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 2019 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
........Guns

........Missiles
........Nuclear weapons
........Projectiles
....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
..........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
....Sensor systems
........Activity recognition
........Gunshot detection systems
....Sonar
.........Sonar applications
Sonar detection
Sonar measurements
Sonar equipment
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
- 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
- Microstrip antennas
- Microwave antennas
- Mobile antennas
- Multifrequency antennas
- Omnidirectional antennas
- Patch antennas
- Radar antennas
- Receiving antennas
- Rectennas
- Reflector antennas
- Satellite antennas
- Slot antennas
- Transmission line antennas
- Transmitting antennas
- UHF 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
- 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
- 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
...Coupled mode analysis
...Nonlinear network analysis
...Circuit faults
...Electrical fault detection
...Circuit noise
...Thermal noise
...Circuit simulation
...Circuit synthesis
...High level synthesis
...Integrated circuit synthesis
...Coprocessors
...Counting circuits
...Coupling circuits
...Digital circuits
...Circuit topology
...Digital integrated circuits
...Digital signal processors
...Distributed parameter circuits
...Driver circuits
...Electronic circuits
...Breadboard
...Central Processing Unit
...Multivibrators
...Stripboard circuit
...Equivalent circuits
...Feedback
...Feedback circuits
...Negative feedback
...Neurofeedback
...Hybrid integrated circuits
...Integrated circuits
...Analog integrated circuits
...Analog-digital integrated circuits
...Application specific integrated circuits
...CMOS integrated circuits
...Coprocessors
...Current-mode circuits
...Digital integrated circuits
...FET integrated circuits
...Field programmable gate arrays
...Hybrid integrated circuits
...Integrated circuit interconnections
...Integrated circuit modeling
...Integrated circuit noise
...Integrated circuit synthesis
...Large scale integration
...MESFET integrated circuits
...Microprocessors
...Microwave integrated circuits
...Millimeter wave integrated circuits
...Monolithic integrated circuits
...Photonic integrated circuits
...Power integrated circuits
...Radiofrequency integrated circuits
...Submillimeter wave integrated circuits
...Superconducting integrated circuits
...Thick film circuits
...Thin film circuits
...Three-dimensional integrated circuits
...Through-silicon vias
...UHF integrated circuits
...Ultra large scale integration
...Very high speed integrated circuits
...Very large scale integration
...Wafer scale integration
...Isolators
...Large scale integration
...Ultra large scale integration
...Very large scale integration
...Wafer scale integration
...Linear circuits
...Logic arrays
...Programmable logic arrays
...Logic circuits
...Combinational circuits
...Logic arrays
...Programmable logic arrays
...Superconducting logic circuits
...Magnetic circuits
...Microprocessors
...Automatic logic units
...Biomimetics
...Coprocessors
...Microcontrollers
...Microprocessor chips
...Vector processors
...Microprocessor circuits
...Millimeter wave circuits
Millimeter wave integrated circuits
MIMICs
Monolithic integrated circuits
MIMICs
MOS integrated circuits
Power MOSFET
Multiplying circuits
Nonlinear circuits
Nonlinear network analysis
Passive circuits
Phase shifters
Phase transformers
Power dissipation
Power integrated circuits
Printed circuits
Flexible printed circuits
Memory modules
Programmable circuits
Field programmable analog arrays
Programmable logic arrays
Programmable logic devices
Programmable logic devices
Pulse circuits
Flip-flops
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
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
Wafer scale integration
VHF circuits
Voltage multipliers
Capacitors
Diodes
Wafer scale integration
Contacts
Brushes
Contact resistance
Ohmic contacts
Filtering
Filters
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Anisotropic
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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
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
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
ARPANET
Biomedical communication
Biomedical telemetry
Telemedicine
Broadband communication
B-ISDN
Broadband amplifiers
Communication networks
Central office
Cyberspace
Industrial communication
Radio access technologies
Relay networks
(telecommunications)
Communication system control
Telecommunication control
