....Internet telephony
.....Internet	.....Internet topology
.....Bot (Internet)	.....Linked data
.....Botnet	.....Middleboxes
.....Cloud computing	.....Semantic Web
.....Crowdsourcing	.....Social computing
.....Dark Web	.....Web 2.0
.....Instant messaging	.....Web conferencing
.....Internet of Things	.....Web services
.....Internet privacy	.....Metacomputing
.....Internet security	.....Grid computing
.....Internet telephony	.....Peer-to-peer computing
.....Internet topology	.....InterPlanetary File System
.....Linked data	...DNA computing
.....Middleboxes	...File servers
.....Semantic Web	...Hardware
.....Social computing	.....Hardware acceleration



- .....Hardware security
- .....Input devices
- .....Open source hardware
- .....Reconfigurable devices
- .....Wireless access points
- ....High performance computing
- .....Exascale computing
- ....Image processing
  - .....Active shape model
  - .....Blob detection
  - .....Corner detection
  - .....Feature detection
  - .....Feature extraction
  - .....Fiducial markers
  - .....Geophysical image processing
  - .....Gray-scale
  - .....Image analysis
    - .....Image categorization
    - .....Image classification
    - .....Image motion analysis
    - .....Image quality
    - .....Image sequence analysis
    - .....Image texture analysis
    - .....Neural radiance field
    - .....Object detection
    - .....Subtraction techniques
  - .....Image annotation
  - .....Image capture
  - .....Image coding
  - .....Image color analysis
  - .....Image decomposition
  - .....Image denoising
  - .....Image enhancement
  - .....Image filtering
  - .....Image fusion
  - .....Image preprocessing
  - .....Image recognition
    - .....Fine-grained image recognition
    - .....Image edge detection
    - .....Image reconstruction
    - .....Image registration
    - .....Image representation
      - .....Digital representation
    - .....Image resolution
      - .....Contrast resolution
      - .....High-resolution imaging
      - .....Spatial resolution
      - .....Superresolution
    - .....Image restoration
    - .....Image sampling
    - .....Image segmentation
      - .....Instance segmentation
      - .....Semantic segmentation
  - .....Image sequences
  - .....Image stitching
  - .....Image synthesis
    - .....Human image synthesis
    - .....Neural radiance field
  - .....Image texture
  - .....Image transformation
    - .....Image augmentation
    - .....Image morphing
    - .....Image skeletonization
    - .....Image thinning
  - .....Neural style transfer
- .....Machine vision
  - .....Object recognition
  - .....Object segmentation
- .....Morphological operations
  - .....Image morphing
  - .....Image thinning
- .....Optical feedback
- .....Pansharpening
- .....Saliency detection
- .....Smart pixels
- .....Spatial coherence
- .....Structure from motion
- .....Table lookup
- .....Text detection
- .....Thresholding (Imaging)
- ....Memory
  - .....Analog memory
  - .....Associative memory
  - .....Cache memory
    - .....Cache storage
  - .....Content addressable storage
  - .....Flash memories
    - .....Flash memory cells
  - .....Magnetic memory
    - .....Floppy disks
    - .....Hard disks
  - .....Memory management
    - .....In-memory computing
    - .....Neural network compression
  - .....Nonvolatile memory
    - .....Racetrack memory
    - .....Phase change memory
      - .....Phase change random access memory
  - .....Random access memory
    - .....DRAM chips



- .....Phase change random access memory
- .....Resistive RAM
- .....SDRAM
- .....SRAM cells
- .....SRAM chips
- .....Read only memory
- .....PROM
- .....Read-write memory
- .....Registers
- .....Shift registers
- .....Scanning probe data storage
- .....Semiconductor memory
- .....Integrated memory circuits
- ...Mobile computing
- .....Multi-access edge computing
- .....Wireless access points
- ...Molecular computing
- ...Multitasking
- .....Parametric study
- ...Open systems
- .....Open Access
- .....Public domain software
- .....Open Educational Resources
- .....Physical layer
- .....Physical layer security
- ...Optical computing
- ...Parallel processing
- .....Multiprocessing systems
- .....Data flow computing
- .....Processor scheduling
- .....Systolic arrays
- .....Multithreading
- .....Parallel algorithms
- .....Pipeline processing
- .....Single instruction multiple data
- ...Pattern recognition
- .....Active shape model
- .....Activity recognition
- .....Human activity recognition
- .....Character recognition
- .....Clustering methods
- .....Pattern clustering
- .....Data mining
- .....Anomaly detection
- .....Association rule learning
- .....Data privacy
- .....Process mining
- .....Text analysis
- .....Text mining
- .....Web mining
- .....Face recognition
- .....Fingerprint recognition
- .....Gesture recognition
- .....Sign language
- .....Handwriting recognition
- .....Forgery
- .....Nearest neighbor methods
- .....Pattern matching
- .....Image matching
- .....Sound recognition
- .....Speech recognition
- .....Automatic speech recognition
- .....Personal voice assistants
- .....Speech analysis
- .....Speech to text
- .....Text recognition
- .....Large language models
- .....Text to video
- ...Pervasive computing
- .....Ubiquitous computing
- .....Context-aware services
- .....Wearable devices
- .....Smart glasses
- .....Wearable antennas
- .....Wearable Health Monitoring
- Systems
- ...Petascale computing
- ...Platform virtualization
- ...Probabilistic computing
- ...Probability computing
- ...Quantum computing
- .....Quantum advantage
- .....Quantum algorithm
- .....Quantum annealing
- .....Quantum cellular automata
- .....Quantum chemistry
- .....Quantum circuit
- .....Quantum networks
- .....Quantum repeaters
- .....Quantum simulation
- .....Qubit
- .....Spin qubits
- ...Real-time systems
- .....Telexistence
- .....WebRTC
- ...Software
- .....Anti-virus software
- .....Application software
- .....Decentralized applications
- .....Closed box
- .....Embedded software



- .....Freeware
- .....Glass box
- .....Malware
  - .....Computer viruses
  - .....Computer worms
  - .....Ransomware
  - .....Rootkit
  - .....Trojan horses
- .....Middleware
  - .....Mediation
  - .....Message-oriented middleware
  - .....Web services
- .....Open source software
  - .....Open banking
- .....Optical character recognition
  - .....License plate recognition
- .....Privacy-invasive software
  - .....Spyware
- .....Public domain software
  - .....Python
  - .....R language
- .....Soft sensors
- .....Software agents
  - .....Agent-based modeling
  - .....Autonomous agents
  - .....Botnet
  - .....Intelligent agents
- .....Software as a service
- .....Software debugging
  - .....Software design
- .....Software maintenance
- .....Software packages
  - .....EMTDC
  - .....PSCAD
  - .....SPICE
- .....Software performance
- .....Software quality
- .....Software reusability
- .....Software safety
- .....Software systems
- .....Software tools
  - .....Authoring systems
- .....System software
  - .....File systems
  - .....Operating systems
  - .....Program processors
  - .....Utility programs
- ....Software engineering
  - .....Capability maturity model
  - .....Computer aided software engineering
  - .....Formal verification

- .....Full stack
  - .....Programming environments
  - .....Release engineering
  - .....Runtime
    - .....Dynamic compiler
    - .....Runtime environment
  - .....Software architecture
    - .....Client-server systems
    - .....Deep architecture
    - .....Dew computing
    - .....Microarchitecture
    - .....Representational state transfer
    - .....Restful API
  - .....Software libraries
  - .....Software product lines
- ...System recovery
  - .....Checkpointing
  - .....Core dumps
  - .....Debugging
- ...Time sharing computer systems
- ...Virtual machine monitors

### Consumer electronics

- ....Ambient intelligence
- ....Audio systems
  - .....3D audio
  - .....Ambisonics
  - .....Audio tapes
  - .....Audio-visual systems
    - .....HDMI
  - .....Auditory displays
  - .....Headphones
  - .....Immersive audio
  - .....Loudspeakers
  - .....Microphones
    - .....Hydrophones
    - .....Microphone arrays
  - .....Pitch control (audio)
  - .....Portable media players
  - .....Sonification
  - .....Spatial audio
  - .....Video description
- ...Home automation
  - .....Portable media players
  - .....Refrigerators
  - .....Smart homes
  - .....Washing machines
- ...Home computing
- ...Low power electronics
- ...Microwave ovens



- ....Multimedia systems
  - .....Multimedia communication
  - .....Hypermedia
  - .....Multimedia computing
  - .....Multimedia databases

**Control systems**

- ....Admittance control
- ....Automatic control
  - .....Power generation control
- ....Automatic generation control
- ....Automotive control
- ....Autopilot
- ....Bidirectional control
- ....Block signalling
- ....Brakes
- ....CAMAC
- ....Centralized control
- ....Closed loop systems
- ....Control design
- ....Control engineering
  - .....Control system security
  - .....Physical unclonable function
- ....Control equipment
  - .....Actuators
    - .....Dielectric elastomer actuators
    - .....Electrostatic actuators
    - .....Electrothermal actuators
    - .....Hydraulic actuators
    - .....Intelligent actuators
    - .....Microactuators
    - .....Piezoelectric actuators
    - .....Pneumatic actuators
  - .....Fasteners
  - .....Microcontrollers
  - .....Regulators
  - .....Remote control
  - .....Servosystems
  - .....Servomotors
  - .....Switches
    - .....Contactors
    - .....Microswitches
    - .....Optical switches
  - .....Switchgear
    - .....Circuit breakers
    - .....Interrupters
    - .....Relays
  - .....Telecontrol equipment
  - .....Thermostats
- ....Control system synthesis

- ....Controllability
- ....Controller area networks
- ....Cruise control
- ....Decentralized control
  - .....Consensus control
  - .....Distributed parameter systems
- ....Delay systems
  - .....Added delay
  - .....Delay lines
- ....Digital control
  - .....Programmable control
  - .....Flow graphs
- ....Fault tolerant control
- ....Feedback
  - .....Feedback circuits
  - .....Output feedback
  - .....Negative feedback
  - .....Neurofeedback
- ....Feedback linearization
- ....Fluid flow control
- ....Fluidics
  - .....Microfluidics
  - .....Nanofluidics
- ....Gaze tracking
  - .....Electrooculography
- ....Homeostasis
- ....Linear feedback control systems
  - .....Frequency locked loops
  - .....Phase locked loops
  - .....State feedback
  - .....Tracking loops
- ....Magnetic variables control
- ....Mechanical variables control
  - .....Displacement control
  - .....Force control
  - .....Level control
    - .....Gyroscopes
  - .....Motion control
    - .....Collision avoidance
    - .....Collision mitigation
    - .....Formation control
    - .....Kinetic theory
    - .....Motion planning
    - .....Path planning
    - .....Visual servoing
  - .....Pitch control (position)
  - .....Position control
    - .....Nanopositioning
  - .....Shape control
  - .....Size control
  - .....Strain control



- .....Stress control
- .....Thickness control
- .....Torque control
- .....Velocity control
- .....Angular velocity control
- .....Vibration control
- .....Weight control
- ...Medical control systems
- ...Missile control
- ...Moisture control
- .....Humidity control
- ...Motion compensation
- ...Networked control systems
- ...Nonlinear control systems
- ...Open loop systems
- ...Optical control
- .....Lighting control
- .....Optical variables control
- .....Optogenetics
- ...Optimal control
- .....Bang-bang control
- .....Infinite horizon
- ...PD control
- ...PI control
- ...Pneumatic systems
- ...Positive train control
- ...Pressure control
- ...Proportional control
- ...Radio control
- ...Robot control
- .....Robot motion
- .....2-DOF
- .....3-DOF
- .....5-DOF
- .....6-DOF
- ...SCADA systems
- ...Sensorless control
- ...Sliding mode control
- ...Supervisory control
- .....SCADA systems
- ...Thermal variables control
- .....HVAC
- .....Temperature control
- .....Cooling
- .....Heating systems
- .....Thermal analysis
- .....Thermomechanical processes
- ...Traffic control
- .....Advanced driver assistance systems
- .....Queueing analysis
- .....Road traffic control

- .....Road traffic
- .....Vehicle routing

## Dielectrics and electrical insulation

- ...Dielectrics
- .....Dielectric constant
- .....High-k gate dielectrics
- .....Dielectric devices
- .....Capacitors
- .....Ferroelectric devices
- .....Piezoelectric devices
- .....Pyroelectric devices
- .....Dielectric losses
- .....Dielectric substrates
- .....Dielectrophoresis
- .....Electrohydrodynamics
- .....Electrokinetics
- .....Electrostriction
- ...Electric breakdown
- .....Avalanche breakdown
- .....Corona
- .....Dielectric breakdown
- .....Arc discharges
- .....Discharges (electric)
- .....Electrostatic discharges
- .....Flashover
- .....Glow discharges
- .....Partial discharges
- .....Surface discharges
- .....Vacuum breakdown
- .....Sparks
- ...Electromagnetic fields
- .....Electric fields
- .....Acoustoelectric effects
- .....Casimir effect
- .....Nonuniform electric fields
- .....Electromagnetic field theory
- .....Electromagnetic spectrum
- .....Windings
- .....Machine windings
- ...Insulation
- .....Cable insulation
- .....Power cable insulation
- .....Ceramics
- .....Bioceramics
- .....Porcelain
- .....Gas insulation
- .....Sulfur hexafluoride
- .....Insulators
- .....Metal-insulator structures



- .....Plastic insulators
- .....Rubber
- .....Topological insulators
- .....Trees - insulation
- .....Isolation technology
- .....Oil insulation
- .....Oil filled cables
- .....Plastic insulation

**Education**

- ....Adaptive learning
- ....Career development
- .....Continuing education
- .....Jobs listings
- .....Mentoring
- ....Educational courses
- .....Curriculum development
- .....Open Educational Resources
- ....Educational institutions
- .....Museums
- .....Virtual museums
- ....Educational programs
- .....Accreditation
- .....Continuing education
- .....Pre-college engineering
- .....Scholarships
- .....Self-study courses
- .....Seminars
- .....STEM
- .....Tutorials
- ....Educational technology
- .....Computer aided instruction
- .....Hybrid learning
- .....Learning management systems
- .....Courseware
- .....Electronic learning
- .....Mobile learning
- ....Engineering education
- .....Biomedical engineering education
- .....Communication engineering education
- .....Computer science education
- .....Control engineering education
- .....Electrical engineering education
- .....Electronics engineering education
- .....Engineering students
- .....Physics education
- .....Power engineering education
- .....Student experiments
- .....Systems engineering education
- ....Humanities

- .....Archeology
- .....Art
- .....Digital art
- .....Fractal art
- .....History
- .....Music
- .....Acoustics
- .....Computer generated music
- .....Electronic music
- .....Musical instrument digital interfaces
- .....Rhythm
- .....Timbre
- .....Natural languages
- .....Lexicon
- .....Linguistics
- .....Natural language processing
- .....Translation
- .....Social sciences
- .....Anthropology
- .....Behavioral sciences
- .....Psychology
- .....Sociology
- ....Training
- .....Certification
- .....Industrial training
- .....Management training
- .....On the job training
- .....Qualifications
- .....Vocational training

**Electromagnetic compatibility and interference**

- ....Electromagnetic compatibility
- .....Immunity testing
- .....Reverberation chambers
- ....Electromagnetics
- .....Electromagnetic analysis
- .....Air gaps
- .....Characteristic mode analysis
- .....Computational electromagnetics
- .....Delay effects
- .....Electromagnetic forces
- .....Electromagnetic refraction
- .....Permeability
- .....Spark gaps
- .....Time-domain analysis
- .....Electromagnetic coupling
- .....Mutual coupling
- .....Optical coupling
- .....Electromagnetic devices



- .....Baluns
- .....Electromagnetic induction
- .....Eddy currents
- .....Inductive power transmission
- .....Electromagnetic metamaterials
- .....Microwave metamaterials
- .....Terahertz metamaterials
- .....Electromagnetic pulses
- .....Electromagnetic radiation
- .....Bremsstrahlung
- .....Correlators
- .....Electromagnetic wave absorption
- .....Frequency
- .....Gamma-rays
- .....Line-of-sight propagation
- .....Terahertz radiation
- .....Electromagnetic shielding
- .....Cable shielding
- .....Magnetic shielding
- .....Electromagnetic transients
- .....EMP radiation effects
- .....EMTDC
- .....EMTP
- .....Power system transients
- .....Surges
- .....Proximity effects
- ....Interference
- .....Clutter
- .....Crosstalk
- .....Diffraction
- .....Electron backscatter diffraction
- .....Echo interference
- .....Electromagnetic interference
- .....Radiofrequency interference
- .....Specific absorption rate
- .....Electromagnetic radiative interference
- .....Electrostatic interference
- .....Immunity testing
- .....Interchannel interference
- .....Interference cancellation
- .....Interference channels
- .....Interference constraints
- .....Interference elimination
- .....Interference suppression
- .....Intersymbol interference
- .....Rain fading
- .....Terrain factors
- .....TV interference
- ....Radar
- .....Airborne radar
- .....Bistatic radar
- .....Cognitive radar
- .....Doppler radar
- .....Ground penetrating radar
- .....High frequency radar
- .....Laser radar
- .....Meteorological radar
- .....Millimeter wave radar
- .....Multistatic radar
- .....MIMO radar
- .....Passive radar
- .....Quantum radar
- .....Radar applications
- .....Radar countermeasures
- .....Radar detection
- .....Radar imaging
- .....Radar measurements
- .....Radar polarimetry
- .....Radar remote sensing
- .....Radar tracking
- .....Radar clutter
- .....Radar cross-sections
- .....Radar equipment
- .....Radar theory
- .....Spaceborne radar
- .....Spread spectrum radar
- .....Synthetic aperture radar
- .....Inverse synthetic aperture radar
- .....Polarimetric synthetic aperture radar
- .....Ultra wideband radar

**Electron devices**

- ....Cathode ray tubes
- ....Electron guns
- ....Electron multipliers
- ....Electron tubes
- .....Field emitter arrays
- .....Klystrons
- .....Magnetrons
- .....Thyratrons
- .....Traveling wave tubes
- ....Mechatronics
- .....Biomechatronics
- ....Microelectromechanical systems
- .....Microelectromechanical devices
- .....Microactuators
- .....Micromotors
- .....Micropumps
- .....Microvalves



- .....Radiofrequency microelectromechanical systems
- ....Microfluidics
- ....Micromechanical devices
- .....Biomedical microelectromechanical systems
- .....Fluidic microsystems
- .....Microfabrication
- ....Photoelectricity
- .....Photovoltaic effects
- .....Shunts (electrical)
- ....Photovoltaic cells
- .....Light trapping
- ....Quantum computing
- .....Quantum advantage
- .....Quantum algorithm
- .....Quantum annealing
- .....Quantum cellular automata
- .....Quantum chemistry
- .....Quantum circuit
- .....Quantum networks
- .....Quantum repeaters
- .....Quantum simulation
- .....Qubit
- .....Spin qubits
- ....Quantum well devices
- .....Quantum well lasers
- .....Quantum cascade lasers
- .....Quantum wells
- .....Two dimensional hole gas
- ....Semiconductivity
- ....Semiconductor devices
- .....Flip-chip devices
- .....Gunn devices
- .....Hall effect devices
- .....Junctions
- .....Heterojunctions
- .....Hybrid junctions
- .....P-n junctions
- .....Waveguide junctions
- .....MIS devices
- .....Charge coupled devices
- .....MOS devices
- .....MONOS devices
- .....Piezoresistive devices
- .....P-i-n diodes
- .....Power semiconductor devices
- .....Power transistors
- .....Power semiconductor switches
- .....Bipolar transistors
- .....Thyristors
- .....Quantum dots
- .....Quantum well lasers
- .....Quantum cascade lasers
- .....Schottky diodes
- .....Semiconductor counters
- .....Semiconductor detectors
- .....Semiconductor device modeling
- .....Semiconductor device noise
- .....Semiconductor diodes
- .....P-i-n diodes
- .....Schottky diodes
- .....Semiconductor-metal interfaces
- .....Superluminescent diodes
- .....Varactors
- .....Semiconductor lasers
- .....Laser tuning
- .....Quantum dot lasers
- .....Quantum well lasers
- .....Semiconductor laser arrays
- .....Semiconductor optical amplifiers
- .....Surface emitting lasers
- .....Semiconductor waveguides
- .....Semiconductor-insulator interfaces
- .....Silicon devices
- .....SONOS devices
- .....Superluminescent diodes
- .....Surface emitting lasers
- .....Vertical cavity surface emitting lasers
- .....Thermistors
- .....Transistors
- .....Field effect transistors
- .....Heterojunction bipolar transistors
- .....Millimeter wave transistors
- .....Phototransistors
- .....Static induction transistors
- ....Single electron devices
- .....Single electron memory
- .....Hetero-nanocrystal memory
- .....Single electron transistors
- ....Thick film devices
- .....Thick film inductors
- ....Thin film devices
- .....Film bulk acoustic resonators
- .....Thin film inductors
- .....Thin film transistors
- .....Organic thin film transistors
- ....Tunneling
- .....Gate leakage
- .....Josephson effect
- .....Magnetic tunneling



- .....Resonant tunneling devices
- .....Superconductive tunneling
- .....Tunneling magnetoresistance
- ...Vacuum technology
  - .....Photomultipliers
  - .....Vacuum electronics
  - .....Vacuum systems
  - .....Gettering

**Electronic design automation and methodology**

- ....Design automation
  - .....CAD/CAM
  - .....Logic design
    - .....Reconfigurable logic
    - .....PSCAD
- ....Design methodology
  - .....Design for disassembly
  - .....Design for experiments
  - .....Design for manufacture
  - .....Design for quality
  - .....Design for testability
  - .....Design standards
  - .....Design tools
  - .....Extensibility
  - .....Graphics
    - .....Animation
    - .....Character generation
    - .....Computer graphics
    - .....Engineering drawings
    - .....Layout
    - .....Shape
    - .....Symbols
    - .....Virtual reality
    - .....Visualization
  - .....Green design
    - .....Ecodesign
    - .....Green computing
  - .....Integrated design
  - .....Process design
    - .....Pattern formation
    - .....Process modeling
  - .....Product design
  - .....Prototypes
    - .....Breadboard
    - .....Rapid prototyping
  - .....Technical drawing
  - .....Time to market
  - .....User centered design
  - .....Virtual prototyping

**Engineering – general**

- ....Acoustical engineering
- ....Agricultural engineering
  - .....Deforestation
- ....Bio-inspired engineering
  - .....Bio-inspired computing
  - .....Bio-inspired control
  - .....Bio-inspired robotics
- ....Chemical engineering
- ....Civil engineering
  - .....Geotechnical engineering
    - .....Excavation
    - .....Geotechnical structures
      - .....Dams
  - .....Railway engineering
    - .....Railway safety
  - .....Structural engineering
    - .....Offshore installations
- ....Concurrent engineering
- ....Design engineering
  - .....Design tools
- ....Electrical engineering
  - .....Electrical engineering computing
- ....Engineering profession
  - .....Professional aspects
- ....Environmental engineering
  - .....Maintenance engineering
    - .....Maintenance management
    - .....Predictive maintenance
    - .....Preventive maintenance
      - .....Condition monitoring
    - .....Systems support
      - .....Smart systems
- ....Marine engineering
- ....Mechanical engineering
  - .....Dynamic response
  - .....Mechanical power transmission
    - .....Torque converters
  - .....Mechanical systems
    - .....Automated parking
    - .....Mechanical energy
      - .....Micromechanical devices
    - .....Suspensions (mechanical systems)
- ....Optical engineering
- ....Precision engineering
- ....Production engineering
  - .....Production planning
    - .....Capacity planning
    - .....Materials requirements planning
    - .....Process planning



- ....Research and development
  - .....Translational research
- ....Reverse engineering
- ....Sanitary engineering
- ....Standardization
  - .....Formal specifications
  - .....Guidelines
  - .....Standards
    - .....Standards categories
    - .....Standards organizations
    - .....Standards publications
- ....Thermal engineering

**Engineering in medicine and biology**

- ....Biology
  - .....Biochemistry
    - .....Amino acids
    - .....Biochemical analysis
    - .....Biochemical oxygen demand
    - .....Metabolism
    - .....Peptides
    - .....Proteins
    - .....Receptor (biochemistry)
  - .....Biodiversity
    - .....Biogeography
    - .....Endangered species
  - .....Bioelectric phenomena
    - .....Electric shock
  - .....Biological cells
    - .....Cell signaling
    - .....Cells (biology)
    - .....Chromosome mapping
    - .....Endothelial cells
    - .....Fibroblasts
    - .....RNA
    - .....Stem cells
  - .....Biological information theory
  - .....Biological processes
    - .....Biological interactions
    - .....Chronobiology
    - .....Circadian rhythm
    - .....Coagulation
    - .....Molecular biology
    - .....Symbiosis
    - .....Synaptic communication
  - .....Biological system modeling
  - .....Biological systems
    - .....Anatomy
    - .....Molecular communication
    - .....Organisms

- .....Biology computing
- .....Biophotonics
- .....Biophysics
  - .....Aerospace biophysics
  - .....Biomagnetics
  - .....Cellular biophysics
  - .....Molecular biophysics
- .....Biostatistics
- .....Botany
- .....Cryobiology
- .....Embryology
- .....Evolution (biology)
  - .....Memetics
  - .....Phylogeny
- .....Genetics
  - .....DNA
  - .....Epigenetics
  - .....Gene therapy
  - .....Genetic communication
  - .....Genetic expression
  - .....Genetic programming
  - .....Genomics
  - .....Genotypes
  - .....Optogenetics
  - .....Phenotypes
- .....Homeostasis
- .....Mechanobiology
- .....Microbiology
  - .....Electroporation
  - .....Virology
  - .....Virulence
- .....Microinjection
- .....Nanobioscience
  - .....DNA computing
  - .....Nanobiotechnology
- .....Phenology
- .....Physiology
  - .....Action potentials
  - .....External stimuli
  - .....Metabolism
  - .....Neuromodulation
  - .....Somatosensory
  - .....Predator prey systems
- .....Synthetic biology
- .....Systematics
- .....Systems biology
- .....Vegetation
  - .....Crops
  - .....Forests
  - .....Marine vegetation



- .....Normalized difference vegetation index
- .....Zoology
- .....Animals
- .....Entomology
- ....Biomedical communication
- .....Biomedical telemetry
- .....Telemedicine
- ....Biomedical computing
- .....Bioinformatics
- .....Neuroinformatics
- .....Medical expert systems
- .....Medical information systems
- .....Electronic medical records
- ....Biomedical engineering
- .....Bioimpedance
- .....Biological techniques
- .....Biomedical applications of radiation
- .....Radiation therapy
- .....Biomedical electronics
- .....Biomedical signal processing
- .....Biomedical image processing
- .....Bioprinting
- .....Biotechnology
- .....Cloning
- .....Drug delivery
- .....Targeted drug delivery
- .....Neural engineering
- .....Neural circuits
- .....Neural microtechnology
- .....Neural nanotechnology
- .....Neural prosthesis
- .....Protein engineering
- .....Tissue engineering
- .....Regeneration engineering
- .....Translational research
- ....Biomedical equipment
- .....Assistive technologies
- .....Assistive devices
- .....Assistive robots
- .....Closed captioning
- .....Video description
- .....Wheelchairs
- .....Biomedical electrodes
- .....Biomedical telemetry
- .....Biomedical transducers
- .....Catheters
- .....Endoscopes
- .....Endomicroscopy
- .....Gerontechnology
- .....Hypodermic needles
- .....Implants
- .....Auditory implants
- .....Brainstem implants
- .....Cochlear implants
- .....Microelectronic implants
- .....Neural implants
- .....Intracranial pressure sensors
- .....Lithotriptors
- .....Medical devices
- .....Medical instruments
- .....Pacemakers
- .....Petri dishes
- .....Pulse oximeter
- .....Stethoscope
- .....Surgical instruments
- .....Laparoscopes
- .....Ventilators
- ....Biomedical imaging
- .....Angiocardiology
- .....Angiography
- .....Biomedical optical imaging
- .....Cardiology
- .....Echocardiography
- .....Electrocardiography
- .....Phonocardiography
- .....Contrast agents
- .....DICOM
- .....Elastography
- .....Encephalography
- .....Mammography
- .....Medical diagnostic imaging
- .....Anatomical structure
- .....Radionuclide imaging
- .....Molecular imaging
- .....Phantoms
- .....Photoacoustic imaging
- ....Bionanotechnology
- ....Bioterrorism
- ....Computational biology
- .....Computational biochemistry
- .....Computational biophysics
- .....Computational systems biology
- ....Genetic engineering
- .....CRISPR
- .....Transfection
- ....Medical services
- .....Assisted living
- .....Ambient assisted living
- .....Catheterization
- .....Clinical diagnosis
- .....Clinical neuroscience



- .....Cybercare
- .....Electronic healthcare
- .....Health information management
- .....Hospitals
- .....In vitro
- .....In vitro fertilization
- .....In vivo
- .....Internet of Medical Things
- .....Medical conditions
  - .....Acidosis
  - .....Acute respiratory distress syndrome
  - .....Addiction
  - .....Anemia
  - .....Aneurysm
  - .....Aphasia
  - .....Arrhythmia
  - .....Atrophy
  - .....Autism
  - .....Blindness
  - .....Carpal tunnel syndrome
  - .....Cataracts
  - .....Cerebral palsy
  - .....Chronic kidney disease
  - .....Congestive heart failure
  - .....Cybersickness
  - .....Deafness
  - .....Degenerative disc disease
  - .....Dementia
  - .....Depression
  - .....Diabetes
  - .....Diseases
  - .....Drug resistance
  - .....Dyslexia
  - .....Eczema
  - .....Gastritis
  - .....Hemorrhaging
  - .....Hydrocephalus
  - .....Hypertension
  - .....Hyperthermia
  - .....Hypoxia
  - .....Inflammatory bowel disease
  - .....Injuries
  - .....Jaundice
  - .....Kidney stones
  - .....Motion sickness
  - .....Muscular dystrophy
  - .....Obesity
  - .....Paralysis
  - .....People with disabilities
  - .....Pregnancy
  - .....Psoriasis
- .....Scoliosis
- .....Sepsis
- .....Sleep apnea
- .....Spasticity
- .....Stroke (medical condition)
- .....Thrombosis
- .....Tumors
- .....Visual impairment
- .....Medical diagnosis
  - .....Autopsy
  - .....Bronchoscopy
  - .....Cardiac catheterization
  - .....Colonography
  - .....Computer aided diagnosis
  - .....Differential diagnosis
  - .....Medical signal detection
  - .....Nanomedicine
  - .....Plethysmography
  - .....Sensitivity and specificity
- .....Medical tests
  - .....Amniocentesis
  - .....Biopsy
  - .....Cancer detection
  - .....Colonoscopy
  - .....Pregnancy test
- .....Medical treatment
  - .....Acupuncture
  - .....Amputation
  - .....Anesthesia
  - .....Angioplasty
  - .....Brachytherapy
  - .....Brain stimulation
  - .....Cancer treatment
  - .....Chemotherapy
  - .....Clinical trials
  - .....Cryotherapy
  - .....Defibrillation
  - .....Dentistry
  - .....Electrical stimulation
  - .....Electronic medical prescriptions
  - .....Electroporation
  - .....Electrosurgery
  - .....Embolization
  - .....Fibrillation
  - .....Geriatrics
  - .....Hepatectomy
  - .....Hospitals
  - .....Hyperthermia
  - .....Immunotherapy
  - .....Intubation
  - .....Lithotripsy



- .....Magnetic stimulation
- .....Neuromuscular stimulation
- .....Neutron capture therapy
- .....Noninvasive treatment
- .....Orthopedic procedures
- .....Orthotics
- .....Palliative care
- .....Patient rehabilitation
- .....Pharmaceuticals
- .....Precision medicine
- .....Proton therapy
- .....Surgery
- .....Occupational medicine
- .....Organ transplantation
- .....Heart transplantation
- .....Point of care
- .....Prosthetics
- .....Artificial biological organs
- .....Artificial limbs
- .....Knee replacement
- .....Myoelectric control
- .....Neuroprostheses
- .....Prosthetic hand
- .....Prosthetic limbs
- .....Visual prosthesis
- .....Public healthcare
- .....Contact tracing
- .....Sensory aids
- .....Hearing aids
- .....Smart healthcare
- .....Wearable Health Monitoring Systems
- .....Vaccines
- .....X-rays
- .....X-ray applications
- .....X-ray astronomy
- .....X-ray detection
- .....X-ray scattering
- .....X-ray telescopes
- .....X-ray tomography
- ....Medical specialties
- .....Anesthesiology
- .....Cardiology
- .....Cardiac tissue
- .....Dermatology
- .....Embryology
- .....Emergency medicine
- .....Endocrinology
- .....Gastroenterology
- .....Gerontology
- .....Gerontechnology

- .....Gynecology
- .....Hematology
- .....Immunology
- .....Antigens
- .....Immunofluorescence
- .....Neonatology
- .....Nephrology
- .....Neurology
- .....Dyslexia
- .....Neurorehabilitation
- .....Obstetrics
- .....Oncology
- .....Radiation therapy
- .....Ophthalmology
- .....Otorhinolaryngology
- .....Pathology
- .....Histopathology
- .....Neuropathology
- .....Pathological processes
- .....Pediatrics
- .....Pharmacology
- .....Drug discovery
- .....Pharmacodynamics
- .....Pharmacokinetics
- .....Psychiatry
- .....Mental disorders
- .....Pulmonology
- .....Spirometry
- .....Radiology
- .....Neuroradiology
- .....Rheumatology
- .....Urology
- ....Nuclear medicine
- ....Synthetic biology

**Engineering management**

- ....Business
- .....Agribusiness
- .....Business data processing
- .....Business intelligence
- .....Commerce and trade
- .....Free economic zones
- .....Product delivery
- .....Disruptive innovation
- .....Entrepreneurship
- .....Franchising
- .....Industrial relations
- .....Management
- .....Asset management
- .....Best practices



- .....Building management systems
- .....Business continuity
- .....Business process management
- .....Business process re-engineering
- .....Communication system operations and management
- .....Conference management
- .....Content management
- .....Contingency management
- .....Contract management
- .....Contracts
- .....Customer relationship management
- .....Dependability management
- .....Distributed management
- .....Enterprise resource planning
- .....Facilities management
- .....Financial management
- .....Governmental factors
- .....Human resource management
- .....Information management
- .....Interface management
- .....International collaboration
- .....Knowledge management
- .....Marketing management
- .....Organizational aspects
- .....Outsourcing
- .....Precision agriculture
- .....Process planning
- .....Production management
- .....Program management
- .....Project management
- .....Public relations
- .....Quality management
- .....Requirements management
- .....Research and development management
- .....Resource management
- .....Risk analysis
- .....Safety management
- .....Security management
- .....Storage management
- .....Supply chain management
- .....Technical management
- .....Technology management
- .....Operations research
- .....Inventory control
- .....Virtual enterprises
- .....Organizations
- .....BNSC
- .....Companies
- .....Decentralized autonomous organization
- .....European Space Agency
- .....Government
- .....Non-governmental organizations
- .....Sociotechnical systems
- .....United Kingdom Space Agency
- ...Commercialization
- ...Consortia
- ...Economics
- .....Access charges
- .....Costs
- .....Cost benefit analysis
- .....Developing countries
- .....Econometrics
- .....Economic forecasting
- .....Economic indicators
- .....Share prices
- .....Electronic commerce
- .....Environmental economics
- .....Carbon tax
- .....Emissions trading
- .....Exchange rates
- .....Free economic zones
- .....Freeports
- .....Fuel economy
- .....International trade
- .....Macroeconomics
- .....Privatization
- .....Mechanism design
- .....Microeconomics
- .....Economies of scale
- .....Industrial economics
- .....Monopoly
- .....Oligopoly
- .....Power generation economics
- .....Electricity supply industry deregulation
- .....Profitability
- .....Sharing economy
- .....Shared transport
- .....Socioeconomics
- .....Stock markets
- .....Supply and demand
- .....Trade agreements
- .....Venture capital
- .....Virtual enterprises
- ...Innovation management
- .....Creativity
- ...Legal factors
- .....Copyright protection



- .....Intellectual property
- .....Software protection
- .....Law
- .....Censorship
- .....Commercial law
- .....Consumer protection
- .....Contract law
- .....Criminal law
- .....Employment law
- .....Forensics
- .....Fraud
- .....Law enforcement
- .....Patent law
- .....Trademarks
- .....Patents
- .....Product liability
- .....Warranties
- .....Software protection
- .....Trademarks
- ...Market research
- ...Planning
- .....Meeting planning
- .....Schedules
- .....Strategic planning
- .....Roadmaps (technology planning)
- .....Technical planning
- .....Technology planning
- ...Product development
- .....Graphical user interfaces
- .....Avatars
- .....Product customization
- .....Product lifecycle management
- .....Life cycle assessment
- .....Prognostics and health management
- .....Software product lines
- .....Time to market
- ...Project engineering
- .....Scheduling
- .....Adaptive scheduling
- .....Dynamic scheduling
- .....Job shop scheduling
- .....Single machine scheduling
- .....Turnkey project
- ...Research and development management
- .....Innovation management
- .....Creativity
- ...Research initiatives
- ...Software development management
- .....Agile project management

- .....Agile software development
- .....Scrum (Software development)
- .....Continuous integration
- .....DevOps
- .....Model-driven development

**Geoscience and remote sensing**

- ...Environmental factors
- .....Biosphere
- .....Climate change
- .....Global warming
- .....Ecology
- .....Habitats
- .....Ecosystems
- .....Aquatic ecosystems
- .....Estuaries
- .....Grasslands
- .....Rainforests
- .....Tundra
- .....Wetlands
- .....Environmental degradation
- .....Deforestation
- .....Habitat loss
- .....Environmental economics
- .....Carbon tax
- .....Emissions trading
- .....Environmental measurement
- .....Enhanced vegetation index
- .....Normalized difference vegetation index
- .....Normalized difference water index
- .....Environmental monitoring
- .....Global warming
- .....Global warming potential
- .....Green manufacturing
- .....Green products
- .....Green buildings
- .....Green cleaning
- .....Green electronics
- .....Green transportation
- .....Habitat loss
- .....Life cycle assessment
- .....Pollution
- .....Acidification
- .....Agricultural pollution
- .....Air pollution
- .....Emissions trading
- .....Industrial pollution
- .....Land pollution
- .....Oil pollution



- .....Radioactive pollution
- .....Thermal pollution
- .....Urban pollution
- .....Water pollution
- ...Geographic information systems
- .....Geospatial analysis
- .....Gunshot detection systems
- ...Geophysical measurement techniques
- .....Geophysical image processing
- ...Geophysical measurements
- .....Geodesy
- .....Level measurement
- .....Sea measurements
- .....Geoacoustic inversion
- .....Seismic measurements
- ...Geophysical signal processing
- ...Geoscience
- .....Antarctica
- .....South Pole
- .....Arctic
- .....North Pole
- .....Atmosphere
- .....Air quality
- .....Atmospheric modeling
- .....Atmospheric waves
- .....Biosphere
- .....Continents
- .....Africa
- .....Asia
- .....Australia
- .....Europe
- .....North America
- .....South America
- .....Cyclones
- .....Hurricanes
- .....Tropical cyclones
- .....Earth
- .....Earthquakes
- .....Earthquake engineering
- .....Equator
- .....Estuaries
- .....Forestry
- .....Deforestation
- .....Forests
- .....Reforestation
- .....Geochemistry
- .....Geoengineering
- .....Solar geoengineering
- .....Geography
- .....Cartography
- .....Deserts
- .....Rural areas
- .....Urban areas
- .....Geology
- .....Biogeochemistry
- .....Continental crust
- .....Erosion
- .....Geological processes
- .....Landslides
- .....Minerals
- .....Oceanic crust
- .....Rocks
- .....Stratigraphy
- .....Tectonics
- .....Geophysics
- .....EMTDC
- .....Extraterrestrial phenomena
- .....Geodynamics
- .....Geophysics computing
- .....Meteorology
- .....Moisture
- .....Seismology
- .....Surface waves
- .....Well logging
- .....Glaciology
- .....Glaciers
- .....Hydrography
- .....Ice
- .....Glaciers
- .....Ice cap
- .....Ice clouds
- .....Ice shelf
- .....Ice surface
- .....Ice thickness
- .....Icebergs
- .....Sea ice
- .....Lakes
- .....Land surface
- .....Watersheds
- .....Levee
- .....Meteorological factors
- .....Natural resources
- .....Oceanography
- .....Ocean circulation
- .....Ocean dynamics
- .....Oceans
- .....Antarctic Ocean
- .....Arctic Ocean
- .....Atlantic Ocean
- .....Indian Ocean
- .....Ocean acidification
- .....Ocean salinity