Communication system security
Denial-of-service attack
Radio communication countermeasures
Communication system signaling
Received signal strength indicator
Communication system software
Streaming media
| Communication system traffic                  | DSL                      |
| Communication system traffic control         | ISDN                     |
| Computer networks                           | Passband                 |
| Ad hoc networks                             | Portable media players   |
| Computer network management                 | SONET                    |
| Content distribution networks               | Spread spectrum communication |
| Cyberspace                                  | Facsimile                |
| Diffserv networks                           | FDDI                     |
| Domain Name System                          | Indoor communication     |
| Ethernet                                    | Indoor environment       |
| Google                                      | Internet                 |
| Heterogeneous networks                      | Bot (Internet)           |
| Internet                                    | Botnet                   |
| Intserv networks                            | Cloud computing          |
| IP networks                                 | Crowdsourcing            |
| Metropolitan area networks                 | Instant messaging        |
| Multiprocessor interconnection networks     | Internet of Things       |
| Network function virtualization             | Internet security        |
| Network security                            | Internet telephony       |
| Network servers                             | Linked data              |
| Next generation networking                  | Middleboxes              |
| Overlay networks                            | Semantic Web             |
| Peer-to-peer computing                      | Social computing         |
| Software defined networking                 | Web 2.0                  |
| Storage area networks                       | Web services             |
| Token networks                              | IP networks              |
| Unicast                                     | TCP/IP                   |
| Virtual private networks                    | ISDN                     |
| Wide area networks                          | B-ISDN                   |
| Wireless access points                      | Local area networks      |
| Cross layer design                          | Wireless LAN             |
| Data buses                                  | Low latency communication|
| Backplanes                                  | Machine-to-machine communications |
| Data communication                          | Magnetic communication   |
| Asynchronous communication                  | Metropolitan area networks|
| Asynchronous transfer mode                  | Microwave communication  |
| Data buses                                  | Rectennas                |
| Data transfer                               | Military communication   |
| Telecommunication buffers                   | Reconnaissance           |
| Telemetry                                   | MIMO communication       |
| Teleprinting                                | Rician channels          |
| Visible light communication                 | MISO communication       |
| Device-to-device communication              | Mobile communication     |
| Digital communication                       | 3G mobile communication  |
| Baseband                                    | 4G mobile communication  |
| DICOM                                       | 5G mobile communication  |
| Digital audio broadcasting                  | Ambient networks         |
| Digital images                              | Dual band                |
| Digital multimedia broadcasting             | Land mobile radio        |
| Digital video broadcasting                  | Location awareness       |
Mobile learning
Mobile nodes
Mobile security
Software radio
Ultra-dense networks
Molecular communication
Multiaccess communication
Direct-sequence code-division multiple access
Frequency division multiaccess
Multicarrier code division multiple access
Subscriber loops
Time division multiple access
Time division synchronous code division multiple access
Zero correlation zone
Multicast communication
Multicast VPN
Multimedia communication
Nanocommunication (telecommunication)
Narrowband
NOMA
Optical fiber communication
FDDI
Free-space optical communication
Optical buffering
Optical fiber networks
Optical fiber subscriber loops
Optical interconnections
Optical packet switching
Optical wavelength conversion
Scheduling algorithms
SONET
Visible light communication