- .....Ocean temperature
- .....Pacific Ocean
- .....Sea coast
- .....Sea floor
- .....Sea level
- .....Sea surface
- .....Tides
- .....Rivers
- .....Sediments
- .....Soil
- .....Peat
- .....Permafrost
- .....Soil moisture
- .....Soil properties
- .....Soil remediation
- .....Soil texture
- .....Tornadoes
- .....Tsunami
- .....Volcanoes
- .....Lava
- .....Volcanic activity
- .....Volcanic ash
- .....Wetlands
- ....Land surface temperature
- ....Photometry
- .....Photogrammetry
- ....Radiometry
- .....Microwave radiometry
- .....Radiometers
- .....Spectroradiometers
- ....Remote sensing
- .....Hyperspectral sensors
- .....Hyperspectral imaging
- .....Passive microwave remote sensing
- .....Quantum radar
- .....Remote monitoring
- ....Terrain mapping
- .....Digital elevation models
- ....Terrestrial atmosphere
- .....Clouds
- .....Global warming
- .....Global warming potential
- .....Ionosphere
- .....Magnetosphere
- ....Vegetation mapping
- .....IEEE Society awards
- .....IEEE Standards awards
- .....National Society Agreement awards
- .....IEEE Conference activities
- .....IEEE Corporate activities
- .....Humanitarian activities
- .....IEEE Educational activities
- .....IEEE Member and Geographic activities
- .....IEEE professional activities
- .....IEEE publishing
- .....IEEE Technical activities
- .....IEEE United States activities
- ...IEEE entities
- .....IEEE Boards
- .....IEEE Chapters
- .....IEEE Committees
- .....IEEE Communities
- .....IEEE Councils
- .....IEEE Foundation
- .....IEEE History Center
- .....IEEE Regions
- .....IEEE Societies
- ...IEEE governance
- .....IEEE bylaws
- .....IEEE Constitution
- .....IEEE policy and procedures
- .....IEEE staff
- ...IEEE indexing
- .....Awards
- .....Nobel Prize
- .....Book reviews
- .....Interviews
- .....Obituaries
- .....Software reviews
- .....Special issues and sections
- .....Tutorials
- .....Video reviews
- ...IEEE members
- .....IEEE Associate Members
- .....IEEE Senior Members
- ...IEEE products
- .....IEEE merchandise
- .....IEEE Xplore

**IEEE organization**

- ....IEEE activities
- .....IEEE Awards activities
- .....IEEE Corporate awards

**Imaging**

- ....Biomedical imaging
- .....Angiocardiology
- .....Angiography
- .....Biomedical optical imaging



- .....Cardiography
  - .....Echocardiography
  - .....Electrocardiography
  - .....Phonocardiography
- .....Contrast agents
- .....DICOM
- .....Elastography
- .....Encephalography
- .....Mammography
- .....Medical diagnostic imaging
  - .....Anatomical structure
  - .....Radionuclide imaging
  - .....Molecular imaging
- .....Phantoms
- .....Photoacoustic imaging
- ....Cameras
  - .....Digital cameras
  - .....Smart cameras
  - .....Webcams
- ....Focusing
- ....Ground penetrating radar
- ....Holography
- ....Image converters
  - .....Image intensifiers
- ....Image sensors
  - .....Active pixel sensors
  - .....CCD image sensors
  - .....Charge-coupled image sensors
  - .....CMOS image sensors
  - .....Infrared image sensors
- ....Image storage
- ....Infrared imaging
  - .....Night vision
- ....Magnetic resonance imaging
  - .....Diffusion tensor imaging
  - .....Functional magnetic resonance imaging
  - .....Magnetic resonance elastography
  - .....Magnetic resonance fingerprinting
  - .....Quantitative susceptibility mapping
- ....Magneto electrical resistivity imaging technique
- ....Microscopy
  - .....Atomic force microscopy
  - .....Electron microscopy
    - .....Photoelectron microscopy
    - .....Scanning electron microscopy
    - .....Transmission electron microscopy
  - .....Endomicroscopy
  - .....Immunofluorescence
  - .....Scanning microwave microscopy
- .....Scanning probe microscopy
- .....Scanning thermal microscopy
- ...Microwave imaging
- ...Multispectral imaging
- ...Nuclear imaging
  - .....Energy resolution
  - .....Ion emission
- ...Optical imaging
  - .....Optical flow
  - .....Optical projectors
  - .....Talbot effect
- ...Thermoreflectance imaging
- ...Photography
  - .....Cinematography
  - .....Digital photography
  - .....Image forensics
  - .....Photomicrography
  - .....Photorealism
- ...Radiation imaging
  - .....Radionuclide imaging
- ...Radiography
  - .....Diagnostic radiography
- ...Stereo vision
  - .....Stereo image processing
- ...Terahertz wave imaging
- ...Tomography
  - .....Computed tomography
    - .....Single photon emission computed tomography
    - .....Electrical capacitance tomography
    - .....Electrical impedance tomography
    - .....Magnetic particle imaging
    - .....Optical coherence tomography
    - .....Positron emission tomography
      - .....Whole-body PET
  - .....Reconstruction algorithms

**Industrial electronics**

- ....Assembly systems
  - .....Flexible electronics
    - .....Electronic skin
    - .....Robotic assembly
- ....Computer aided manufacturing
  - .....CAD/CAM
  - .....Silicon compiler
- ....Cryogenic electronics
- ....Industrial control
  - .....Process control
    - .....Predictive control
    - .....Three-term control



- .....Two-term control
- .....Production control
- .....Continuous production
- .....Lot sizing
- .....Optimized production technology
- .....Scheduling
- ....Integrated manufacturing systems
- ....Machine control
- .....Machine vector control
- ....Manufacturing automation
- .....Computer aided manufacturing
- .....CAD/CAM
- .....Silicon compiler
- .....Computer integrated manufacturing
- .....Computer numerical control
- .....Flexible manufacturing systems
- ....Testing
- .....Aerospace testing
- .....Wind tunnels
- .....Automatic testing
- .....Automatic test pattern generation
- .....Ring generators
- .....Benchmark testing
- .....Built-in self-test
- .....Circuit testing
- .....Integrated circuit measurements
- .....Conformance testing
- .....Electronic equipment testing
- .....Immunity testing
- .....Error analysis
- .....Bit error rate
- .....Finite wordlength effects
- .....Error-free operations
- .....Failure analysis
- .....Equipment failure
- .....Semiconductor device breakdown
- .....Frequency response
- .....Impulse testing
- .....Insulator testing
- .....Insulation testing
- .....Integrated circuit testing
- .....Integrated circuit yield
- .....Logic testing
- .....Life testing
- .....Materials testing
- .....Accelerated aging
- .....Acoustic testing
- .....Adhesive strength
- .....Bonding forces
- .....Delamination
- .....Elastic recovery

- .....Nondestructive testing
- .....Optical fiber testing
- .....Remaining life assessment
- .....Ring generators
- .....Semiconductor device testing
- .....Shear testing
- .....Software testing
- .....Combinatorial testing
- .....Fuzzing
- .....System testing
- .....Model checking
- .....Test equipment
- .....Automatic test equipment
- .....Test facilities
- .....Anechoic chambers
- .....Laboratories
- .....Large Hadron Collider
- .....Open area test sites
- .....TEM cells
- .....Wind tunnels

### Industry applications

- ....Accident prevention
- .....Accidents
- .....Aerospace accidents
- .....Electrical accidents
- .....Industrial accidents
- .....Marine accidents
- .....Railway accidents
- .....Road accidents
- ...Chemical technology
- .....Chemical reactions
- .....Bioreactors
- .....Catalysis
- .....Chemical reduction
- .....Chemiluminescence
- .....Continuous-stirred tank reactor
- .....Hydrolysis
- .....Ignition
- .....Solvation
- .....Chemical sensors
- .....Crystallizers
- .....Distillation equipment
- .....Fluidization
- .....Pharmaceutical technology
- .....Vitrification
- ...Cryogenics
- .....Cryopreservation
- .....Liquid nitrogen
- ....Electrochemical devices



- .....Amperometric sensors
- .....Batteries
  - .....Lead acid batteries
  - .....Lithium batteries
  - .....Lithium-ion batteries
  - .....Lithium-sulfur batteries
  - .....Nickel cadmium batteries
  - .....Solid state batteries
- .....Battery management systems
- .....Fuel cells
- .....Supercapacitors
- ...Electrochemical processes
- ...Electromechanical systems
  - .....Cruise control
  - .....Electromechanical devices
    - .....Armature
    - .....SAW filters
- ...Electrostatic devices
  - .....Electrostatic precipitators
  - .....Electrostatic processes
    - .....Aerosols
    - .....Electrophotography
    - .....Electrostatic analysis
    - .....Electrostatic induction
    - .....Electrostatics
      - .....Electrostatic levitation
    - .....Particle charging
    - .....Particle production
    - .....Space charge
    - .....Surface charging
      - .....Triboelectricity
- ...Engines
  - .....Heat engines
    - .....Steam engines
    - .....Stirling engines
  - .....Internal combustion engines
    - .....Diesel engines
    - .....Ignition
  - .....Jet engines
- ...Environmental management
  - .....Biodegradation
    - .....Biodegradable materials
    - .....Composting
  - .....Land use planning
    - .....Deforestation
    - .....Protected areas
  - .....Net zero
  - .....Pest control
  - .....Pollution control
    - .....Soil remediation
- .....Recycling
  - .....Composting
- .....Renewable energy sources
  - .....Biomass
  - .....Green energy
    - .....Green hydrogen
  - .....Hydroelectric power generation
    - .....Tidal energy
- .....Sustainable development
  - .....Waste management
    - .....Waste disposal
    - .....Waste handling
    - .....Waste recovery
    - .....Waste reduction
  - .....Water conservation
    - .....Desalination
  - .....Water resources
    - .....Aquifers
      - .....Desalination
      - .....Eutrophication
      - .....Reservoirs
    - .....Stormwater
      - .....Water monitoring
- ...Food technology
  - .....Food preservation
    - .....High-temperature techniques
      - .....Rapid thermal processing
- ...Industrial engineering
  - .....Industrial communication
- ...Industries
  - .....Agriculture
    - .....Aeroponics
    - .....Agribusiness
      - .....Agricultural pollution
      - .....Agricultural products
      - .....Agriculture Internet of Things
    - .....Agrochemicals
    - .....Aquaculture
    - .....Greenhouses
    - .....Irrigation
      - .....Precision agriculture
      - .....Smart agriculture
      - .....Urban agriculture
  - .....Airline industry
  - .....Architecture
    - .....Beverage industry
    - .....Chemical industry
    - .....Coal industry
    - .....Communication industry
    - .....Computer industry
    - .....Construction



.....Buildings	.....Nuclear facility regulation
.....Green buildings	.....Power system interconnection
.....Modular construction	.....Real estate industry
.....Prefabricated construction	.....Steel industry
.....Stairs	.....Sugar industry
.....Construction industry	.....Sugar refining
.....Prefabricated construction	.....Textile technology
.....Defense industry	.....Spinning
.....Electrical engineering industry	.....Weaving
.....Entertainment industry	.....Tourism industry
.....Sports	.....Toy industry
.....Farming	.....Transportation industry
.....Financial industry	.....Wood industry
.....Banking	...Inspection
.....Financial services	.....Automatic optical inspection
.....Gas industry	...Machinery
.....Horticulture	.....Agricultural machinery
.....Hydroponics	.....Agricultural robots
.....Information industry	.....Ball bearings
.....Lumber industry	.....Belts
.....Manufacturing industries	.....Drives
.....Aerospace industry	.....Hydraulic drives
.....Cement industry	.....Motor drives
.....Ceramics industry	.....Variable speed drives
.....Clothing industry	.....Electric machines
.....Electrical products industry	.....AC machines
.....Electronics industry	.....Alternators
.....Food industry	.....Brushless machines
.....Footwear industry	.....Compressors
.....Fuel processing industries	.....Conductors
.....Glass industry	.....DC machines
.....Machinery production industries	.....Electric fences
.....Metal product industries	.....Generators
.....Plastics industry	.....Permanent magnet machines
.....Pulp and paper industry	.....Rotating machines
.....Rubber industry	.....Rotors
.....Shipbuilding industry	.....Stators
.....Textile industry	.....Washing machines
.....Toy manufacturing industry	.....Fans
.....Metals industry	.....Furnaces
.....Mining industry	.....Blast furnaces
.....Coal mining	.....Kilns
.....Natural gas industry	.....Gears
.....Petroleum industry	.....Magnetic gears
.....Oil drilling	.....Hydraulic systems
.....Oil refineries	.....Electrohydraulics
.....Well logging	.....Hydraulic equipment
.....Pharmaceutical industry	.....Hydraulic fluids
.....Power industry	.....Machine components
.....Electrical equipment industry	.....Air cleaners
.....Electricity supply industry	.....Belts



.....Cams	.....Lithography
.....Engine cylinders	.....Colloidal lithography
.....Exhaust systems	.....Extreme ultraviolet lithography
.....Impellers	.....Interferometric lithography
.....Intake systems	.....Nanolithography
.....Manifolds	.....Soft lithography
.....Mechanical splines	.....Stereolithography
.....Pistons	.....X-ray lithography
.....Rotors	.....Manufactured products
.....Shafts	.....Ceramic products
.....Valves	.....Chemical products
.....Motors	.....Consumer products
.....AC motors	.....Electrical products
.....Brushless motors	.....Food products
.....Commutation	.....Fuels
.....DC motors	.....Glass products
.....Electric motors	.....Mechanical products
.....Hysteresis motors	.....Metal products
.....Induction motors	.....Paper products
.....Micromotors	.....Paper pulp
.....Permanent magnet motors	.....Plastic products
.....Servomotors	.....Rubber products
.....Traction motors	.....Sports equipment
.....Universal motors	.....Textile products
.....Printing machinery	.....Tools
.....Pumps	.....Windows
.....Fuel pumps	.....Manufacturing systems
.....Heat pumps	.....Agile manufacturing
.....Insulin pumps	.....Automobile manufacture
.....Micropumps	.....Batch production systems
.....Water pumps	.....Blanking
.....Textile machinery	.....Cellular manufacturing
.....Spinning machines	.....Flow production systems
....Manufacturing	.....Food manufacturing
.....Assembly	.....Forging
.....Fitting	.....Glass manufacturing
.....Microassembly	.....Integrated manufacturing systems
.....Preforms	.....Intelligent manufacturing systems
.....Soldering	.....Job production systems
.....Assembly systems	.....Joining processes
.....Flexible electronics	.....Layered manufacturing
.....Robotic assembly	.....Lean production
.....Embossing	.....Manufacturing processes
.....Fabrication	.....Mass production
.....Bonding processes	.....Melt processing
.....Microfabrication	.....Pulp manufacturing
.....Optical device fabrication	.....Sheet metal processing
.....Soldering	.....Thermoforming
.....Welding	.....Three-dimensional printing
.....Fourth Industrial Revolution	.....Mass customization
.....Green manufacturing	.....Smart manufacturing



- .....Tolerance analysis
- ....Packaging
  - .....Bagging
  - .....Bottling
  - .....Canning
  - .....Encapsulation
  - .....Food packaging
  - .....Labeling
  - .....Multichip modules
  - .....Nanopackaging
  - .....Plastic packaging
  - .....Wrapping
- ....Paper technology
- ....Production
  - .....Ball milling
  - .....Compression molding
  - .....Embossing
  - .....Food products
    - .....Dairy products
    - .....Fats
    - .....Food security
    - .....Food waste
    - .....Nutrients
    - .....Sugar
  - .....Group technology
  - .....Injection molding
  - .....Materials processing
    - .....Annealing
    - .....Bleaching
    - .....Casting
    - .....Coatings
    - .....Curing
    - .....Etching
    - .....Heat treatment
    - .....Joining processes
    - .....Lamination
    - .....Laser materials processing
    - .....Machining
    - .....Melt processing
    - .....Plasma materials processing
    - .....Plating
    - .....Pressing
    - .....Punching
    - .....Refining
    - .....Shearing
    - .....Smelting
    - .....Softening
    - .....Swaging
    - .....Vapor deposition
  - .....Mechanical products
    - .....Automotive components
    - .....Axles
    - .....Bellows
    - .....Blades
    - .....Brakes
    - .....Couplings
    - .....Fasteners
    - .....Flanges
    - .....Gears
    - .....Hoses
    - .....Machine components
    - .....Mechanical guides
    - .....Needles
    - .....Orifices
    - .....Pistons
    - .....Pressure vessels
    - .....Seals
    - .....Springs
    - .....Steering systems
    - .....Structural shapes
    - .....Tires
    - .....Vents
    - .....Wheels
  - .....Process planning
    - .....Business process integration
    - .....Business process management
    - .....Cause effect analysis
    - .....Root cause analysis
  - .....Production control
    - .....Continuous production
    - .....Lot sizing
    - .....Optimized production technology
    - .....Scheduling
  - .....Production engineering
    - .....Production planning
    - .....Production equipment
      - .....Applicators
      - .....Clamps
      - .....Cutting tools
      - .....Fixtures
      - .....Machine tools
      - .....Mining equipment
      - .....Molding equipment
      - .....Packaging machines
      - .....Paper making machines
      - .....Polishing machines
      - .....Soldering equipment
  - .....Production facilities
    - .....Foundries
    - .....Greenhouses
    - .....Industrial facilities
    - .....Industrial plants



- .....Machine shops
- .....Paper mills
- .....Production management
- .....Control charts
- .....Inventory management
- .....Lead time reduction
- .....Logistics
- .....Process planning
- .....Production planning
- .....Production materials
- .....Abrasives
- .....Aerospace materials
- .....Automotive materials
- .....Inhibitors
- .....Ink
- .....Joining materials
- .....Lubricants
- .....Retardants
- .....Production systems
- .....Assembly systems
- .....Exhaust systems
- .....Intelligent manufacturing systems
- .....Lean production
- .....Manufacturing systems
- .....Steering systems
- .....Productivity
- .....Shafts
- .....Camshafts
- .....Springs
- .....Transfer molding
- ....Safety
- .....Aerospace safety
- .....Air safety
- .....Disasters
- .....Domestic safety
- .....Fall detection
- .....Emergency services
- .....Explosion protection
- .....Fire safety
- .....Food safety
- .....Hazards
- .....Biohazards
- .....Chemical hazards
- .....Explosions
- .....Fires
- .....Flammability
- .....Floods
- .....Hazardous areas
- .....Hazardous materials
- .....Toxicology
- .....Health and safety
- .....Occupational health
- .....Occupational safety
- .....Personal protective equipment
- .....Marine safety
- .....Product safety
- .....Protection
- .....Electrostatic discharge protection
- .....Explosion protection
- .....Lightning protection
- .....Radiation protection
- .....Public security
- .....Radiation safety
- .....Radiation protection
- .....Radiofrequency safety
- .....Safety devices
- .....Eye protection
- .....Fire extinguishers
- .....Protective clothing
- .....Safety management
- .....Vehicle safety
- .....Advanced driver assistance systems
- .....Lane departure warning systems
- .....Lane detection
- ....Security
- .....Access control
- .....Accesslists
- .....Authorization
- .....Blocklists
- .....Multi-factor authentication
- .....Non-repudiation
- .....Passwords
- .....Alarm systems
- .....Smoke detectors
- .....Capability-based security
- .....Computer security
- .....Application security
- .....Authentication
- .....Cloud computing security
- .....Computer crime
- .....Computer hacking
- .....Cross-site scripting
- .....Cyber espionage
- .....Cyber warfare
- .....Cyberattack
- .....Data integrity
- .....Denial-of-service attack
- .....Firewalls (computing)
- .....Honey pot (computing)
- .....Identity management systems
- .....Internet security



- .....Mobile security
- .....Passwords
- .....Penetration testing
- .....Permission
- .....Phishing
- .....Proof of Work
- .....Trusted computing
- .....Control system security
- .....Physical unclonable function
- .....Cryptography
- .....Blockchains
- .....Brute force attacks
- .....Chaotic mapping
- .....Ciphers
- .....Cryptocurrency
- .....Cryptographic hash function
- .....Encryption
- .....Multi-party computation
- .....Nonce
- .....Public key
- .....Quantum cryptography
- .....Random number generation
- .....S Box
- .....Side-channel attacks
- .....Steganography
- .....Zero knowledge proof
- .....Data security
- .....Cryptography
- .....Message authentication
- .....Tokenization
- .....Digital signatures
- .....Food security
- .....Hardware security
- .....Information security
- .....Cyber espionage
- .....Data breach
- .....Information leakage
- .....Intrusion detection
- .....Phishing
- .....Privacy breach
- .....Social engineering (security)
- .....SQL injection
- .....Trust management
- .....Network security
- .....Network reconnaissance
- .....Power system security
- .....Reconnaissance
- .....Security management
- .....Terrorism
- .....Bioterrorism
- .....Cyber terrorism

- .....National security
- .....Watermarking
- .....Zero Trust
- ...Wine industry
- .....Wineries

**Information theory**

- ....Audio coding
- ...Biological information theory
- ...Channel coding
- .....Block codes
- .....Linear codes
- .....Polar codes
- .....Combined source-channel coding
- .....Turbo codes
- ...Codes
- .....Binary codes
- .....Reflective binary codes
- .....Convolutional codes
- .....Cyclic redundancy check codes
- .....Error correction codes
- .....Reed-Muller codes
- .....Reed-Solomon codes
- .....Parity check codes
- .....Iterative decoding
- .....Product codes
- .....Bar codes
- .....Space-time codes
- .....Zero correlation zone
- ...Communication channels
- .....Channel allocation
- .....Spectral efficiency
- .....Channel capacity
- .....Channel estimation
- .....Channel models
- .....Channel spacing
- .....Channel state information
- .....Channel impulse response
- .....Gaussian channels
- .....AWGN channels
- .....Multipath channels
- .....Multiuser channels
- .....Partial response channels
- .....Quantum channels
- .....Throughput
- .....Time-varying channels
- ...Decoding
- .....Maximum likelihood decoding
- ...Encoding
- .....ASCII



- .....Audio coding
- .....Channel coding
- .....Block codes
- .....Combined source-channel coding
- .....Turbo codes
- .....Code refractoring
- .....Digital representation
- .....Entropy coding
- .....Huffman coding
- .....Precoding
- .....Source coding
- .....Speech coding
- .....Transcoding
- ....Error compensation
- ....Genetic communication
- ....Hamming distances
- ....Hamming weight
- ....Information entropy
- ....Mutual information
- ....Network coding
- ....Rate distortion theory
- .....Channel rate control
- ....Rate-distortion
- ....Source coding
- ....Speech coding
- ....Technology acceptance model
- .....Current-voltage characteristics
- .....Electric potential
- .....Gain
- .....Impedance
- .....Impedance matching
- .....Baluns
- .....Inductance
- .....Permittivity
- .....Piezoresistance
- .....Q-factor
- .....Resistance
- .....Electric resistance
- .....Piezoresistance
- .....Surface resistance
- .....Thermal resistance
- .....Viscosity
- .....Voltage
- .....Breakdown voltage
- .....Dynamic voltage scaling
- .....Threshold voltage
- .....Voltage fluctuations
- .....Wiring
- ....High energy physics instrumentation
- computing
- .....Linear particle accelerator
- ....Instruments

**Instrumentation and measurement**

- ....Computerized instrumentation
- ....Electric variables
- .....Admittance
- .....Admittance control
- .....Capacitance
- .....Parasitic capacitance
- .....Quantum capacitance
- .....Capacitance-voltage characteristics
- .....Conductivity
- .....Photoconductivity
- .....Semiconductivity
- .....Transconductance
- .....Current
- .....Bioimpedance
- .....Current slump
- .....Dark current
- .....Fault currents
- .....Inrush current
- .....Leakage currents
- .....Persistent currents
- .....Short-circuit currents
- .....Threshold current
- .....Barometers
- .....Compass
- .....Medical instruments
- .....Meters
- .....Dynamometers
- .....Flowmeters
- .....Goniometers
- .....Potentiometers
- .....Radiometers
- .....Tachometers
- .....Vibrometers
- .....Voltmeters
- .....Wattmeters
- .....Microscopy
- .....Atomic force microscopy
- .....Electron microscopy
- .....Endomicroscopy
- .....Immunofluorescence
- .....Scanning microwave microscopy
- .....Scanning probe microscopy
- .....Network analyzers
- .....Odometers
- .....Oscilloscopes
- .....Pressure gauges
- .....Probes



- .....Telescopes
  - .....Gamma-ray telescopes
  - .....X-ray telescopes
- .....Theodolites
- .....Tuners
- ....Measurement
  - .....Accelerometers
  - .....Acoustic measurements
  - .....Antenna measurements
  - .....Anthropometry
  - .....Area measurement
  - .....Atmospheric measurements
    - .....Air pollution control
  - .....Atomic measurements
  - .....Bathymetry
  - .....Biomedical measurement
    - .....Biomarkers
    - .....Biomedical monitoring
    - .....Body mass index
    - .....Electroencephalography
    - .....Electromyography
    - .....Electrooculography
    - .....Electrophysiology
    - .....Photoplethysmography
    - .....Plethysmography
    - .....Pulse oximeter
  - .....Sensitivity and specificity
  - .....Spirometry
- .....Calorimetry
- .....Coordinate measuring machines
- .....Cytometry
- .....Density measurement
  - .....Hydrometers
- .....Population density
- .....Depth measurement
- .....Distance measurement
  - .....Euclidean distance
  - .....Odometers
- .....Distortion measurement
  - .....Total harmonic distortion
- .....Doppler measurement
- .....Dosimetry
- .....Dynamic range
  - .....High dynamic range
- .....Electric variables measurement
  - .....Admittance measurement
  - .....Ammeters
  - .....Attenuation measurement
  - .....Capacitance measurement
  - .....Conductivity measurement
  - .....Current measurement
- .....Dielectric measurement
- .....Electrical resistance measurement
- .....Electrostatic measurements
- .....Energy measurement
- .....Impedance measurement
- .....Inductance measurement
- .....Partial discharge measurement
- .....Phasor measurement units
- .....Power measurement
- .....Q measurement
- .....Rydberg atoms
- .....Transmission line measurements
- .....Voltage measurement
- .....Electromagnetic measurements
  - .....Electromagnetic modeling
  - .....Linearity
  - .....Microwave measurement
  - .....Millimeter wave measurements
  - .....Parameter extraction
  - .....Polarimetry
  - .....Radiometry
  - .....Submillimeter wave measurements
- .....Environmental measurement
  - .....Enhanced vegetation index
  - .....Normalized difference vegetation index
  - .....Normalized difference water index
- .....Extraterrestrial measurements
- .....Fluid flow measurement
- .....Frequency measurement
  - .....Frequency estimation
  - .....Frequency-domain analysis
- .....Gain measurement
- .....Gas chromatography
- .....Geologic measurements
- .....Geophysical measurements
  - .....Geodesy
- .....Sea measurements
- .....Seismic measurements
- .....Height measurement
- .....Interferometry
  - .....Fabry-Perot
  - .....Interferometers
  - .....Optical interferometry
  - .....Phase shifting interferometry
  - .....Radar interferometry
  - .....Radio interferometry
  - .....Sagnac interferometers
- .....Key performance indicator
- .....Length measurement
- .....Lifetime estimation



.....Loss measurement	.....Evaluation models
.....Packet loss	.....Key performance indicator
.....Lumen	.....pH measurement
.....Magnetic variables measurement	.....Phase measurement
.....Magnetic anomaly detection	.....Plasma measurements
.....Magnetic field measurement	.....Pollution measurement
.....Magnetometers	.....Pressure measurement
.....Permeability measurement	.....Altimetry
.....Measurement by laser beam	.....Tire pressure
.....Laser velocimetry	.....Pulse measurements
.....Measurement errors	.....Reflectometry
.....Measurement techniques	.....Replicability
.....Calibration	.....Reproducibility of results
.....Dynamic equilibrium	.....Scintillation counters
.....Measurement uncertainty	.....Solid scintillation detectors
.....Measurement units	.....Sea state
.....Crop yield	.....Semiconductor device measurement
.....International System of Units	.....Sensitivity
.....Nanometers	.....Sensitivity analysis
.....Mechanical variables measurement	.....Shape measurement
.....Angular velocity	.....Size measurement
.....Displacement measurement	.....Functional point analysis
.....Force measurement	.....Software measurement
.....Motion measurement	.....Soil measurements
.....Position measurement	.....Salinity (geophysical)
.....Rotation measurement	.....Spectral efficiency
.....Strain measurement	.....Spectroscopy
.....Stress measurement	.....Deep level transient spectroscopy
.....Thickness measurement	.....Diffuse reflectance spectroscopy
.....Torque measurement	.....Electrochemical impedance spectroscopy
.....Velocity measurement	.....Electron paramagnetic resonance
.....Vibration measurement	.....Fourier transform infrared spectroscopy
.....Volume measurement	.....Functional near-infrared spectroscopy
.....Weight measurement	.....Kirchhoff's Law
.....Micrometers	.....Mass spectroscopy
.....Moisture measurement	.....MERIS
.....Humidity measurement	.....Neutron spin echo
.....Noise measurement	.....Optical emission spectroscopy
.....Multiple signal classification	.....Photoacoustic effects
.....Noise figure	.....Resonance light scattering
.....Noise shaping	.....Thermal variables measurement
.....Nuclear measurements	.....Temperature measurement
.....Particle tracking	.....Time measurement
.....Optical variables measurement	.....Clocks
.....Ellipsometry	.....Time dissemination
.....Photometry	.....Timing
.....Reflection coefficient	.....UHF measurements
.....Refractive index	.....Ultrasonic variables measurement
.....Particle beam measurements	
.....Particle measurements	
.....Performance evaluation	



- .....Viscosity
- .....Wavelength measurement
- .....Wide area measurements
- ....Monitoring
  - .....Computerized monitoring
  - .....Environmental monitoring
  - .....Load monitoring
  - .....Patient monitoring
  - .....Process monitoring
  - .....Radiation monitoring
  - .....Radiation dosage
  - .....Remote monitoring
  - .....Surveillance
    - .....Infrared surveillance
    - .....Video surveillance
  - .....Water monitoring
- ....Pulse oximetry
- ....Testing
  - .....Aerospace testing
    - .....Wind tunnels
  - .....Automatic testing
    - .....Automatic test pattern generation
    - .....Ring generators
  - .....Benchmark testing
  - .....Built-in self-test
  - .....Circuit testing
    - .....Integrated circuit measurements
  - .....Conformance testing
  - .....Electronic equipment testing
    - .....Immunity testing
    - .....Error analysis
      - .....Bit error rate
      - .....Finite wordlength effects
    - .....Error-free operations
    - .....Failure analysis
      - .....Equipment failure
      - .....Semiconductor device breakdown
    - .....Frequency response
  - .....Impulse testing
  - .....Insulator testing
    - .....Insulation testing
  - .....Integrated circuit testing
    - .....Integrated circuit yield
  - .....Logic testing
  - .....Life testing
  - .....Materials testing
    - .....Accelerated aging
    - .....Acoustic testing
    - .....Adhesive strength
    - .....Bonding forces
    - .....Delamination

- .....Elastic recovery
- .....Nondestructive testing
  - .....Optical fiber testing
- .....Remaining life assessment
- .....Ring generators
- .....Semiconductor device testing
  - .....Shear testing
- .....Software testing
  - .....Combinatorial testing
  - .....Fuzzing
- .....System testing
  - .....Model checking
- .....Test equipment
  - .....Automatic test equipment
- .....Test facilities
  - .....Anechoic chambers
  - .....Laboratories
  - .....Large Hadron Collider
  - .....Open area test sites
  - .....TEM cells
  - .....Wind tunnels

**Intelligent transportation systems**

- ....Automated highways
- ....Geographic information systems
  - .....Geospatial analysis
- ....Gunshot detection systems
- ....Intelligent vehicles
  - .....Autonomous vehicles
    - .....Autonomous aerial vehicles
    - .....Autonomous automobiles
    - .....Autonomous driving
    - .....Autonomous underwater vehicles
  - .....Vehicle-to-everything
  - .....Vehicle-to-infrastructure
- ....Navigation
  - .....Aircraft navigation
  - .....Course correction
  - .....Dead reckoning
  - .....Indoor navigation
  - .....Inertial navigation
  - .....Marine navigation
  - .....Radio navigation
    - .....Satellite navigation systems
      - .....Global navigation satellite system
      - .....Global Positioning System
      - .....Satellite constellations
    - .....Sonar navigation
    - .....Underwater navigation
- ....Transportation



- .....Air transportation
- .....Aircraft
- .....Airports
- .....Escalators
- .....Green transportation
- .....Land transportation
- .....Rail transportation
- .....Road transportation
- .....Public transportation
- .....Seaports
- .....Shared transport
- .....Micromobility
- .....Smart transportation
- .....Vehicles
- .....Connected vehicles
- .....Hydrogen powered vehicles
- .....Hypersonic vehicles
- .....Intelligent vehicles
- .....Internet of Vehicles
- .....Land vehicles
- .....Military vehicles
- .....Remotely guided vehicles
- .....Space vehicles

**Lasers and electrooptics**

- ....Electro-optic devices
- .....Electrochromic devices
- .....Electro-optic deflectors
- ....Electro-optic effects
- .....Electrochromism
- .....Kerr effect
- .....Optical bistability
- .....Stark effect
- ....Lasers
- .....Atom lasers
- .....Chemical lasers
- .....Diode lasers
- .....Free electron lasers
- .....Gas lasers
- .....Laser applications
- .....Dark states
- .....Distributed feedback devices
- .....Laser ablation
- .....Laser beam cutting
- .....Laser beam machining
- .....Laser fusion
- .....Laser theory
- .....Magneto-optic recording
- .....Laser excitation
- .....Optical pumping

- .....Laser modes
- .....Laser mode locking
- .....Laser stability
- .....Laser transitions
- .....Power lasers
- .....Pump lasers
- .....Quantum well lasers
- .....Quantum cascade lasers
- .....Ring lasers
- .....Fiber lasers
- .....Semiconductor lasers
- .....Laser tuning
- .....Quantum dot lasers
- .....Quantum well lasers
- .....Semiconductor laser arrays
- .....Semiconductor optical amplifiers
- .....Surface emitting lasers
- .....Solid lasers
- .....Microchip lasers
- .....Quantum well lasers
- .....Semiconductor lasers
- .....Surface emitting lasers
- .....Surface emitting lasers
- .....Vertical cavity surface emitting lasers
- .....X-ray lasers
- ....Optics
- .....Adaptive optics
- .....Aspherical optics
- .....Birefringence
- .....Brightness
- .....Brightness temperature
- .....Color
- .....Color gamut
- .....Color temperature
- .....Pigmentation
- .....Electron optics
- .....Extinction coefficients
- .....Extinction ratio
- .....Fiber optics
- .....Fiber nonlinear optics
- .....Optical fibers
- .....Fluorescence
- .....Immunofluorescence
- .....Four-wave mixing
- .....Geometrical optics
- .....Ray tracing
- .....Integrated optics
- .....Light fields
- .....Light sources
- .....Electroluminescent devices



- .....Fast light
- .....Luminescent devices
- .....Phosphors
- .....Slow light
- .....Stray light
- .....Superluminescent diodes
- .....Ultraviolet sources
- .....Luminescence
- .....Chemiluminescence
- .....Electroluminescence
- .....Fluorescence
- .....Phosphorescence
- .....Photoluminescence
- .....Thermoluminescence
- .....Microoptics
- .....Micromirrors
- .....Nonlinear optics
- .....Fiber nonlinear optics
- .....Nonlinear optical devices
- .....Optical mixing
- .....Optical saturation
- .....Photorefractive effect
- .....Raman scattering
- .....Supercontinuum generation
- .....Optical amplifiers
- .....Doped fiber amplifiers
- .....Erbium-doped fiber amplifiers
- .....Semiconductor optical amplifiers
- .....Optical antennas
- .....Nanoantennas
- .....Optical crosstalk
- .....Optical design
- .....Optical design techniques
- .....Optical devices
- .....Bragg gratings
- .....Collimators
- .....Displays
- .....Holographic optical components
- .....Lenses
- .....Light deflectors
- .....Lighting
- .....Luminescent devices
- .....Mirrors
- .....Optical arrays
- .....Optical attenuators
- .....Optical collimators
- .....Optical device fabrication
- .....Optical filters
- .....Optical modulators
- .....Optical resonators
- .....Optical sensors
- .....Retroreflectors
- .....Thermo-optical devices
- .....Optical distortion
- .....Optical engineering
- .....Optical fiber applications
- .....Optical fiber devices
- .....Optical harmonic generation
- .....Optical losses
- .....Optical microscopy
- .....Optical mixing
- .....Multiwave mixing
- .....Optical polarization
- .....Polarization shift keying
- .....Stokes parameters
- .....Optical pulses
- .....Optical retarders
- .....Optical saturation
- .....Optical solitons
- .....Optical tuning
- .....Optogenetics
- .....Particle beam optics
- .....Atom optics
- .....Electron optics
- .....Stimulated emission
- .....Photoluminescence
- .....Physical optics
- .....Optical refraction
- .....Optical vortices
- .....Ray tracing
- .....Stray light
- .....Ultrafast optics
- .....Whispering gallery modes
- .....Optoelectronic devices
- .....Charge-coupled image sensors
- .....Integrated optoelectronics
- .....Light emitting diodes
- .....Inorganic light emitting diodes
- .....LED lamps
- .....Organic light emitting diodes
- .....Superluminescent diodes
- .....Photoconducting devices
- .....Electrophotography
- .....Photodetectors
- .....Photodiodes
- .....Phototransistors
- .....Superconducting photodetectors
- .....Superluminescent diodes
- .....Photonics
- .....Biophotonics
- .....Microwave photonics
- .....Nanobiophotonics



- .....Nanophotonics
- .....Photochromism
- .....Photon detectors
- .....Photothermal effects
- .....Silicon photonics
- .....Spontaneous emission
- .....Radiative recombination

**Magnetics**

- ....Biomagnetics
  - .....Magnetoencephalography
- ....Demagnetization
- ....Gyromagnetism
- ....Magnetic analysis
  - .....Magnetization
- ....Magnetic anisotropy
  - .....Magnetic domain walls
  - .....Magnetic domains
  - .....Magnetic moments
  - .....Perpendicular magnetic anisotropy
- ....Magnetic devices
  - .....Accelerator magnets
  - .....Ferrite devices
    - .....Circulators
  - .....Magnetic cores
    - .....Transformer cores
  - .....Magnetic gears
  - .....Magnetic heads
  - .....Magnetic memory
    - .....Floppy disks
    - .....Hard disks
  - .....Magnetic modulators
  - .....Magneto optic devices
  - .....Magnetoresistive devices
  - .....Magnetostrictive devices
  - .....Solenoids
  - .....Transformer cores
  - .....Undulators
- ....Magnetic fields
  - .....Geomagnetism
    - .....Geomagnetic storms
  - .....Magnetic reconnection
  - .....Magnetic separation
  - .....Magnetostatics
  - .....Toroidal magnetic fields
- ....Magnetic flux
  - .....Flux pinning
  - .....Magnetic flux density
  - .....Magnetic flux leakage
  - .....Magnetic force microscopy

- ....Magnetic forces
  - .....Coercive force
- ....Magnetic hysteresis
- ....Magnetic levitation
  - .....Magnetic levitation vehicles
- ....Magnetic losses
- ....Magnetic materials
  - .....Amorphous magnetic materials
  - .....Antiferromagnetic materials
  - .....Diamagnetic materials
  - .....Ferrimagnetic films
  - .....Ferrimagnetic materials
    - .....Ferrimagnetic films
  - .....Ferrite films
  - .....Ferrites
    - .....Garnet films
    - .....Garnets
  - .....Ferrite films
  - .....Ferrites
    - .....Ferrite films
  - .....Ferrofluid
  - .....Ferromagnetic materials
  - .....Garnet films
  - .....Garnets
    - .....Garnet films
  - .....Magnetic films
  - .....Ferrimagnetic films
  - .....Ferrite films
  - .....Garnet films
  - .....Magnetic liquids
  - .....Magnetic semiconductors
  - .....Magnetic superlattices
  - .....Paramagnetic materials
    - .....Superparamagnetic iron oxide nanoparticles
  - .....Soft magnetic materials
- ....Magnetic multilayers
- ....Magnetic particles
- ....Magnetic properties
- ....Magnetic sensors
  - .....Spin valves
- ....Magnetic susceptibility
- ....Magnetic switching
- ....Magnetization processes
  - .....Magnetization reversal
  - .....Saturation magnetization
- ....Magnetoacoustic effects
- ....Magnetoelectric effects
  - .....Hall effect
  - .....Magnetic tunneling
  - .....Magnetoelectronics