Personal communication networks
Protocols
Access protocols
Asynchronous transfer mode
Cryptographic protocols
Master-slave
Multicast protocols
Multiprotocol label switching
Proof of work
Routing protocols
Smart contracts
Transport protocols
Wireless application protocol
Zero knowledge proof
Quality of experience
Quality of service
Admission control
Quantum communication
Radio communication
Baseband
Bluetooth
Indoor radio communication
Land mobile radio
Millimeter wave communication
Near field communication
Packet radio networks
Passband
Personal area networks
Radio broadcasting
Radio communication
countermeasures
Radio frequency
Radio link
Radio spectrum management
Satellite communication
Satellite ground stations
Software radio
ZigBee
Regional area networks
WRAN
Routing
Wavelength routing
Satellite communication
Downlink
Satellite broadcasting
Satellite ground stations
Uplink
Satellite ground stations
SISO communication
SISO communication
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
Telecommunications
Teleconferencing
Telegraphy
Telephony
Teleprinting
Teletext
Token networks
UHF communication
Underwater communication
Vehicle-to-everything
Vehicle-to-infrastructure
Videophone systems
Videotex
Visual communication
Wide area networks
Wideband
Wireless communication
Cognitive radio
Cooperative communication
Dedicated short range communication
GSM
Open wireless architecture
Point-to-multipoint communications
Roaming
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
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 electronic mail
Electronic messaging
Instant messaging
Unified messaging
Postal services
Publish subscribe systems
Voice mail
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
Electrooptic modulators
Intensity modulation
Phase modulation
Continuous 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
Multiplexing equipment
Add-drop multiplexers
OFDM
Multiple access interference
OFDM modulation
Partial transmit sequences
Peak to average power ratio
Time division multiplexing
Knowledge management
Knowledge transfer
Mathematics computing
Matlab
Medical information systems
Electronic medical records
Military computing
Mobile applications
Physics computing
Power engineering computing
Power system analysis computing
Publishing
Bibliometrics
Company reports
Desktop publishing
Electronic publishing
Open Access
Scientific publishing
Scientific computing
Telecommunication computing
Internetworking
Soft switching
Virtual enterprises
Virtual manufacturing
Virtual machining
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Computer architecture
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Firewire
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Mesh networks
Mobile ad hoc networks
Vehicular ad hoc networks
Computer network management
Computer network reliability
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Middleboxes
Network address translation
Network synthesis
Content distribution networks
Cyberspace
Diffserv networks
Internet of Things
Internet security
Internet telephony
Internet topology
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Grid computing
Peer-to-peer computing
DNA computing
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Active shape model
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Corner detection
Feature detection
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Image enhancement
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Image generation
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Cache storage
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Hard disks
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Nonvolatile single electron memory
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Phase change random access memory
Random access memory
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Phase change random access memory
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SDRAM
SRAM cells
SRAM chips
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Read-write memory
Registers
Shift registers
Scanning probe data storage
Semiconductor memory
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Physical layer security
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Activity recognition
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Gesture recognition
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Handwriting recognition
Forgery
Nearest neighbor methods
Pattern matching
Image matching
Speech recognition
Automatic speech recognition
Speech analysis
Text recognition
Pervasive computing
Ubiquitous computing
Context-aware services
Wearable computers
Smart glasses
Petascale computing
Platform virtualization