- .....Spin polarized transport
- .....Magnetoresistance
- .....Anisotropic magnetoresistance
- .....Colossal magnetoresistance
- .....Enhanced magnetoresistance
- .....Extraordinary magnetoresistance
- .....Giant magnetoresistance
- .....Ordinary magnetoresistance
- .....Tunneling magnetoresistance
- .....Spintronics
- ...Magnetomechanical effects
- .....Magnetic field induced strain
- .....Magnetoelasticity
- .....Magnetostriction
- .....Magnetostriction
- ...Magneto optic effects
- .....Faraday effect
- .....Gyrotropism
- ...Magnets
- .....Electromagnets
- .....Superconducting magnets
- .....Micromagnetics
- .....Permanent magnets
- ...Magnonics
- ...Microwave magnetics
- ...Nanomagnetics
- ...Nonlinear magnetics
- ...Remanence
- ...Spin systems
- .....Diamond
- .....Fullerenes
- .....Graphene
- .....Graphite
- .....Cerium
- .....Cesium
- .....Chlorine
- .....Chlorine compounds
- .....Dysprosium
- .....Europium
- .....Fluorine
- .....Fluorine compounds
- .....Gadolinium
- .....Gadolinium oxide
- .....Hafnium
- .....Hafnium compounds
- .....Helium
- .....Holmium
- .....Hydrogen
- .....Deuterium
- .....Green hydrogen
- .....Iodine
- .....Iodine compounds
- .....Iridium
- .....Isotopes
- .....Krypton
- .....Lutetium
- .....Mercury (metals)
- .....Molybdenum
- .....Neon
- .....Neptunium
- .....Nitrogen
- .....Denitrification
- .....Nitrogen compounds
- .....Silicon nitride
- .....Osmium
- .....Oxygen
- .....Phosphorus
- .....Plutonium
- .....Polonium
- .....Potassium
- .....Praseodymium
- .....Promethium
- .....Protactinium
- .....Radium
- .....Radon
- .....Rhenium
- .....Rhodium
- .....Roentgenium
- .....Rubidium
- .....Ruthenium

**Materials, elements, and compounds**

- ...Atoms
- .....Ultracold atoms
- ...Chemical elements
- .....Aluminum
- .....Aluminum alloys
- .....Aluminum compounds
- .....Americium
- .....Antimony
- .....Arsenic
- .....Arsenic compounds
- .....Beryllium
- .....Boron
- .....Boron alloys
- .....Bromine
- .....Bromine compounds
- .....Californium
- .....Carbon
- .....Carbon cycle
- .....Carbon nanotubes



- .....Scandium
- .....Selenium
- .....Sodium
- .....Sulfur
- .....Sulfur compounds
- .....Tantalum
- .....Technetium
- .....Tellurium
- .....Terbium
- .....Thallium
- .....Thorium
- .....Thulium
- .....Titanium
- .....Titanium alloys
- .....Titanium compounds
- .....Titanium dioxide
- .....Titanium nitride
- .....Uranium
- .....Vanadium
- .....Ytterbium
- .....Yttrium
- .....Yttrium compounds
- .....Zirconium
- .....Zirconium compounds
- ....Compounds
- .....Bismuth compounds
- .....Gallium compounds
- .....Aluminum gallium nitride
- .....Gallium arsenide
- .....Gallium nitride
- .....Gallium oxide
- .....Indium gallium arsenide
- .....Indium gallium nitride
- .....Indium compounds
- .....Indium gallium arsenide
- .....Indium tin oxide
- .....Inorganic compounds
- .....Transition metal compounds
- .....Lead compounds
- .....Organic compounds
- .....Carbon compounds
- .....Formaldehyde
- .....Organic semiconductors
- .....Volatile organic compounds
- .....Silicon compounds
- .....Silicides
- .....Silicon carbide
- .....Silicon dioxide
- .....Silicon nitride
- ....Material storage
- .....Bulk storage
- .....Containers
- .....Freight containers
- .....Fuel storage
- .....Secure storage
- .....Stacking
- .....Storage automation
- .....Warehousing
- .....Water storage
- .....Dams
- .....Reservoirs
- ...Materials
- .....Acoustic materials
- .....Additives
- .....Aggregates
- .....Amorphous materials
- .....Diamond-like carbon
- .....Glass
- .....Auxetic materials
- .....Bio-inspired materials
- .....Self-assembly
- .....Biological materials
- .....Bioceramics
- .....Biofilms
- .....Biomedical materials
- .....Bioceramics
- .....Biomembranes
- .....Building materials
- .....Asphalt
- .....Concrete
- .....Floors
- .....Mortar
- .....Tiles
- .....Windows
- .....Catalysts
- .....Electrocatalysts
- .....Photocatalysts
- .....Ceramics
- .....Bioceramics
- .....Porcelain
- .....Composite materials
- .....Cermets
- .....Conducting materials
- .....Electrolytes
- .....Corrosion inhibitors
- .....Crystalline materials
- .....Martensite
- .....Nanocrystals
- .....Perovskites
- .....Superlattices
- .....Crystals
- .....Colloidal crystals



- .....Crystal microstructure
- .....Crystallography
- .....Grain boundaries
- .....Grain size
- .....Liquid crystals
- .....Quartz crystals
- .....Dielectric materials
- .....Dielectric films
- .....Dielectric liquids
- .....Electrets
- .....Epoxy resins
- .....High-k dielectric materials
- .....Piezoelectric materials
- .....Films
- .....Conductive films
- .....Dielectric films
- .....Epitaxial layers
- .....Ferrimagnetic films
- .....Ferrite films
- .....Garnet films
- .....Magnetic films
- .....Optical films
- .....Piezoelectric films
- .....Plastic films
- .....Polymer films
- .....Semiconductor films
- .....Thick films
- .....Thin films
- .....Fluids
- .....Ferrofluid
- .....Fluid dynamics
- .....Gases
- .....Hydraulic fluids
- .....Liquids
- .....Viscosity
- .....Hazardous materials
- .....Inorganic materials
- .....Intelligent materials
- .....Lacquers
- .....Laminates
- .....Magnetic materials
- .....Amorphous magnetic materials
- .....Antiferromagnetic materials
- .....Diamagnetic materials
- .....Ferrimagnetic films
- .....Ferrimagnetic materials
- .....Ferrite films
- .....Ferrites
- .....Ferrofluid
- .....Ferromagnetic materials
- .....Garnet films
- .....Garnets
- .....Magnetic films
- .....Magnetic liquids
- .....Magnetic semiconductors
- .....Magnetic superlattices
- .....Paramagnetic materials
- .....Soft magnetic materials
- .....Material properties
- .....Creep
- .....Elasticity
- .....Elongation
- .....Resilience
- .....Rigidity
- .....Media
- .....Fake news
- .....Nonhomogeneous media
- .....Photorealism
- .....Random media
- .....Mesoporous materials
- .....Metal foam
- .....Metallic materials
- .....Metamaterials
- .....Electromagnetic metamaterials
- .....Optical cloaking
- .....Optical metamaterials
- .....Nanostructured materials
- .....Nanocomposites
- .....Nanoporous materials
- .....Oils
- .....Lubricating oils
- .....Vegetable oils
- .....Optical materials
- .....Colloidal nanocrystals
- .....Optical cloaking
- .....Optical polymers
- .....Optical retarders
- .....Optical superlattices
- .....Photorefractive materials
- .....Organic inorganic hybrid materials
- .....Organic materials
- .....Paints
- .....Paper pulp
- .....Petrochemicals
- .....Phase change materials
- .....Photoconducting materials
- .....Plastics
- .....Epoxy resins
- .....Fiber reinforced plastics
- .....Plastic films
- .....Plastic optical fiber
- .....Plastic waste



- .....Polymer foams
- .....Polymer gels
- .....Polymers
  - .....Azobenzene
  - .....Biopolymers
  - .....Cellulose
  - .....Elastomers
  - .....Hydrogels
  - .....Liquid crystal polymers
  - .....Optical polymers
  - .....Polycaprolactone
  - .....Polyethylene
  - .....Polyimides
  - .....Polymer fibers
- .....Production materials
  - .....Abrasives
  - .....Aerospace materials
  - .....Automotive materials
  - .....Inhibitors
  - .....Ink
  - .....Joining materials
  - .....Lubricants
  - .....Retardants
- .....Quantum materials
- .....Radioactive materials
  - .....Radioactive decay
  - .....Radioactive waste
- .....Raw materials
- .....Resins
  - .....Epoxy resins
  - .....Resists
- .....Semiconductor materials
  - .....Amorphous semiconductors
  - .....Deep level transient spectroscopy
  - .....Elemental semiconductors
  - .....Gallium
  - .....Gallium arsenide
  - .....Germanium
  - .....III-V semiconductor materials
  - .....II-VI semiconductor materials
  - .....Indium gallium arsenide
  - .....Indium phosphide
  - .....Magnetic semiconductors
  - .....Organic semiconductors
  - .....Semiconductor superlattices
  - .....Silicon
  - .....Silicon germanium
  - .....Substrates
  - .....Transition metal dichalcogenides
  - .....Wide band gap semiconductors
- .....Sheet materials
- .....Smart materials
  - .....Biomimetic materials
  - .....Smart textiles
- .....Solids
  - .....Young's modulus
- .....Superconducting materials
  - .....Granular superconductors
  - .....High-temperature superconductors
  - .....Multifilamentary superconductors
  - .....Niobium-tin
  - .....Superconducting filaments
  - .....Superconducting wires
  - .....Type II superconductors
- .....Surfactants
- .....Terahertz materials
  - .....Terahertz metamaterials
- .....Textiles
  - .....Cotton
  - .....Fabrics
  - .....Textile fibers
  - .....Wool
- .....Thermoelectric materials
- .....Waste materials
  - .....Effluents
  - .....Electronic waste
  - .....Food waste
  - .....Industrial waste
  - .....Plastic waste
  - .....Radioactive waste
  - .....Slurries
  - .....Wastewater
- .....Wire
- ....Materials science and technology
  - .....Absorption
  - .....Aging
    - .....Accelerated aging
  - .....Chemical analysis
    - .....Activation analysis
    - .....Chemical processes
  - .....Chemicals
  - .....Electronic noses
  - .....pH measurement
  - .....Computational materials science
  - .....Contamination
    - .....Surface contamination
  - .....Degradation
    - .....Desertification
  - .....Filtration
    - .....Microfiltration
  - .....Hysteresis
  - .....Impurities



.....Semiconductor impurities	.....Surface treatment
.....Materials handling	....Metals
.....Cleaning	.....Alloying
.....Decontamination	.....Intermetallic
.....Freight handling	.....Shape memory alloys
.....Materials handling equipment	.....Aluminum
.....Pallets	.....Aluminum alloys
.....Remote handling	.....Aluminum compounds
.....Sieving	.....Barium
.....Materials preparation	.....Barium compounds
.....Doping	.....Bismuth
.....Firing	.....Boron
.....Ion implantation	.....Boron alloys
.....Laser sintering	.....Cadmium
.....Sputtering	.....Cadmium compounds
.....Materials reliability	.....Calcium
.....Materials testing	.....Calcium compounds
.....Accelerated aging	.....Chromium
.....Acoustic testing	.....Chromium alloys
.....Adhesive strength	.....Cobalt
.....Bonding forces	.....Cobalt alloys
.....Delamination	.....Copper
.....Elastic recovery	.....Copper alloys
.....Nondestructive testing	.....Copper compounds
.....Metallurgy	.....Digital alloys
.....Microstructure	.....Erbium
.....Periodic structures	.....Gallium
.....Gratings	.....Gallium alloys
.....Photonic crystals	.....Germanium
.....Pigmentation	.....Germanium alloys
.....Pigments	.....Gold
.....Separation processes	.....Gold alloys
.....Electrophoresis	.....Hafnium
.....Fractionation	.....Hafnium compounds
.....Particle separators	.....Indium
.....Surface engineering	.....Iron
.....Surfaces	.....Cast iron
.....Corrosion	.....Iron alloys
.....Corrugated surfaces	.....Lanthanum
.....Metasurfaces	.....Lanthanum compounds
.....Rough surfaces	.....Lead
.....Surface impedance	.....Lead isotopes
.....Surface morphology	.....Lithium
.....Surface resistance	.....Lithium compounds
.....Surface roughness	.....Magnesium
.....Surface soil	.....Magnesium compounds
.....Surface stress	.....Manganese
.....Surface structures	.....Manganese alloys
.....Surface tension	.....Mercury (metals)
.....Surface texture	.....Metallization
.....Surface topography	.....Integrated circuit metallization



- .....Neodymium
- .....Neodymium alloys
- .....Neodymium compounds
- .....Nickel
- .....Nickel alloys
- .....Nickel compounds
- .....Niobium
- .....Niobium alloys
- .....Niobium compounds
- .....Palladium
- .....Platinum
- .....Platinum alloys
- .....Rare earth metals
- .....Samarium
- .....Samarium alloys
- .....Samarium compounds
- .....Silver
- .....Steel
- .....Martensite
- .....Strontium
- .....Strontium compounds
- .....Tin
- .....Tin alloys
- .....Tin compounds
- .....Titanium
- .....Titanium alloys
- .....Titanium compounds
- .....Titanium dioxide
- .....Titanium nitride
- .....Tungsten
- .....Yttrium
- .....Yttrium compounds
- .....Zinc
- .....Zinc compounds

**Mathematics**

- ....Algebra
- .....Abstract algebra
- .....Galois fields
- .....Modules (abstract algebra)
- .....Boolean algebra
- .....Boolean functions
- .....Linear algebra
- .....Linear programming
- .....Matrices
- .....Vectors
- .....Set theory
- .....Fuzzy set theory
- .....Fuzzy sets
- .....Rough sets

- ....Algorithms
- .....Adaptive algorithms
- .....Adaptation models
- .....Algorithm design and analysis
- .....Algorithmic efficiency
- .....Computational statistics
- .....Generative adversarial networks
- .....Algorithm design and theory
- .....Backtracking
- .....Consensus algorithm
- .....Flower pollination algorithm
- .....Approximation algorithms
- .....Artificial bee colony algorithm
- .....Backpropagation algorithms
- .....Backpropagation through time
- .....Basis algorithms
- .....Bees algorithm
- .....Change detection algorithms
- .....Classification algorithms
- .....Multi label classification
- .....Relevance vector machines
- .....Clustering algorithms
- .....Affinity propagation
- .....Compression algorithms
- .....Density estimation robust algorithm
- .....Detection algorithms
- .....Defect detection
- .....Distributed algorithms
- .....Dynamic programming
- .....Filtering algorithms
- .....Genetic algorithms
- .....Genetic operators
- .....Glowworm swarm optimization
- .....Hash functions
- .....Cryptographic hash function
- .....Heuristic algorithms
- .....Inference algorithms
- .....Krill herd algorithm
- .....Machine learning algorithms
- .....Kernel machines
- .....Matching pursuit algorithms
- .....Maximum likelihood detection
- .....MLFMA
- .....Multicast algorithms
- .....Parallel algorithms
- .....Partitioning algorithms
- .....Prediction algorithms
- .....Procedural generation
- .....Projection algorithms
- .....Pursuit algorithms
- .....Signal processing algorithms



- .....Software algorithms
- .....Viterbi algorithm
- .....Whale optimization algorithms
- ....Arithmetic
  - .....Digital arithmetic
  - .....Fixed-point arithmetic
  - .....Floating-point arithmetic
- ....Azimuth
  - .....Azimuthal angle
  - .....Azimuthal component
  - .....Azimuthal current
  - .....Azimuthal harmonics
  - .....Azimuthal plane
- ....Boundary value problems
  - .....Boundary conditions
    - .....Lower bound
    - .....Upper bound
- ....Calculus
  - .....Differential equations
    - .....Differential algebraic equations
    - .....Differential operators
      - .....Navier-Stokes equations
      - .....Ordinary differential equations
      - .....Partial differential equations
    - .....Transfer functions
  - .....Integral equations
    - .....Probability density function
  - .....Level set
- ....Chemical reaction network theory
- ....Closed-form solutions
- ....Combinatorial mathematics
  - .....Graph theory
    - .....Bipartite graph
    - .....Conditional random fields
    - .....Directed acyclic graph
    - .....Directed graphs
    - .....Graph neural networks
    - .....Network motifs
    - .....Optimal matching
    - .....Reachability analysis
    - .....Shortest path problem
    - .....Tree graphs
    - .....Steiner trees
  - .....Computational efficiency
  - .....Conformal mapping
  - .....Convergence
  - .....Convex functions
  - .....Convex hulls
  - .....Semidefinite programming
  - .....Cyclic redundancy check
  - .....Cyclic redundancy check codes
- ....Dynamical systems
  - .....Nonlinear dynamical systems
- ....Eigenvalues and eigenfunctions
- ....Equations
  - .....Boltzmann equation
  - .....Difference equations
  - .....Integrodifferential equations
  - .....Maxwell equations
  - .....Nonlinear equations
    - .....Bifurcation
  - .....Polynomials
  - .....Riccati equations
- ....Estimation
  - .....Estimation error
  - .....Estimation theory
    - .....Cramer-Rao bounds
    - .....Maximum a posteriori estimation
  - .....Functional point analysis
  - .....Life estimation
  - .....Maximum likelihood estimation
  - .....Pose estimation
  - .....State estimation
    - .....Observers
  - .....Yield estimation
- ....Euclidean distance
- ....Hilbert space
- ....Finite difference methods
- ....Finite element analysis
- ....Fourier series
- ....Functional analysis
- ....Geometry
  - .....Computational geometry
  - .....Fractals
  - .....Geometric modeling
  - .....Elliptic curves
  - .....Elliptic design
  - .....Ellipsoids
  - .....Information geometry
  - .....Projective geometry
  - .....Surface topography
    - .....Nanotopography
- ....Gradient methods
- ....Graph theory
  - .....Bipartite graph
  - .....Conditional random fields
  - .....Directed acyclic graph
  - .....Directed graphs
    - .....Fuzzy cognitive maps
  - .....Graph neural networks
  - .....Graph convolutional networks
  - .....Network motifs



- .....Optimal matching
- .....Reachability analysis
- .....Shortest path problem
- .....Tree graphs
- ....Harmonic analysis
- ....Hypercomplex
- ....Iterative methods
- .....Expectation-maximization algorithms
- .....Iterative algorithms
- .....Iterative closest point algorithm
- .....Sum product algorithm
- .....Iterative learning control
- ....Kernel
- .....Null space
- .....System kernels
- ....Laplace equations
- ....Lattices
- .....Lattice Boltzmann methods
- ....Lie groups
- ....Limit-cycles
- ....Linear matrix inequalities
- ....Linear systems
- .....Sparse approximation
- ....Linearization techniques
- ....Mathematical models
- .....Geometric modeling
- .....Mathematical analysis
- .....Accuracy
- .....Formal concept analysis
- .....Fractional calculus
- .....Modal analysis
- .....Optimization models
- .....Overfitting
- ....Mathematical programming
- ....Method of moments
- ....Minimization
- .....Minimization methods
- ....Mode matching methods
- ....Network theory (graphs)
- ....Nonlinear equations
- .....Bifurcation
- ....Nonlinear systems
- .....Chaos
- .....Chaotic communication
- .....Complexity theory
- .....Spatiotemporal phenomena
- ....Nonlinear dynamical systems
- ....Numerical analysis
- .....Adaptive mesh refinement
- .....Approximation methods
- .....Approximation error
- .....Chebyshev approximation
- .....Curve fitting
- .....Extrapolation
- .....Function approximation
- .....Interpolation
- .....Linear approximation
- .....Mean square error methods
- .....Perturbation methods
- .....Convergence of numerical methods
- .....Finite difference methods
- .....Finite element analysis
- .....Finite volume methods
- .....Gradient methods
- .....Independent component analysis
- .....Iterative methods
- .....Expectation-maximization algorithms
- .....Iterative algorithms
- .....Iterative learning control
- .....Least squares approximations
- .....Least mean squares methods
- .....Method of moments
- .....Mode matching methods
- .....Multigrid methods
- .....Newton method
- .....Numerical simulation
- .....Numerical stability
- .....Relaxation methods
- .....Sparse matrices
- .....Splines (mathematics)
- .....Surface fitting
- .....Response surface methodology
- .....Symmetric matrices
- .....Transmission line matrix methods
- ....Optimization
- .....Bees algorithm
- .....Cost function
- .....Krill herd algorithm
- .....Metaheuristics
- .....Quantum annealing
- .....Optimal scheduling
- .....Optimization methods
- .....Affordances
- .....Circuit optimization
- .....Concave programming
- .....Design optimization
- .....Fireworks algorithm
- .....Glowworm swarm optimization
- .....Gradient methods
- .....H infinity control
- .....Lagrangian functions