Proabilistic computing
Probability computing
Quantum computing
Quantum cellular automata
Qubit
Real-time systems
Telexistence
WebRTC
Software
Anti-virus software
Application software
Embedded software
Malware
Computer viruses
Computer worms
Ransomware
Rootkit
Trojan horses
Middleware
Mediation
Message-oriented middleware
Web services
Open source software
Optical character recognition software
Privacy-invasive software
Spyware
Public domain software
Python
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
Programming environments
Reasoning about programs
Release engineering
Runtime
Dynamic compiler
Runtime environment
Software architecture
Client-server systems
Dew computing
Microarchitecture
Representational state transfer
Software libraries
Software product lines
System recovery
Checkpointing
Core dumps
Debugging
Time sharing computer systems
Virtual machine monitors

Consumer electronics
Ambient intelligence
Audio systems
Audio tapes
Audio-visual systems
Auditory displays
Headphones
Loudspeakers
Microphones
Microphone arrays
Pitch control (audio)
Portable media players
Sonification
Home automation
Portable media players
Refrigerators
Smart homes
Washing machines
Home computing
Low-power electronics
Microwave ovens
Multimedia systems
Multimedia communication
Multimedia computing
Multimedia databases

Control systems
Automatic control
Power generation control
Automatic generation control
Bidirectional control
Block signalling
Brakes
CAMAC
Centralized control
Closed loop systems
Control design
Control engineering
Control system security
Control equipment
Actuators
Dielectric elastomer actuators
Electrostatic 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
Cruise control
Decentralized control
Distributed parameter systems
Delay systems
Added delay
Delay lines
Digital control
Programmable control
Flow graphs
Fault tolerant control
Feedback circuits
Feedback systems
......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
..........Gyrosopes
......Motion control
.........Collision avoidance
.........Collision mitigation
.........Kinetic theory
.........Motion planning
.........Path planning
.........Visual servoing
.........Pitch control (position)
.........Position control
..........Nanpositioning
......Shape control
......Size control
......Strain control
......Stress control
......Thickness control
......Torque control
......Velocity control
.........Angular velocity control
......Vibration control
......Weight control
......Medical control systems
......Moisture control
......Humidity control
......Motion compensation
......Networked control systems
......Nonlinear control systems
......Open loop systems
......Optical control
......Lighting control
..........Optical variables control
..........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
..........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
.........Queueing analysis
.........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
 ....Electric avalanche breakdown
 ......Corona
 ......Dielectric breakdown
 ..........Arc discharges
 ..........Discharges (electric)
 ..........Electrostatic discharges
 ..........Flashover
Glow discharges
Partial discharges
Surface discharges
Vacuum breakdown
Sparks
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
Education courses
Curriculum development
Open Educational Resources
Educational institutions
Educational programs
Accreditation
Continuing education
Pre-college engineering
Scholarships
Self-study courses
Seminars
Webinars
STEM
Tutorials
Educational technology
Computer aided instruction
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
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 fields
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
Terahertz metamaterials
Electromagnetic radiation
Bremsstrahlung
Correlators
Electromagnetic wave absorption
Frequency
Gamma-rays
Line-of-sight propagation
Electromagnetic shielding
Cable shielding
Magnetic shielding
Electromagnetic transients
EMP radiation effects
EMTDC
EMTP
Power system transients
Surges
Proximity effects
Interference
Clutter
Crosstalk
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

electron devices
Cathode ray tubes
Electron guns
Electron multipliers
Electron tubes
Field emitter arrays
Klystrons
Magnetrons
Thyratrons
Traveling wave tubes

electron devices
Biomechatronics
Microelectromechanical systems
Microelectromechanical devices
Microactuators
Micromotors
Micropumps
Microvalves
Radiofrequency
microelectromechanical systems

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.............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
.............Tunneling magnetoresistance
.............Vacuum technology
.............Photomultipliers
.............Vacuum electronics
.............Vacuum systems
.............Gettering

Electronic design automation and methodology
.............Design automation
.............CADCAM

.............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

.............Graphics
.............Animation
.............Art

.............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

.............Biologically inspired engineering

.............Bio-inspired computing

.............Chemical engineering
.............Civil engineering

.............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
...Mechanical engineering
....Mechanical power transmission
........Torque converters
.....Mechanical systems
........Mechanical energy
............Torque converters
............Suspensions (mechanical systems)
...Optical engineering
...Precision engineering
...Production engineering
........Production planning
............Capacity planning
............Materials requirements planning
........Process planning
...Research and development
...Reverse engineering
...Sanitary engineering
...Standardization
........Formal specifications
........Guidelines
.....Standards
........Standards categories
........Standards organizations
........Standards publications
...Thermal engineering

Engineering in medicine and biology
...Bioinformatics
....Neuroinformatics
...Biology
....Biochemistry
........Amino acids
............Biochemical analysis
............Peptides
............Proteins
............Receptor (biochemistry)
....Biodiversity
.........Biogeography
........Bioelectric phenomena
........Electric shock
....Biological cells
............Cell signaling
............Cells (biology)
............Chromosome mapping
............Fibroblasts
............RNA
............Stem cells
............Biological information theory
............Biological processes
............Biological interactions
............Chronobiology
............Circadian rhythm
............Coagulation
............Molecular biology
............Symbiosis
............Biological system modeling
............Biological systems
............Anatomy
............Molecular communication
............Organisms
............Biology computing
............Biophotonics
............Biophysics
............Aerospace biophysics
............Biomagnetics
............Cellular biophysics
............Molecular biophysics
............Cryobiology
............Evolution (biology)
............Memetics
............Phylogeny
............Genetics
............DNA
............Gene therapy
............Genetic communication
............Genetic expression
............Genetic programming
............Genomics
............Homeostasis
............Mechanobiology
............Microinjection
............Nanobioscience
............DNA computing
............Nanobiotechnology
............Physiology
............Action potentials
............External stimuli
............Neuromodulation
............Predator prey systems
............Synthetic biology
............Systematics
............Systems biology
Vegetation
Crops
Marine vegetation
Zoology
Animals
Biomedical communication
Biomedical telemetry
Telemedicine
Biomedical computing
Biomedical informatics
Medical expert systems
Medical information systems
Electronic medical records
Biomedical engineering
Bioimpedance
Biological techniques
Biomedical applications of radiation
Biomedical electronics
Biomedical signal processing
Biomedical image processing
Biotechnology
Cloning
Drug delivery
Targeted drug delivery
Neural engineering
Neural microtechnology
Neural nanotechnology
Neural prosthesis
Protein engineering
Tissue engineering
Regeneration engineering
Biomedical equipment
Assistive technology
Assistive devices
Wheelchairs
Biomedical electrodes
Biomedical telemetry
Biomedical transducers
Catheters
Cybercare
Endoscopes
Endomicroscopy
Gerontechnology
Hypodermic needles
Implants
Auditory implants
Brainstem implants
Cochlear implants
Microelectronic implants
Neural implants
Intracranial pressure sensors
Lithotriptors
Medical instruments
Pacemakers
Stethoscope
Surgical instruments
Laparoscopes
Biomedical imaging
Angiography
Biomedical optical imaging
Cardiography
Echocardiography
Electrocardiography
Phonocardiography
DICOM
Elastography
Encephalography
Mammography
Medical diagnostic imaging
Anatomical structure
Molecular imaging
Phantoms
Photoacoustic imaging
Bionanotechnology
Bioterrorism
Computational biology
Computational biochemistry
Computational biophysics
Computational systems biology
Genetic engineering
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
Medical conditions
Aneurysm
Atrophy
Autism
Blindness
Cataracts
Deafness
Diabetes
Diseases
Hemorrhaging
Hypertension
Hyperthermia
Injuries
Kidney stones
Obesity
Pregnancy
Sleep apnea
Stroke (medical condition)
Thrombosis
Tumors
Medical diagnosis
Autopsy
Bronchoscopy
Colonography
Computer aided diagnosis
Medical signal detection
Nanomedicine
Plethysmography
Sensitivity and specificity
Medical tests
Amniocentesis
Biopsy
Cancer detection
Colonoscopy
Pregnancy test
Medical treatment
Anesthesia
Angioplasty
Brachytherapy
Brain stimulation
Chemotherapy
Clinical trials
Cryotherapy
Defibrillation
Dentistry
Electrical stimulation
Electronic medical prescriptions
Embolization
Fibrillation
Geriatrics
Hepatectomy
Hospitals
Hyperthermia
Lithotripsy
Magnetic stimulation
Neuromuscular stimulation
Neutron capture therapy
Noninvasive treatment
Orthopedic procedures
Orthotics
Patient rehabilitation
Pharmaceuticals
Proton therapy
Surgery
Occupational medicine
Point of care
Prosthetics
Artificial biological organs
Artificial limbs
Prosthetic hand
Prosthetic limbs
Visual prosthesis
Public healthcare
Sensory aids
Hearing aids
Smart healthcare
Vaccines
X-rays
X-ray applications
X-ray detection
X-ray scattering
X-ray tomography
Medical specialties
Anesthesiology
Cardiology
Dermatology
Gastroenterology
Gerontology
Gerontotechnology
Gynecology
Neonatology
Neurology
Oncology
Pathology
Neuropathology
Pathological processes
Pediatrics
Nuclear medicine
Synthetic biology
Engineering management
Business
data processing
Business intelligence
Disruptive innovation
Entrepreneurship
Industrial relations
Management
Asset management
Best practices
............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
............Decision making
............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
............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
..........Government
..........Sociotechnical systems
.............United Kingdom Space Agency
.............Commercialization
............. Consortia
.............Economics
.............Costs
.............Cost benefit analysis
.............Econometrics
.............Economic forecasting
.............Economic indicators
.............Share prices
.............Electronic commerce
.............Environmental economics
.............Carbon tax
.............Exchange rates
.............Fuel economy
.............International trade
.............Macroeconomics
.............Privatization
.............Microeconomics
.............Economies of scale
.............Industrial economics
.............Monopoly
.............Oligopoly
.............Power generation economics
.............Electricity supply industry deregulation
.............Profitability
.............Sharing economy
.............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
.............Law enforcement
.............Patent law
.............Trademarks
.............Patents
2019 IEEE Taxonomy