- .....Mathematical programming
- .....Optimization models
- .....Optimized production technology
- .....Pareto optimization
- .....Quadratic programming
- .....Simulated annealing
- .....Trajectory optimization
- ....Piecewise linear techniques
- .....Piecewise linear approximation
- ....Predator prey systems
- ....Probability
- .....Ant colony optimization
- .....Bayes methods
- .....Naive Bayes methods
- .....Recursive estimation
- .....Error probability
- .....Forecasting
- .....Demand forecasting
- .....Economic forecasting
- .....Forecast uncertainty
- .....Technology forecasting
- .....Hindcasting
- .....Memoryless systems
- .....Multi-armed bandit problem
- .....Pairwise error probability
- .....Possibility theory
- .....Posterior probability
- .....Probability distribution
- .....Exponential distribution
- .....Heavily-tailed distribution
- .....Kurtosis
- .....Lightly-tailed distribution
- .....Log-normal distribution
- .....Maxwell-Boltzmann distribution
- .....Nakagami distribution
- .....Random variables
- .....Nonce
- .....Statistical distributions
- .....Distribution functions
- .....Gaussian distribution
- .....Weibull distribution
- .....Uncertainty
- .....Evidence theory
- .....Forecast uncertainty
- ....Quaternions
- ....Random processes
- .....Brownian motion
- .....Conditional random fields
- .....Random forests
- ....Root mean square
- ....Sequences
- .....Binary sequences
- .....Random sequences
- ....Set theory
- .....Fuzzy set theory
- .....Fuzzy sets
- .....Rough sets
- ....Simulated annealing
- ....Smoothing methods
- ....Spirals
- ....Statistics
- .....Adaptive estimation
- .....Autoregressive processes
- .....Biostatistics
- .....Boltzmann distribution
- .....Lattice Boltzmann methods
- .....Computational statistics
- .....Correlation
- .....Autocorrelation
- .....Correlation coefficient
- .....Covariance matrices
- .....Cyclostationary process
- .....Decision theory
- .....Decision making
- .....Decision trees
- .....TOPSIS
- .....Weighted sum model
- .....Differential privacy
- .....Dimensionality reduction
- .....Manifold learning
- .....Ensemble learning
- .....Fish schools
- .....Gamma distribution
- .....Gaussian mixture model
- .....Higher order statistics
- .....Histograms
- .....Imputation
- .....Linear discriminant analysis
- .....Maximum likelihood estimation
- .....Minimax techniques
- .....Mixture models
- .....Mortality
- .....Nonparametric statistics
- .....Nearest neighbor methods
- .....Parametric statistics
- .....Prediction theory
- .....Ranking (statistics)
- .....Root mean square
- .....Sampling methods
- .....Compressed sensing
- .....Nonuniform sampling
- .....Synthetic data



- .....Statistical analysis
  - .....Analysis of variance
  - .....Conditional random fields
  - .....Functional data analysis
  - .....Mean field theory
  - .....Mode matching methods
  - .....Monte Carlo methods
  - .....Parameter estimation
  - .....Pareto analysis
  - .....Predictive analytics
  - .....Principal component analysis
  - .....Regression analysis
  - .....Static analysis
- .....Surveys
- .....Time series analysis
- ....Stochastic processes
  - .....Gaussian processes
  - .....Gaussian mixture model
  - .....Markov processes
  - .....Markov decision processes
  - .....Markov random fields
- .....Scenario generation
- ....Superposition calculus
- ....Taylor series
- ....Tensors
- ....Topology
- ....Transforms
  - .....Discrete transforms
    - .....Discrete cosine transforms
    - .....Discrete Hartley transforms
  - .....Empirical mode decomposition
  - .....Fourier transforms
    - .....Discrete Fourier transforms
    - .....Fast Fourier transforms
    - .....Fourier transform infrared spectroscopy
  - .....Karhunen-Loeve transforms
  - .....Poincare invariance
  - .....Wavelet transforms
    - .....Biorthogonal modulation
    - .....Continuous wavelet transforms
    - .....Discrete wavelet transforms
    - .....Wavelet coefficients
    - .....Wavelet packets
- ....Transmission line matrix methods
- ....Uncertain systems
- ....Utility theory

**Microwave theory and techniques**

- ....Microwave technology

- .....Baluns
- .....Beam steering
  - .....Steerable antennas
- .....Circulators
- .....Masers
  - .....Gyrotrons
- .....Microwave ablation
- .....Microwave bands
  - .....C-band
  - .....Ka-band
  - .....K-band
  - .....Ku-band
  - .....L-band
- .....Microwave circuits
- .....Microwave communication
  - .....Rectennas
- .....Microwave devices
  - .....Masers
  - .....Microwave amplifiers
  - .....Microwave filters
  - .....Microwave transistors
- .....Microwave generation
  - .....High power microwave generation
- .....Microwave photonics
- .....Microwave sensors
- ....Millimeter wave technology
  - .....Millimeter wave circuits
    - .....Millimeter wave integrated circuits
    - .....Millimeter wave devices
      - .....Millimeter wave transistors
  - .....MIMICs
  - .....Millimeter wave radar
- ....Submillimeter wave technology
  - .....Submillimeter wave circuits
    - .....Submillimeter wave integrated circuits
  - .....Submillimeter wave communication
  - .....Submillimeter wave devices
    - .....Submillimeter wave filters
  - .....Submillimeter wave integrated circuits

**Nanotechnology**

- ....Bionanotechnology
- ....Casimir effect
- ....Molecular computing
- ....Molecular electronics
- ....Nanobioscience
  - .....DNA computing
  - .....Nanobiotechnology



- .....Nanobiophotonics
- ....Nanocommunication
- ...Nanoelectromechanical systems
- ....Nanoelectronics
- .....Junctionless nanowire transistors
- ....Nanofabrication
- ....Nanofluidics
- ....Nanolithography
- ....Nanomagnetics
- ....Nanomaterials
- .....Nanocarriers
- ....Nanopackaging
- ....Nanopatterning
- .....Colloidal lithography
- ....Nanophotonics
- ....Nanoplasmonics
- .....Surface plasmon resonance
- ....Nanopositioning
- ....Nanoscale technology
- .....Nanopores
- .....Nanoscale devices
- .....Nanoantennas
- .....Nanocontacts
- .....Nanotube devices
- ....Nanosensors
- ....Nanostructured materials
- .....Nanocomposites
- .....Nanoporous materials
- ....Nanostructures
- .....Nanoparticles
- .....Magnetic nanoparticles
- .....Nanocrystals
- .....Nanoribbons
- .....Nanorods
- .....Nanotubes
- .....Carbon nanotubes
- .....Semiconductor nanotubes
- .....Nanowires
- .....Semiconductor nanostructures
- ....Self-assembly
- .....Electrostatic self-assembly
- ....Self-replicating machines
- Nuclear and plasma sciences**
- ....Biomedical applications of radiation
- .....Radiation therapy
- ....Colliding beam devices
- .....Colliding beam accelerators
- .....Muon colliders
- ....Electron emission
- .....Ballistic transport
- .....Electronic ballasts
- ...Elementary particles
- .....Charge carriers
- .....Charge carrier density
- .....Charge carrier lifetime
- .....Charge carrier mobility
- .....Charge carrier processes
- .....Hot carriers
- .....Electrons
- .....Electron sources
- .....Quantum wells
- .....Trions
- .....Elementary particle exchange interactions
- .....Elementary particle vacuum
- .....Ions
- .....Ion sources
- .....Ionization
- .....Trapped ions
- .....Mesons
- .....Neutrino sources
- .....Neutrons
- .....Particle beams
- .....Atomic beams
- .....Electron beams
- .....Ion beams
- .....Particle collisions
- .....Phonons
- .....Positrons
- .....Protons
- ...Fusion power generation
- ...Fusion reactors
- .....Fusion reactor design
- .....Tokamaks
- .....Tokamak devices
- ...Gamma-rays
- .....Gamma-ray bursts
- .....Gamma-ray detection
- .....Gamma-ray effects
- ...Gas discharge devices
- .....Glow discharge devices
- ...Helioseismology
- ...High energy physics instrumentation computing
- .....Linear particle accelerator
- ...Ion beam applications
- .....Ion implantation
- .....Plasma immersion ion implantation
- ...Nuclear electronics
- ...Nuclear imaging



- .....Energy resolution
- .....Ion emission
- ....Nuclear medicine
- ....Nuclear physics
- .....Alpha particles
- .....Beta rays
- .....Ignition
- .....Ion sources
- .....Isotopes
- .....Nuclear phase transformations
- .....Nuclear thermodynamics
- .....Relativistic effects
- .....Optical flow
- ....Particle accelerators
- .....Accelerator magnets
- .....Colliding beam accelerators
- .....Cyclotrons
- .....Electron accelerators
- .....Ion accelerators
- .....Linear accelerators
- .....Photon collider
- .....Plasma accelerators
- .....Proton accelerators
- .....Storage rings
- .....Synchrocyclotrons
- .....Synchrotrons
- .....Synchrotron radiation
- .....Undulators
- ....Particle beam handling
- ....Particle beam bunching
- ....Particle beam injection
- ....Plasmas
- .....Atmospheric-pressure plasmas
- .....Low-temperature plasmas
- .....Microwave plasmas
- .....Plasma applications
- .....Plasma devices
- .....Plasma immersion ion implantation
- .....Plasma welding
- .....Tokamaks
- .....Plasma confinement
- .....Inertial confinement
- .....Magnetic confinement
- .....Plasma diagnostics
- .....Plasma properties
- .....Dusty plasmas
- .....Plasma chemistry
- .....Plasma density
- .....Plasma sheaths
- .....Plasma stability
- .....Plasma temperature
- .....Plasmons
- .....Plasma simulation
- .....Plasma sources
- .....Plasma transport processes
- .....Plasma-assisted combustion
- ....Radiation effects
- .....Biological effects of radiation
- .....EMP radiation effects
- .....Gamma-ray effects
- .....Ion radiation effects
- .....Neutron radiation effects
- .....Scintillators
- .....Single event latchup
- .....Space radiation
- .....Terahertz radiation
- .....Total ionizing dose
- ....Radiation hardening (electronics)
- ....Radiation monitoring
- .....Radiation dosage
- ....Radiation safety
- .....Radiation protection
- .....Radiofrequency safety
- ....Reactor instrumentation
- ....Scintillation counters
- .....Solid scintillation detectors
- ....Thermionic emission

### **Oceanic engineering and marine Technology**

- ....Marine navigation
- ....Marine technology
- .....Marine equipment
- .....Marine transportation
- .....Marine vehicles
- .....Underwater cables
- .....Underwater communication
- .....Underwater equipment
- .....Hydrophones
- .....Rebreathing equipment
- .....Underwater structures
- .....Underwater technology
- .....Marine robots
- .....Underwater communication
- .....Underwater equipment
- .....Underwater navigation
- .....Underwater structures
- ....Ocean temperature
- .....Sea surface temperature
- ....Oceanographic techniques
- ....Water pollution



.....Marine pollution

**Power electronics**

- ....Converters
  - .....AC-AC converters
  - .....DC-AC power converters
  - .....Digital-to-frequency converters
  - .....Frequency conversion
    - .....Mixers
    - .....Optical frequency conversion
  - .....Multilevel converters
  - .....Power conversion
    - .....AC-AC converters
    - .....AC-DC power converters
    - .....DC-AC power converters
    - .....DC-DC power converters
    - .....Grid forming
    - .....Inverter-based resource
    - .....Matrix converters
    - .....Power conversion harmonics
    - .....Voltage-source converters
  - .....Pulse width modulation converters
  - .....Resonant converters
  - .....Static power converters
  - .....Voltage-source converters
  - .....Wavelength converters
- ....Current limiters
  - .....Fault current limiters
- ....Gate drivers
- ....Inverters
  - .....Grid following
  - .....Grid forming
  - .....Inverter-based resource
  - .....Multilevel inverters
  - .....Pulse inverters
  - .....Resonant inverters
  - .....Voltage source inverters
- ....Phase control
- ....Power conditioning
- ....Power smoothing
- ....Power semiconductor devices
  - .....Power transistors
  - .....Power semiconductor switches
    - .....Bipolar transistors
      - .....Insulated gate bipolar transistors
      - .....Kirk field collapse effect
    - .....Thyristors
      - .....Photothyristors
- ....Snubbers
- ....Three-phase electric power

**Power engineering and energy**

- ....Electric variables control
  - .....Current control
    - .....Electric current control
    - .....Electrical ballasts
  - .....Gain control
  - .....Power control
  - .....Power system control
    - .....Bidirectional power flow
    - .....Load flow control
    - .....SCADA systems
  - .....Reactive power control
  - .....Voltage control
    - .....Automatic voltage control
- ....Energy
  - .....Energy barrier
  - .....Energy capture
  - .....Energy consumption
  - .....Energy conversion
    - .....Atomic batteries
    - .....Batteries
    - .....Fuel cells
    - .....Motors
    - .....Photovoltaic cells
    - .....Potential well
    - .....Solar heating
    - .....Thermoelectricity
    - .....Waste heat
    - .....Wave energy conversion
    - .....Wind energy conversion
  - .....Energy dissipation
  - .....Energy exchange
    - .....Inductive charging
  - .....Energy harvesting
    - .....Nanogenerators
  - .....Energy management
    - .....Demand side management
    - .....Energy conservation
    - .....Energy efficiency
    - .....Energy informatics
    - .....Energy management systems
    - .....Load management
    - .....Transactive energy
  - .....Energy resources
    - .....Fuels
    - .....Geothermal energy
    - .....Nuclear energy
    - .....Solar energy
    - .....Wave power
    - .....Wind energy



- .....Wind farms
- .....Energy states
- .....Band structures
- .....Effective mass
- .....Fermi level
- .....Orbital calculations
- .....Polaritons
- .....Quasi-Fermi level
- .....Surface states
- .....Energy storage
- .....Batteries
- .....Battery energy storage system
- .....Battery storage plants
- .....Flywheels
- .....Fuel cells
- .....Hydrogen storage
- .....Supercapacitors
- .....Superconducting magnetic energy storage
- ....Power engineering
- .....Electrification
- .....Ferroresonance
- .....High-voltage techniques
- .....Power engineering computing
- .....Power system simulation
- ....Power generation
- .....Automatic generation control
- .....Cogeneration
- .....Distributed power generation
- .....Virtual power plants
- .....Geothermal power generation
- .....Hydroelectric power generation
- .....Hydroelectric-thermal power generation
- .....Microhydro power
- .....Picohydro power
- .....Wave energy conversion
- .....Magnetohydrodynamic power generation
- .....Nuclear power generation
- .....Atomic batteries
- .....Fission reactors
- .....Fusion power generation
- .....Power generation control
- .....Power generation dispatch
- .....Power generation planning
- .....Power generation reliability
- .....Solar power generation
- .....Maximum power point trackers
- .....Photovoltaic systems
- .....Solar farms
- .....Solar panels
- .....Trigeneration
- .....Turbomachinery
- .....Turbines
- .....Turbogenerators
- .....Wind energy generation
- .....Wind energy integration
- .....Wind power generation
- .....Wind energy conversion
- ...Power systems
- .....Data center power
- .....Energy Internet
- .....Hybrid power systems
- .....Industrial power systems
- .....Power distribution
- .....DC distribution systems
- .....Electrical power distribution
- .....Power distribution control
- .....Power distribution faults
- .....Power distribution lines
- .....Power distribution networks
- .....Power distribution planning
- .....Power distribution reliability
- .....Simultaneous wireless information and power transfer
- .....Power grids
- .....Microgrids
- .....Smart grids
- .....Power supplies
- .....Battery chargers
- .....Charging stations
- .....Current supplies
- .....Emergency power supplies
- .....Inductive charging
- .....Islanding
- .....Power demand
- .....Power quality
- .....Power system restoration
- .....Switched mode power supplies
- .....Traction power supplies
- .....Umbilical cable
- .....Power system analysis computing
- .....Power system dynamics
- .....Power system economics
- .....Low carbon economy
- .....Power system faults
- .....Power system harmonics
- .....Power harmonic filters
- .....Power system management
- .....Load flow
- .....Power system measurements



- .....Meter reading
- .....Power system planning
- .....Power demand
- .....Power distribution planning
- .....Power system protection
- .....Electrical safety
- .....Substation protection
- .....Surge protection
- .....Power system reliability
- .....Power distribution reliability
- .....Power system stability
- .....Power transmission
- .....AC power transmission
- .....Common Information Model (electricity)
- .....DC power transmission
- .....Flexible AC transmission systems
- .....HVDC transmission
- .....Inductive power transmission
- .....Static VAr compensators
- .....Transmission lines
- .....Wireless power transmission
- .....PSCAD
- .....Pulsed power systems
- .....Pulsed power supplies
- .....Reactive power
- .....Substations
- .....Substation automation
- .....Substation protection
- .....Transformers
- .....Baluns
- .....Current transformers
- .....Flyback transformers
- .....High-frequency transformers
- .....Instrument transformers
- .....Phase transformers
- .....Power transformers
- .....Pulse transformers
- .....Tap changers
- .....Vision transformers
- .....Uninterruptible power systems
- .....Wind energy integration
- Product safety engineering**
- ....Consumer protection
- ....Power system protection
- .....Electrical safety
- .....Fault protection
- .....Grounding
- .....Substation protection
- .....Surge protection
- .....Arresters
- ....Safety
- .....Aerospace safety
- .....Air safety
- .....Disasters
- .....Domestic safety
- .....Fall detection
- .....Emergency services
- .....Explosion protection
- .....Fire safety
- .....Food safety
- .....Hazards
- .....Biohazards
- .....Chemical hazards
- .....Explosions
- .....Fires
- .....Flammability
- .....Floods
- .....Hazardous areas
- .....Hazardous materials
- .....Toxicology
- .....Health and safety
- .....Occupational health
- .....Occupational safety
- .....Personal protective equipment
- .....Marine safety
- .....Product safety
- .....Protection
- .....Electrostatic discharge protection
- .....Explosion protection
- .....Lightning protection
- .....Radiation protection
- .....Public security
- .....Radiation safety
- .....Radiation protection
- .....Radiofrequency safety
- .....Safety devices
- .....Eye protection
- .....Fire extinguishers
- .....Protective clothing
- .....Safety management
- .....Vehicle safety
- .....Advanced driver assistance systems
- .....Lane departure warning systems
- .....Lane detection
- ....Vehicle crash testing



**Professional communication**

- ....Collaboration
  - .....Collaborative robots
  - .....Collaborative tools
    - .....Call conference
    - .....Collaborative software
    - .....Videoconferences
    - .....Discussion forums
    - .....Hackathon
    - .....Teamwork
    - .....Virtual groups
- ...Communication aids
  - .....Closed captioning
- ...Communication effectiveness
- ...Communication symbols
  - .....Semiotics
    - .....Pragmatics
    - .....Semantics
    - .....Syntactics
- ...Context
- ...Databases
  - .....Database systems
    - .....Audio databases
    - .....Deductive databases
    - .....Image databases
      - .....Indexes
      - .....Multimedia databases
      - .....NoSQL databases
      - .....Object oriented databases
      - .....Query processing
      - .....Sharding
      - .....Deductive databases
      - .....Distributed databases
        - .....Blockchains
        - .....Image databases
          - .....Image retrieval
        - .....Multimedia databases
        - .....Object oriented databases
        - .....Relational databases
        - .....Spatial databases
        - .....Transaction databases
          - .....Itemsets
        - .....Visual databases
          - .....Point cloud compression
  - .....Global communication
    - .....Cross-cultural communication
    - .....Geographic information systems
      - .....Geospatial analysis
      - .....Gunshot detection systems
- ...Grammar