Product liability
Warranties
Software protection
Trademarks
Market research
Planning
Meeting planning
Schedules
Strategic planning
Technical planning
Technology planning
Product development
Graphical user interfaces
Avatars
Product customization
Product life cycle management
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 software development
Scrum (Software development)
Model-driven development
Geoscience and remote sensing
Environmental factors
Biosphere
Ecology
Ecosystems
Wetlands
Environmental economics
Carbon tax
Environmental monitoring
Global warming
Green manufacturing
Green products
Green buildings
Green cleaning
Green transportation
Pollution
Air pollution
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
Forestry
Geochemistry
Geoengineering
Geography
Rural areas
Urban areas
Geology
Minerals
Rocks
Geophysics
EMTDC
Extraterrestrial phenomena
Geodynamics
Geophysics computing
Meteorology
Moisture
Seismology
Surface waves
Well logging
Ice
Ice shelf
Ice surface
Ice thickness
Sea ice
Lakes
Land surface
Levee
Meteorological factors
Oceanography
Ocean circulation
Oceans
Ocean salinity
Ocean temperature
Sea coast
Sea floor
Sea level
Sea surface
Tides
Rivers
Sediments
Soil
Soil moisture
Soil properties
Soil texture
Tornadoes
Tsunami
Volcanoes
Planetary volcanoes
Volcanic activity
Volcanic ash
Wetlands
Land surface temperature
Photometry
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
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
Radiometry
Microwave radiometry
Radiometers
Spectroradiometers
Remote sensing
Hyperspectral sensors
Hyperspectral imaging
Passive microwave remote sensing
Remote monitoring
Terrain mapping
Digital elevation models
Terrestrial atmosphere
Clouds
Global warming
Ionosphere
Magnetosphere
Vegetation mapping
IEEE organization
IEEE activities
IEEE Awards activities
IEEE Corporate awards
IEEE Society awards
IEEE Standards awards
IEEE Student awards
| National Society Agreement awards | IEEE Student Members |
| IEEE Conference activities | IEEE news |
| IEEE Corporate activities | IEEE Chapter news |
| Humanitarian activities | IEEE Region news |
| IEEE Educational activities | IEEE Section news |
| IEEE Intersociety activities | IEEE Society news |
| IEEE Local activities | IEEE products |
| IEEE Member and Geographic activities | IEEE audio tapes |
| IEEE Professional activities | IEEE catalogs |
| IEEE publishing | IEEE Collaboratec |
| IEEE Standards activities | IEEE educational products |
| IEEE Student activities | IEEE merchandise |
| IEEE Technical activities | IEEE publications |
| IEEE United States activities | IEEE books |
| IEEE Volunteer activities | IEEE conference proceedings |

**IEEE entities**

- IEEE Boards
- IEEE Center for the History of Electrical Engineering

**IEEE Governance**

- IEEE Chapters
- IEEE Committees
- IEEE Communities
- IEEE Computer Society Press
- IEEE Councils
- IEEE Foundation
- IEEE Press
- IEEE Regions
- IEEE Sections
- IEEE Societies

**IEEE Imaging**

- Medical imaging
- Angiography
- Biomedical optical imaging
- Cardiography
- Echocardiography
- Electrocardiography
- Phonocardiography
- DICOM
- Elastography
- Encephalography
- Mammography
- Medical diagnostic imaging
- Anatomical structure
- 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
Magneeto electrical resistivity imaging technique
Microscopy
Atomic force microscopy
Electron microscopy
Photoelectron microscopy
Scanning electron microscopy
Transmission electron microscopy
Endomicroscopy
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
Radiation imaging
Radiography
Diagnostic radiography
Stereo vision
Stereo image processing
Tomography
Computed tomography
Single photon emission computed tomography
Electrical capacitance tomography
Optical coherence tomography
Positron emission tomography
Whole-body PET
Reconstruction algorithms

Industrial electronics
Assembly systems
Flexible electronics
Robotic assembly
Computer aided manufacturing
CADCAM
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
CADCAM
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
............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 reactors
............Bioreactors
............Continuous-stirred tank reactor
............Ignition
............Chemical sensors

............Crystallizers
............Distillation equipment
............Fluidization
............Pharmaceutical technology
............Vitrification
............Cryogenics
............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
............Triboelectricity
............Engines
............Heat engines
............Steam engines
............Stirling engines
............Internal combustion engines
............Diesel engines
............Ignition
............Jet engines
............Environmental management
............Biodegradation
............Biodegradable materials
............Dams

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.. Electric machines
    .. AC machines
    .. Alternators
    .. Brushless machines
    .. Compressors
    .. Conductors
    .. DC machines
    .. Electric fences
    .. Generators
    .. Permanent magnet machines
    .. Rotating machines
    .. Rotors
    .. Stators
    .. Washing machines
    .. Fans
    .. Furnaces
    .. Blast furnaces
    .. Kilns
    .. Gears
    .. Magnetic gears
    .. Hydraulic systems
    .. Electrohydraulics
    .. Hydraulic equipment
    .. Hydraulic fluids
    .. Machine components
    .. Air cleaners
    .. Belts
    .. Cams
    .. Engine cylinders
    .. Exhaust systems
    .. Impellers
    .. Intake systems
    .. Manifolds
    .. Mechanical splines
    .. Pistons
    .. Rotors
    .. Shafts
    .. Valves
    .. Motors
    .. AC motors
    .. Brushless motors
    .. Commutation
    .. DC motors
    .. Electric motors
    .. Hysteresis motors
    .. Induction motors
    .. Micromotors
    .. Permanent magnet motors
    .. Servomotors
    .. Traction motors
    .. Universal motors

.. Printing machinery
.. Pumps
.. Fuel pumps
.. Heat pumps
.. Insulin pumps
.. Micropumps
.. Water pumps
.. Textile machinery
.. Spinning machines
.. Manufacturing
.. Assembly
.. Fitting
.. Microassembly
.. Preforms
.. Soldering
.. Assembly systems
.. Flexible electronics
.. Robotic assembly
.. Embossing
.. Fabrication
.. Bonding processes
.. Microfabrication
.. Optical device fabrication
.. Soldering
.. Welding
.. Green manufacturing
.. Lithography
.. Colloidal lithography
.. Extreme ultraviolet lithography
.. Interferometric lithography
.. Nanolithography
.. Soft lithography
.. Stereolithography
.. X-ray lithography
.. Manufactured products
.. Ceramic products
.. Chemical products
.. Consumer products
.. Electrical products
.. Food products
.. Fuels
.. Glass products
.. Mechanical products
.. Metal products
.. Paper products
.. Paper pulp
.. Plastic products
.. Rubber products
.. Sports equipment
.. Textile products
.. Tools
Windows
Manufacturing systems
Agile manufacturing
Automobile manufacture
Batch production systems
Blanking
Cellular manufacturing
Flow production systems
Food manufacturing
Forging
Glass manufacturing
Integrated manufacturing systems
Intelligent manufacturing systems
Job production systems
Joining processes
Layered manufacturing
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<td>Poincare invariance</td>
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<td>Uncertain systems</td>
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<td>High power microwave generation</td>
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<td>Microwave photonics</td>
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<td>Microwave sensors</td>
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<td>Submillimeter wave technology</td>
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<td>Nanotechnology</td>
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<td>Nanobioscience</td>
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<td>DNA computing</td>
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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 injection
Plasmas
Atmospheric-pressure plasmas
Low-temperature 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
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
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
Rebreathing equipment
Underwater structures
Underwater technology
Underwater communication
Underwater equipment
Underwater structures
Ocean temperature
Oceanographic techniques
Water pollution
Marine pollution
Power electronics
Adiabatic
Converters
AC-AC converters
DC-AC power converters
Digital-to-frequency converters
Frequency conversion
Mixers
Optical frequency conversion
Modular multilevel converters
Power conversion
AC-AC converters
AC-DC power converters
DC-AC power converters
DC-DC power converters
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
Pulse inverters
Resonant 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
Energy dissipation
Energy exchange
Inductive charging