- ....Inclusive language
- ....Information analysis
  - .....Decision analysis
  - .....Indexing
- ...Information integrity
- ...Information resources
- ...Information retrieval
  - .....Blogs
  - .....Content-based retrieval
  - .....Cross modal retrieval
  - .....Dimensionality reduction
    - .....Manifold learning
  - .....Hypertext systems
    - .....HTTP
  - .....Information filtering
    - .....Information filters
    - .....Recommender systems
  - .....Information rates
  - .....Music information retrieval
  - .....Online services
    - .....Mobility as a service
    - .....Online banking
    - .....Web conferencing
  - .....Search engines
  - .....Search methods
    - .....Keyword search
    - .....Metasearch
    - .....Search problems
    - .....Semantic search
    - .....Web search
  - .....Semantic communication
  - .....Social networking (online)
    - .....Community networks
      - .....Computer mediated communication
      - .....Cyberbullying
      - .....Information diffusion
        - .....Second Life
      - .....Tagging
        - .....Tag clouds
    - .....Taxonomy
    - .....Terminology
      - .....Dictionaries
        - .....Inclusive language
        - .....Visual information retrieval
        - .....Vocabulary
      - .....Web sites
        - .....Uniform resource locators
    - .....Web design
  - ...Information science
    - .....Quantum information science
      - .....Quantum channels



.....Quantum circuit	.....Digital preservation
....Information services	.....Document handling
.....Dictionaries	.....Enterprise architecture
.....Document delivery	management
.....Encyclopedias	.....Information security
.....Libraries	.....Information sharing
.....Software libraries	.....Knowledge transfer
.....Teletext	.....Information processing
.....Videotex	.....Electronic healthcare
....Information systems	.....Informatics
.....Data systems	.....Information exchange
.....Buffer storage	.....Smart agriculture
.....Data acquisition	.....Sonification
.....Data centers	.....Management information systems
.....Data compression	.....Portals
.....Data conversion	.....Medical information systems
.....Data engineering	.....Electronic medical records
.....Data handling	....Information technology
.....Data processing	.....Bring your own device
.....Data warehouses	.....DevOps
.....Database systems	.....Information age
.....Audio databases	.....Information and communication
.....Deductive databases	technology
.....Image databases	.....Ambient assisted living
.....Indexes	.....Information representation
.....Multimedia databases	.....Digital representation
.....NoSQL databases	.....Printing
.....Object oriented databases	.....Digital printing
.....Query processing	.....Ink jet printing
.....Sharding	.....Teleprinting
.....Decision support systems	.....Three-dimensional printing
.....Distributed information systems	.....Semantic technology
.....Distributed management	.....Service computing
.....Publish-subscribe	.....Service level agreements
.....Identity management systems	.....Telematics
.....Federated identity	.....Universal Serial Bus
.....Informatics	....Manuals
.....Bioinformatics	....Meetings
.....Cognitive informatics	.....Conferences
.....Energy informatics	....Oral communication
.....Neuroinformatics	.....Public speaking
.....Information architecture	.....Speech
.....Enterprise architecture	.....Hate speech
management	....Plagiarism
.....Information management	....Portfolios
.....Common Information Model	....Professional societies
(computing)	....Public speaking
.....Common Information Model	....Rhetoric
(electricity)	....Writing
.....Competitive intelligence	.....Abstracts
.....Digital information	.....Text summarization



- .....Bibliographies
- .....Biographies
- .....Autobiographies
- .....Braille
- .....Dictionaries
- .....Documentation
- .....Point of care
- .....Grammar
- .....Readability metrics
- .....Resumes
- .....Reviews
- .....Systematic literature review
- .....Thesauri

**Reliability**

- ....Availability
- ....Fault diagnosis
- .....Dissolved gas analysis
- .....Fault location
- ....Fault tolerance
- .....Fault tolerant computer networks
- .....Fault tolerant computing
- .....Fault tolerant control
- .....Redundancy
- ....Fluctuations
- ....Integrated circuit reliability
- ....Maintenance
- ....Maldistribution
- ....Materials reliability
- ....Reliability engineering
- ....Reliability theory
- ....Robustness
- ....Semiconductor device reliability
- ....Software reliability
- ....Stability
- .....Circuit stability
- .....Robust stability
- .....Stability analysis
- .....Stability criteria
- .....Thermal stability
- ....Telecommunication network reliability
- .....Diversity schemes

**Resonance**

- ....Ferroresonance
- ....Magnetic resonance
- .....Antiferromagnetic resonance
- .....Ferromagnetic resonance
- .....Nuclear magnetic resonance

- .....Paramagnetic resonance
- ....Resonance light scattering
- ....Stochastic resonance

**Robotics and automation**

- ....Animatronics
- ....Automation
- .....Automated highways
- .....Automated machine learning
- .....Automated parking
- .....Automatic generation control
- .....Automatic testing
- .....Automatic test pattern generation
- .....Ring generators
- .....Autonomous networks
- .....Building automation
- .....Fifth Industrial Revolution
- .....Fourth Industrial Revolution
- .....Intelligent automation
- .....Manufacturing automation
- .....Computer aided manufacturing
- .....Computer integrated manufacturing
- .....Computer numerical control
- .....Flexible manufacturing systems
- .....Office automation
- .....Workflow management software
- .....Storage automation
- .....Vehicular automation
- ....Autonomous systems
- .....Autonomous networks
- .....Autonomous robots
- .....Autonomous vehicles
- .....Autonomous aerial vehicles
- .....Autonomous automobiles
- .....Autonomous driving
- .....Autonomous underwater vehicles
- ....Cloud robotics
- ....Multi-robot systems
- .....Swarm robotics
- ....Robots
- .....Agricultural robots
- .....Amphibious robots
- .....Androids
- .....Aquatic robots
- .....Automata
- .....Turing machines
- .....Autonomous robots
- .....Bio-inspired robotics
- .....Cognitive robotics
- .....Collaborative robots



- .....Computer vision
- .....Active appearance model
- .....Blob detection
- .....Corner detection
- .....Face detection
- .....Feature detection
- .....Interest point detection
- .....Smart cameras
- .....Vision transformers
- .....Visual odometry
- .....Continuum robots
- .....Concentric tube robots
- .....Educational robots
- .....Evolutionary robotics
- .....Humanoid robots
- .....Industrial robots
- .....Intelligent robots
- .....Manipulators
- .....End effectors
- .....Manipulator dynamics
- .....Micromanipulators
- .....Marine robots
- .....Medical robotics
- .....Assistive robots
- .....Military robotics
- .....Mobile robots
- .....Climbing robots
- .....Legged locomotion
- .....Orbital robotics
- .....Parallel robots
- .....Quadrupedal robots
- .....Rescue robots
- .....Robot control
- .....Robot motion
- .....Robot kinematics
- .....Motion analysis
- .....Robot learning
- .....Robot programming
- .....Robot sensing systems
- .....Proprioception
- .....Robot vision systems
- .....Simultaneous localization and mapping
- .....Stereognosis
- .....Tactile sensors
- .....Service robots
- .....Assistive robots
- .....Snake robots
- .....Social robots
- .....Soft robotics
- .....Telerobotics

- .....Teleoperators
- .....Visual odometry
- .....Wearable robots

**Science – general**

- ....Astronomy
- .....Astrophysics
- .....Astero-seismology
- .....Dark matter
- .....Orbits
- .....Stellar dynamics
- .....Extrasolar planets
- .....Exoplanet
- .....Gravitational waves
- .....Observatories
- .....Radio astronomy
- .....Solar system
- .....Kuiper belt
- .....Planets
- .....Satellites
- .....Sun
- .....Stars
- .....Neutron stars
- .....X-ray astronomy
- ....Atmospheric science
- .....Climatology
- ....Biology
- .....Biochemistry
- .....Amino acids
- .....Biochemical analysis
- .....Biochemical oxygen demand
- .....Metabolism
- .....Peptides
- .....Proteins
- .....Receptor (biochemistry)
- .....Biodiversity
- .....Biogeography
- .....Endangered species
- .....Bioelectric phenomena
- .....Electric shock
- .....Biological cells
- .....Cell signaling
- .....Cells (biology)
- .....Chromosome mapping
- .....Endothelial cells
- .....Fibroblasts
- .....RNA
- .....Stem cells
- .....Biological information theory
- .....Biological processes



.....Biological interactions	.....Metabolism
.....Chronobiology	.....Neuromodulation
.....Circadian rhythm	.....Somatosensory
.....Coagulation	.....Predator prey systems
.....Molecular biology	.....Synthetic biology
.....Symbiosis	.....Systematics
.....Synaptic communication	.....Systems biology
.....Biological system modeling	.....Vegetation
.....Biological systems	.....Crops
.....Anatomy	.....Forests
.....Molecular communication	.....Marine vegetation
.....Organisms	.....Normalized difference vegetation
.....Biology computing	index
.....Biophotonics	.....Zoology
.....Biophysics	.....Animals
.....Aerospace biophysics	.....Entomology
.....Biomagnetics	...Chemistry
.....Cellular biophysics	.....Astrochemistry
.....Molecular biophysics	.....Biochemistry
.....Biostatistics	.....Amino acids
.....Botany	.....Biochemical analysis
.....Cryobiology	.....Biochemical oxygen demand
.....Embryology	.....Metabolism
.....Evolution (biology)	.....Peptides
.....Memetics	.....Proteins
.....Phylogeny	.....Receptor (biochemistry)
.....Genetics	.....Biogeochemistry
.....DNA	.....Chemical analysis
.....Epigenetics	.....Activation analysis
.....Gene therapy	.....Chemical processes
.....Genetic communication	.....Chemicals
.....Genetic expression	.....Electronic noses
.....Genetic programming	.....pH measurement
.....Genomics	.....Chemical compounds
.....Genotypes	.....Anti-freeze
.....Optogenetics	.....Bromine compounds
.....Phenotypes	.....Chalcogenides
.....Homeostasis	.....Chlorophyll
.....Mechanobiology	.....Ethanol
.....Microbiology	.....Methanol
.....Electroporation	.....Radiotracer
.....Virology	.....Computational chemistry
.....Virulence	.....Electrochemistry
.....Microinjection	.....Electrocatalysis
.....Nanobioscience	.....Geochemistry
.....DNA computing	.....Inorganic chemicals
.....Nanobiotechnology	.....Interstellar chemistry
.....Phenology	.....Organic chemicals
.....Physiology	.....Hydrocarbons
.....Action potentials	.....Photochemistry
.....External stimuli	.....Photobleaching



.....Photocatalysis	.....Geoengineering
.....Photosynthesis	.....Solar geoengineering
.....Physical chemistry	.....Geography
.....Quantum chemistry	.....Cartography
....Electricity	.....Deserts
.....Photoelectricity	.....Rural areas
.....Photovoltaic effects	.....Urban areas
.....Piezoelectricity	.....Geology
.....Piezoelectric effect	.....Biogeochemistry
.....Piezoelectric polarization	.....Continental crust
.....Pyroelectricity	.....Erosion
.....Thermoelectricity	.....Geological processes
.....Electrothermal effects	.....Landslides
.....Peltier effect	.....Minerals
.....Thermoelectric devices	.....Oceanic crust
.....Thermoelectric materials	.....Rocks
.....Triboelectricity	.....Stratigraphy
....Environmental science	.....Tectonics
....Epidemiology	.....Geophysics
.....Epidemics	.....EMTDC
.....Pandemics	.....Extraterrestrial phenomena
....Geoscience	.....Geodynamics
.....Antarctica	.....Geophysics computing
.....South Pole	.....Meteorology
.....Arctic	.....Moisture
.....North Pole	.....Seismology
.....Atmosphere	.....Surface waves
.....Air quality	.....Well logging
.....Atmospheric modeling	.....Glaciology
.....Atmospheric waves	.....Glaciers
.....Biosphere	.....Hydrography
.....Continents	.....Ice
.....Africa	.....Glaciers
.....Asia	.....Ice cap
.....Australia	.....Ice clouds
.....Europe	.....Ice shelf
.....North America	.....Ice surface
.....South America	.....Ice thickness
.....Cyclones	.....Icebergs
.....Hurricanes	.....Sea ice
.....Tropical cyclones	.....Lakes
.....Earth	.....Land surface
.....Earthquakes	.....Watersheds
.....Earthquake engineering	.....Levee
.....Equator	.....Meteorological factors
.....Estuaries	.....Natural resources
.....Forestry	.....Oceanography
.....Deforestation	.....Ocean circulation
.....Forests	.....Ocean dynamics
.....Reforestation	.....Oceans
.....Geochemistry	.....Antarctic Ocean



.....Arctic Ocean	.....Acoustic pulses
.....Atlantic Ocean	.....Acoustic waves
.....Indian Ocean	.....Acoustooptic effects
.....Ocean acidification	.....Biomedical acoustics
.....Ocean salinity	.....Cepstral analysis
.....Ocean temperature	.....Nonlinear acoustics
.....Pacific Ocean	.....Psychoacoustics
.....Sea coast	.....Reverberation
.....Sea floor	.....Spectral shape
.....Sea level	.....Underwater acoustics
.....Sea surface	.....Astrophysics
.....Tides	.....Astero-seismology
.....Rivers	.....Dark matter
.....Sediments	.....Orbits
.....Soil	.....Stellar dynamics
.....Peat	.....Beams
.....Permafrost	.....Acoustic beams
.....Soil moisture	.....Laser beams
.....Soil properties	.....Molecular beams
.....Soil remediation	.....Optical beams
.....Soil texture	.....Particle beams
.....Tornadoes	.....Biophysics
.....Tsunami	.....Aerospace biophysics
.....Volcanoes	.....Biomagnetics
.....Lava	.....Cellular biophysics
.....Volcanic activity	.....Molecular biophysics
.....Volcanic ash	.....Dark energy
.....Wetlands	.....Entropy
.....Life sciences	.....Fluid flow
.....Metrology	.....Fluid dynamics
.....Optical metrology	.....Hydraulic diameter
.....Neuroscience	.....Hydrology
.....Clinical neuroscience	.....Pipelines
.....Cognitive neuroscience	.....Supersonic flow
.....Computational neuroscience	.....Valves
.....Neuroinformatics	.....Geophysics
.....Neuromarketing	.....EMTDC
.....Neuroprostheses	.....Extraterrestrial phenomena
.....Systems neuroscience	.....Geodynamics
.....Transcranial direct current stimulation	.....Geophysics computing
.....Transcranial magnetic stimulation	.....Meteorology
.....Paleontology	.....Moisture
.....Physics	.....Seismology
.....Acoustics	.....Surface waves
.....Acoustic applications	.....Well logging
.....Acoustic devices	.....High energy physics
.....Acoustic emission	.....Kinetic theory
.....Acoustic field	.....Kinetic energy
.....Acoustic noise	.....Levitation
.....Acoustic phonetics	.....Electrostatic levitation
.....Acoustic propagation	.....Magnetic levitation



- .....Lorentz covariance
- .....Mechanical factors
  - .....Aerodynamics
  - .....Bending
  - .....Biomechanics
  - .....Damping
  - .....Deformation
  - .....Dynamics
  - .....Fatigue
  - .....Force
  - .....Friction
  - .....Hydrodynamics
  - .....Kinematics
  - .....Lubrication
  - .....Magnetohydrodynamics
  - .....Photoelasticity
  - .....Pressure effects
  - .....Shock (mechanics)
  - .....Strain
  - .....Stress
  - .....Surface cracks
  - .....Surface stress
  - .....Torque
  - .....Vibrations
  - .....Volume relaxation
  - .....Workability
- .....Network theory (graphs)
- .....Physics education
- .....Quantum mechanics
  - .....Coherence time
  - .....Density functional theory
  - .....Proton effects
  - .....Quantum capacitance
  - .....Quantum cryptography
  - .....Quantum decoherence
  - .....Quantum entanglement
  - .....Quantum information science
  - .....Quantum key distribution
  - .....Quantum materials
  - .....Quantum optics
  - .....Quantum sensing
  - .....Quantum sensors
  - .....Quantum simulation
  - .....Quantum state
  - .....Quantum system
  - .....Relativistic quantum mechanics
  - .....Schrodinger equation
  - .....Stationary state
  - .....Teleportation
  - .....Tunneling
  - .....Rydberg atoms
- .....Solid-state physics
- .....String theory
- .....Thermal factors
  - .....Temperature
  - .....Temperature dependence
  - .....Thermal conductivity
  - .....Thermal expansion
  - .....Thermal management
  - .....Thermal stresses
  - .....Thermoelasticity
  - .....Thermoelectricity
  - .....Thermolysis
  - .....Thermooptic effects
  - .....Thermoresistivity
- .....Waves
  - .....Atmospheric waves
  - .....Berry phase
  - .....Doppler effect
  - .....Electrodynamics
  - .....Magnetostatic waves
  - .....Matter waves
  - .....Plasma waves
  - .....Propagation
  - .....Reflectivity
  - .....Seismic waves
  - .....Shock waves
  - .....Solitons
  - .....Surface acoustic waves
  - .....Wave functions
- ...Social sciences
  - .....Anthropology
    - .....Ethnicity
  - .....Behavioral sciences
    - .....Animal behavior
    - .....Cognition
    - .....Consumer behavior
    - .....Psychiatry
    - .....Psychology
    - .....Social intelligence
    - .....User preference
  - .....Psychology
    - .....Active perception
    - .....Emotional responses
    - .....Industrial psychology
    - .....Mental health
    - .....Mood
    - .....Neuropsychology
    - .....Psychometric testing
    - .....Psychophysics
  - .....Sociology
    - .....Digital divide



- .....Social groups
- .....Social intelligence
- ....Thermodynamics
- .....Adiabatic processes
- .....Enthalpy
- .....Fermi level
- .....Isobaric processes
- .....Isothermal processes
- .....Quasi-Fermi level

**Sensors**

- ....Acoustic sensors
- ....Chemical and biological sensors
  - .....Biosensors
  - .....Gas detectors
    - .....Amperometric sensors
- ....Electromechanical sensors
- .....Microsensors
- ....Force sensors
- ....Glucose sensors
- ....Inertial sensors
- ....Infrared sensors
- ....Integrated sensing and communication
- ....Intelligent sensors
- ....Intracranial pressure sensors
- ....Ionizing radiation sensors
  - .....Position sensitive particle detectors
  - .....Radiation detectors
    - .....Bolometers
    - .....Gamma-ray detectors
    - .....Infrared detectors
    - .....Photodetectors
    - .....Semiconductor radiation detectors
    - .....Silicon radiation detectors
  - .....X-ray detectors
- ....Magnetic sensors
- .....Spin valves
- ....Mechanical sensors
- .....Capacitive sensors
- ....Multimodal sensors
- ....Nanosensors
- ....Optical sensors
  - .....Optical detectors
    - .....Bar codes
    - .....Optical fiber sensors
- ....Optoelectronic and photonic sensors
- ....Pressure sensors
- ....Quantum sensing
- ....Quantum sensors
- ....Sensor phenomena and characterization

- ....Sensor placement
- ....Sensor systems and applications
  - .....Detectors
    - .....Envelope detectors
    - .....Semiconductor detectors
  - .....Electric sensing devices
  - .....Leak detection
  - .....Radiofrequency identification
    - .....RFID tags
  - .....Robot sensing systems
    - .....Propioception
    - .....Robot vision systems
    - .....Simultaneous localization and mapping
      - .....Stereognosis
      - .....Tactile sensors
  - .....Sensor arrays
    - .....Sensor fusion
    - .....Sensor systems
      - .....Activity recognition
      - .....Gunshot detection systems
- ....Soft sensors
- ....Thermal sensors
  - .....Electrothermal actuators
  - .....Temperature sensors
    - .....Thermocouples
    - .....Thermometers
- ....Thick film sensors
- ....Thin film sensors
- ....Vision sensors
- ....Wearable sensors

**Signal processing**

- ....Acoustic signal processing
  - .....Active noise reduction
    - .....Echo cancellers
  - .....Speech processing
    - .....Human voice
    - .....Speech enhancement
    - .....Speech synthesis
    - .....Voice activity detection
- ....Adaptive signal processing
  - .....Adaptive filters
    - .....Adaptive signal detection
- ....Amplifiers
  - .....Broadband amplifiers
  - .....Differential amplifiers
  - .....Distributed amplifiers
  - .....Low-noise amplifiers
  - .....Operational amplifiers



- .....Feedback amplifiers
- .....Power amplifiers
- .....High power amplifiers
- .....Predistortion
- .....Preamplifiers
- .....Pulse amplifiers
- .....Radiofrequency amplifiers
- .....Resonators
- .....Cavity resonators
- .....Split ring resonators
- ....Array signal processing
- ....Attenuators
- .....Optical attenuators
- ....Chirp
- ....Convolution
- .....Convolvers
- ....Cyclostationary process
- ....Decorrelation
- ....Digital signal processing
- .....Delta modulation
- .....Delta-sigma modulation
- .....Sigma-delta modulation
- .....Digital signal processing chips
- ....Dispersion
- .....Chromatic dispersion
- .....Optical fiber dispersion
- ....Distortion
- .....Acoustic distortion
- .....Four-wave mixing
- .....Jitter
- .....Timing jitter
- .....Nonlinear distortion
- .....Harmonic distortion
- .....Intermodulation distortion
- .....Phase distortion
- ....Error correction
- .....Forward error correction
- ....Fading channels
- .....Frequency-selective fading channels
- .....Rayleigh channels
- .....Weibull fading channels
- ....Filters
- .....Active filters
- .....Band-pass filters
- .....Anisotropic
- .....Bragg gratings
- .....Fiber gratings
- .....Channel bank filters
- .....Comb filters
- .....Digital filters
- .....Finite impulse response filters
- .....Equalizers
- .....Adaptive equalizers
- .....Blind equalizers
- .....Decision feedback equalizers
- .....Filtering theory
- .....Collaborative filtering
- .....Image filtering
- .....Gabor filters
- .....Harmonic filters
- .....IIR filters
- .....Kalman filters
- .....Low-pass filters
- .....Matched filters
- .....Microstrip filters
- .....Nonlinear filters
- .....Notch filters
- .....Particle filters
- .....Power filters
- .....Spurline
- .....Resonator filters
- .....Spatial filters
- .....Superconducting filters
- .....Transversal filters
- ....Frequency locked loops
- ....Geophysical signal processing
- ....Limiting
- ....Local field potentials
- ....Modulation
- .....Amplitude modulation
- .....Amplitude shift keying
- .....Quadrature amplitude modulation
- .....Chirp modulation
- .....Demodulation
- .....Digital modulation
- .....Constellation diagram
- .....Partial response signaling
- .....Frequency modulation
- .....Frequency shift keying
- .....Magnetic modulators
- .....Modulation coding
- .....Interleaved codes
- .....Optical modulation
- .....Cross-phase modulation
- .....Intensity modulation
- .....Optical modulators
- .....Electro-absorption modulators
- .....Electro-optic modulators
- .....Phase modulation
- .....Continuous phase modulation
- .....Cross-phase modulation
- .....Differential phase shift keying



- .....Phase shift keying
- .....Pulse modulation
- .....Pulse width modulation
- .....Pulse width modulation inverters
- .....Space vector pulse width modulation
- ....Multidimensional signal processing
- .....Video signal processing
- .....Motion artifacts
- .....Text detection
- .....Video coding
- .....Video compression
- ....Noise
- .....1/f noise
- .....Additive noise
- .....Additive white noise
- .....AWGN
- .....Colored noise
- .....Gaussian noise
- .....AWGN
- .....Laser noise
- .....Laser feedback
- .....Low frequency noise
- .....Noise cancellation
- .....Phase noise
- .....Signal to noise ratio
- .....PSNR
- .....Superconducting device noise
- .....White noise
- .....AWGN
- ....Optical signal processing
- .....Laser noise
- .....Laser feedback
- ....Optical wavelength conversion
- ....Phase locked loops
- ....Pulse compression methods
- .....Optical pulse compression
- ....Pulse shaping methods
- .....Optical pulse shaping
- ....Quantization (signal)
- .....Vector quantization
- ....Radar signal processing
- ....Received signal strength indicator
- ....Recording
- .....Audio recording
- .....Digital recording
- .....Disk recording
- .....Flight recording
- .....Magnetic recording
- .....Digital magnetic recording
- .....Heat-assisted magnetic recording
- .....Magnetic noise
- .....Magneto optic recording
- .....Microwave-assisted magnetic recording
- .....Perpendicular magnetic recording
- .....Shingled magnetic recording
- .....Optical recording
- .....CD recording
- .....Video recording
- .....High definition video
- .....Videos
- .....Webcams
- ....RF signals
- ....Signal analysis
- .....Discrete-event systems
- .....Harmonic analysis
- .....Parameter estimation
- .....Amplitude estimation
- .....Direction-of-arrival estimation
- .....Frequency estimation
- .....Motion estimation
- .....Phase estimation
- .....Time of arrival estimation
- .....Signal mapping
- .....Sound recognition
- .....Spectral analysis
- .....Infrared spectra
- .....Judd-Ofelt theory
- .....Spectroradiometers
- ....Signal design
- ....Signal detection
- .....Acoustic signal detection
- .....Sonar detection
- .....Motion detection
- .....Odometry
- .....Multiuser detection
- .....Optical signal detection
- .....Phase detection
- .....Phase frequency detectors
- .....Radar detection
- ....Signal generators
- .....Noise generators
- .....Pulse generation
- .....Optical pulse generation
- ....Signal integrity
- ....Signal reconstruction
- .....Signal denoising
- ....Signal resolution
- .....Diversity reception
- ....Signal restoration
- ....Signal sampling



- ....Signal synthesis
- ....Source separation
- .....Blind source separation
- ....Spectrogram
- ....Tracking loops

**Social implications of technology**

- ....Cultural aspects
  - .....Cultural competence
  - .....Cultural differences
  - ....Cultural differences
  - ....Environmental factors
    - .....Biosphere
    - .....Climate change
      - .....Global warming
    - .....Ecology
      - .....Habitats
      - .....Ecosystems
        - .....Aquatic ecosystems
        - .....Estuaries
        - .....Grasslands
        - .....Rainforests
        - .....Tundra
        - .....Wetlands
      - .....Environmental degradation
        - .....Deforestation
        - .....Habitat loss
      - .....Environmental economics
        - .....Carbon tax
        - .....Emissions trading
        - .....Environmental measurement
          - .....Enhanced vegetation index
          - .....Normalized difference vegetation index
          - .....Normalized difference water index
      - .....Environmental monitoring
      - .....Global warming
        - .....Global warming potential
      - .....Green manufacturing
      - .....Green products
        - .....Green buildings
        - .....Green cleaning
        - .....Green electronics
      - .....Green transportation
      - .....Habitat loss
      - .....Life cycle assessment
      - .....Pollution
        - .....Acidification
        - .....Agricultural pollution
        - .....Air pollution

- .....Emissions trading
- .....Industrial pollution
- .....Land pollution
- .....Oil pollution
- .....Radioactive pollution
- .....Thermal pollution
- .....Urban pollution
- .....Water pollution
- ....Ethical aspects
  - ....Ethics
    - .....Cyberethics
    - .....Machine ethics
  - ....Globalization
  - ....International relations
  - ....Peace technology
  - ....Philosophical considerations
  - ....Social factors
    - .....Demography
      - .....Population density
      - .....Developing countries
      - .....Livelihood
      - .....Socioeconomics
    - .....Technology social factors
      - .....Privacy
  - ....Sustainable development
    - ....Technology
      - .....Appropriate technology
      - .....Disruptive technologies
      - .....Fintech
      - .....Machine ethics
      - .....Neurotechnology
      - .....Technological innovation
      - .....Technology social factors
        - .....Privacy
      - .....Technology transfer
        - .....Small business technology transfer
    - .....Telepresence
    - .....Telexistence

**Solid state circuits**

- ....Circuit subsystems
- ....Circuit theory
  - .....Inductive coupling
- ....FET circuits
  - .....FET integrated circuits
    - .....Field effect MMIC
    - .....MESFET integrated circuits
  - .....JFET circuits
    - .....JFET integrated circuits
    - .....MESFET circuits



- .....MESFET integrated circuits
- .....MODFET circuits
- .....MOSFET circuits
- .....CMOSFET circuits
- .....MOS integrated circuits
- .....Power MOSFET
- ....Gate leakage
- ....Solid state circuit design
- ....Transistors
- .....Field effect transistors
- .....CNTFETs
- .....Double-gate FETs
- .....FeFETs
- .....HEMTs
- .....JFETs
- .....MESFETs
- .....MISFETs
- .....MODFETs
- .....MOSFET
- .....MOSHFETs
- .....OFETs
- .....Schottky gate field effect transistors
- .....TFETs
- .....Thin film transistors
- .....Heterojunction bipolar transistors
- .....Double heterojunction bipolar transistors
- .....Millimeter wave transistors
- .....Phototransistors
- .....Static induction transistors

### Superconductivity

- ....Bean model
- ....Critical current density
- ....Flux pinning
- ....Superconducting devices
- .....Josephson junctions
- .....SQUIDs
- .....Superconducting coils
- .....Superconducting magnets
- .....Superconducting microwave devices
- .....Superconducting photodetectors
- ....Superconducting films
- .....Superconducting thin films
- ....Superconducting integrated circuits
- ....Superconducting magnetic energy storage
- ....Superconducting materials
- .....Granular superconductors
- .....High-temperature superconductors

- .....Yttrium barium copper oxide
- .....Multifilamentary superconductors
- .....Niobium-tin
- .....Superconducting filaments
- .....Superconducting wires
- .....Multifilamentary superconductors
- .....Type II superconductors
- ....Superconducting transition temperature
- ....Superconductive tunneling

### Systems engineering and theory

- ....Adaptive systems
- .....Adaptive control
- .....Cognitive radar
- .....Line enhancers
- .....Multi-agent systems
- .....Collaborative intelligence
- .....Variable structure systems
- ....Capability engineering
- ....Complex systems
- ....Configuration management
- ....Failure state
- ....Hierarchical systems
- .....Multilevel systems
- ....Integrated design
- ....Interface management
- ....Military systems
- .....Military control
- .....Military robotics
- ....Modeling
- .....Analytical models
- .....Common Information Model (computing)
- .....Atmospheric modeling
- .....Brain modeling
- .....Building information management
- .....Computational modeling
- .....Agent-based modeling
- .....Computational cultural modeling
- .....Computational materials science
- .....Reversible computing
- .....Context modeling
- .....Data models
- .....Data-driven modeling
- .....High dimensional data
- .....Metadata
- .....NSL-KDD
- .....Data-driven modeling
- .....Deformable models
- .....Digital elevation models



- .....Emulation
- .....Evaluation models
- .....Foundation models
- .....Graphical models
- .....Green's function methods
- .....Hidden Markov models
- .....Input variables
- .....Integrated circuit modeling
  - .....Cutoff frequency
- .....Inverse problems
  - .....Deconvolution
- .....Load modeling
- .....Mathematical models
  - .....Geometric modeling
  - .....Mathematical analysis
  - .....Optimization models
  - .....Overfitting
- .....Metamodeling
- .....Mobility models
- .....Numerical models
- .....Object oriented modeling
- .....Power system modeling
  - .....Load modeling
- .....Process modeling
- .....Semiconductor device modeling
- .....Semiconductor process modeling
- .....Signal representation
- .....Simulation
  - .....Computer simulation
  - .....Digital simulation
  - .....Hardware-in-the-loop simulation
  - .....Human in the loop
  - .....Medical simulation
  - .....Mixed reality
  - .....Quantum simulation
  - .....Serious games
  - .....Systems simulation
- .....Solid modeling
- .....Space mapping
- .....System identification
- .....Systems modeling
  - .....Threat modeling
- ....Multidimensional systems
- ....Network systems
  - .....Autonomous networks
  - .....DC distribution systems
- ....Physical design
- ....Reduced order systems
- ....Requirements engineering
- .....Technical requirements
- ....Requirements management
- ....Service-oriented systems engineering
- ....Solution design
- ....Stochastic systems
- ....System analysis and design
  - .....Asymptotic stability
  - .....Closed box
  - .....Control system analysis
    - .....State-space methods
  - .....Diakoptics
  - .....Distributed processing
    - .....Dew computing
    - .....Edge computing
    - .....Message passing
    - .....Sharding
  - .....Distributed vision networks
  - .....Fault detection
  - .....Fault tolerant systems
  - .....Glass box
  - .....Interconnected systems
    - .....Botnet
  - .....Large-scale systems
  - .....Lyapunov methods
  - .....Open systems
    - .....Open Access
    - .....Open Educational Resources
  - .....Physical layer
    - .....Petri nets
  - .....Physical design
  - .....Robust control
  - .....Scalability
  - .....Scattering parameters
  - .....Sequential analysis
    - .....Zero correlation zone
  - .....Sequential diagnosis
  - .....Software prototyping
  - .....Static analysis
  - .....System dynamics
  - .....System performance
    - .....Cooperative caching
  - .....System-level design
  - .....Systems modeling
    - .....Threat modeling
  - .....Systems Modeling Language
  - .....Task analysis
  - .....Time factors
    - .....Continuous time systems
    - .....Discrete-time systems
    - .....Time invariant systems
    - .....Time-varying systems
- ....System implementation
- ....System improvement



- ....System integration
- ....System of systems
- .....Cyber-physical systems
- .....Digital twins
- ....System realization
- ....System validation
- .....System testing
- .....Model checking
- ....System verification
- .....System testing
- .....Model checking
- ....Systems architecture
- .....Deep architecture
- .....Deep learning
- ....Systems engineering education
- ....Systems operation
- ....Systems simulation
- ....Systems support
- .....Smart systems
- ....Systems thinking
- ....Task analysis
- ....Technical management
- .....Maintenance management
- .....Technical planning

**Systems, man, and cybernetics**

- ....Behavioral sciences
- .....Animal behavior
- .....Cognition
- .....Activity recognition
- .....Cognitive load
- .....Cognitive neuroscience
- .....Cognitive processes
- .....Commonsense reasoning
- .....Metacognition
- .....Self-aware
- .....Consumer behavior
- .....Neuromarketing
- .....Self-service
- .....Psychiatry
- .....Mental disorders
- .....Psychology
- .....Active perception
- .....Emotional responses
- .....Industrial psychology
- .....Mental health
- .....Mood
- .....Neuropsychology
- .....Psychometric testing
- .....Psychophysics

- .....Social intelligence
- .....User preference
- ...Biological control systems
- .....Biomarkers
- .....Molecular biomarkers
- ...Computational linguistics
- .....Machine translation
- .....Neural machine translation
- .....Sentiment analysis
- ...Cybernetics
- .....Adaptive systems
- .....Adaptive control
- .....Cognitive radar
- .....Line enhancers
- .....Multi-agent systems
- .....Variable structure systems
- .....Cognitive informatics
- .....Cognitive science
- .....Human intelligence
- .....Problem-solving
- .....Computational cybernetics
- .....Control theory
- .....Control nonlinearities
- .....Iterative learning control
- .....Observability
- .....Econophysics
- .....Emergent phenomena
- .....Intelligent control
- .....Feedforward systems
- .....Neurocontrollers
- .....Linear feedback control systems
- .....Frequency locked loops
- .....Phase locked loops
- .....State feedback
- .....Tracking loops
- ...Ergonomics
- .....Job design
- .....Smart spaces
- .....User experience
- .....Cyberbullying
- ...Human factors
- .....Anthropomorphism
- .....Human augmentation
- .....Human image synthesis
- .....Human intelligence
- .....Digital intelligence
- .....Hyper-intelligence
- .....Livelihood
- .....Mental health
- .....Pedestrians
- .....Technology acceptance model



- ....Human-machine systems
  - .....Digital intelligence
  - .....Extended reality
  - .....Interactive systems
    - .....External stimuli
  - ....Identification of persons
    - .....Biometric identification
      - .....Biometrics
        - .....Biometric authentication
        - .....Biometric identification
          - .....Face recognition
          - .....Fingerprint recognition
          - .....Gait recognition
          - .....Iris recognition
          - .....Keystroke dynamics
          - .....Palmprint recognition
        - .....Face recognition
          - .....Fingerprint recognition
          - .....Handwriting recognition
            - .....Forgery
        - .....Identity theft
        - .....Speaker recognition
        - .....Speech recognition
          - .....Automatic speech recognition
            - .....Personal voice assistants
          - .....Speech analysis
          - .....Speech to text
    - ....Pervasive computing
      - .....Ubiquitous computing
        - .....Context-aware services
      - .....Wearable devices
        - .....Smart glasses
        - .....Wearable antennas
        - .....Wearable Health Monitoring
  - Systems
    - ....Posthuman
    - ....Remote working
    - ....Transhuman
    - ....User interfaces
      - .....Audio user interfaces
      - .....Brain-computer interfaces
      - .....Data visualization
        - .....Graph drawing
        - .....Heat maps
        - .....Isosurfaces
      - .....Emotion recognition
      - .....Exoskeletons
      - .....Graphical user interfaces
        - .....Avatars
      - .....Human computer interaction
        - .....Affective computing

- .....Chatbots
- .....Extended reality
  - .....Gaze tracking
  - .....Head-mounted displays
  - .....Head-up displays
  - .....Human in the loop
  - .....Immersive experience
    - .....Spatial computing
  - .....Telepresence
  - .....Telexistence
  - .....Human vehicle systems
  - .....Human-robot interaction
    - .....Social robots
  - .....Intent recognition
  - .....Smart cards

**Ultrasonics, ferroelectrics, and frequency control**

- ....Ferroelectric materials
  - .....Ferroelectric films
  - .....Lead zirconate titanate
  - .....Relaxor ferroelectrics
- ....Frequency control
  - .....Automatic frequency control
  - .....Tunable circuits and devices
    - .....RLC circuits
    - .....Tuned circuits
  - .....Tuning
    - .....Laser tuning
    - .....Optical tuning
  - .....Tuners
- ....Piezoelectricity
  - .....Piezoelectric effect
  - .....Piezoelectric polarization
  - .....Pyroelectricity
  - ....Ultrasonic imaging
    - .....Ultrasonography
      - .....Sonogram
  - ....Ultrasonic transducers

**Vehicular and wireless technologies**

- ....Automotive engineering
  - .....Automotive applications
  - .....Automotive control
  - .....Automotive electronics
  - .....Power steering
  - .....Vehicle crash testing
  - .....Vehicle detection
  - .....License plate recognition



- .....Vehicle driving
- .....Autonomous driving
- .....Driver behavior
- .....Vehicle dynamics
- .....Rollover
- .....Vehicle safety
- .....Advanced driver assistance systems
- .....Lane departure warning systems
- .....Lane detection
- ...Land mobile radio equipment
- .....Mobile antennas
- ...Navigation
- .....Aircraft navigation
- .....Course correction
- .....Dead reckoning
- .....Indoor navigation
- .....Inertial navigation
- .....Marine navigation
- .....Radio navigation
- .....Satellite navigation systems
- .....Global navigation satellite system
- .....Global Positioning System
- .....Satellite constellations
- .....Sonar navigation
- .....Underwater navigation
- ...Propulsion
- .....Aerospace propulsion
- .....Aircraft propulsion
- .....Propellers
- .....Electromagnetic launching
- .....Coilguns
- .....Railguns
- .....Electrothermal launching
- .....Rockets
- ...Vehicles
- .....Connected vehicles
- .....Hydrogen powered vehicles
- .....Hypersonic vehicles
- .....Intelligent vehicles
- .....Autonomous vehicles
- .....Vehicle-to-everything
- .....Internet of Vehicles
- .....Land vehicles
- .....Bicycles
- .....Electric vehicles
- .....Road vehicles
- .....Military vehicles
- .....Remotely guided vehicles
- .....Drones
- .....Remotely guided underwater vehicles
- .....Remotely piloted aircraft
- .....Space vehicles
- .....Space shuttles
- ...Wireless sensor networks
- .....Body sensor networks
- .....Event detection