Energy harvesting
Nanogenerators
Energy management
Demand-side management
Energy conservation
Energy efficiency
Energy informatics
Load management
Transactive energy
Energy resources
Fuels
Geothermal energy
Nuclear fuels
Solar energy
Wave power
Wind energy
Wind farms
Energy states
Effective mass
Orbital calculations
Surface states
Energy storage
Batteries
Flywheels
Fuel cells
Hydrogen storage
Supercapacitors
Superconducting magnetic energy storage
Power engineering
Ferroresonance
High-voltage techniques
Power engineering computing
Power system simulation
Power generation
Automatic generation control
Cogeneration
Distributed power generation
Geothermal power generation
Hydroelectric power generation
Hydroelectric-thermal power generation
Microhydro power
Picohydro power
Magnetohydrodynamic power generation
Nuclear power generation
Atomic batteries
Fission reactors
Fusion power generation
Power generation control
Power generation dispatch
Power generation planning
Solar power generation
Maximum power point trackers
Photovoltaic systems
Solar panels
Trigeneration
Turbomachinery
Turbines
Turbogenerators
Wind energy generation
Wind energy integration
Wind power generation
Power systems
Data center power
Hybrid power systems
Industrial power systems
Power distribution
Power distribution faults
Power distribution lines
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 system protection
Electrical safety
Substation protection
Surge protection
Power system reliability
Power system stability
Power transmission
Common Information Model (electricity)
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
Instrument transformers
Phase transformers
Power transformers
Pulse 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
Domestic safety
Emergency services
Explosion protection
Fire safety
Hazards
Biohazards
Chemical hazards
Explosions
Fires
............Flammability
............Floods
............Hazardous areas
............Hazardous materials
............Toxicology
............Health and safety
............Occupational health
............Occupational safety
............Marine safety
............Product safety
............Protection
............Explosion protection
............Lightning protection
............Radiation protection
............Radiation safety
............Radiation protection
............Safety devices
............Eye protection
............Fire extinguishers
............Protective clothing
............Safety management
............Vehicle safety
............Advanced driver assistance systems
............Lane departure warning systems
............Vehicle crash testing

Professional communication
............Collaboration
............Collaborative tools
............Call conference
............Collaborative software
............Videoconferences
............Discussion forums
............Teamwork
............Virtual groups
............Communication aids
............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
............Deductive databases
............Distributed databases
............Image databases
............Image retrieval
............Multimedia databases
............Object oriented databases
............Relational databases
............Spatial databases
............Transaction databases
............Itemsets
............Visual databases
............Global communication
............Cross-cultural communication
............Geographic information systems
............Geospatial analysis
............Gunshot detection systems
............Grammar
............Information analysis
............Decision analysis
............Indexing
............Information resources
............Information retrieval
............Blogs
............Content-based retrieval
............Dimensionality reduction
............Footprinting
............Hypertext systems
............Information filtering
............Information filters
............Recommender systems
............Information rates
............Music information retrieval
............Online services
............Online banking
............Search engines
............Search methods
............Keyword search
............Metasearch
............Search problems
............Semantic search
............Web search
............Social network services
............Computer mediated communication
............Facebook
............Flickr
............LinkedIn
............MySpace
............Second Life
............Twitter
YouTube
Tagging
Tag clouds
Taxonomy
Terminology
Dictionaries
Video sharing
Facebook
MySpace
YouTube
Vocabulary
Web sites
Facebook
MySpace
Uniform resource locators
Web design
YouTube
Information science
Information services
Ask IEEE
Dictionaries
Document delivery
Ask IEEE
Encyclopedias
Libraries
Software libraries
Teletext
Videotex
Wikipedia
Information systems
Data systems
Data acquisition
Data centers
Data compression
Data conversion
Data engineering
Data handling
Data processing
Data storage systems
Data warehouses
Database systems
Audio databases
Deductive databases
Image databases
Indexes
Multimedia databases
NoSQL databases
Object oriented databases
Query processing
Distributed information systems
Distributed management
Publish-subscribe
Identity management systems
Informatics
Biomedical informatics
Cognitive informatics
Energy informatics
Neuroinformatics
Information architecture
Information management
Common Information Model
(cooking)
Common Information Model
(electricity)
Competitive intelligence
Digital preservation
Document handling
Information security
Information sharing
Knowledge transfer
Information processing
Electronic healthcare
Informatics
Information exchange
Sonification
Management information systems
Portals
Medical information systems
Electronic medical records
Information technology
Bring your own device
Information age
Information and communication technology
Ambient assisted living
Information representation
Printing
Digital printing
Ink jet printing
Teleprinting
Three-dimensional printing
Semantic technology
Service computing
Telematics
Manuals
Meetings
Conferences
Oral communication
Public speaking
Speech
Plagiarism
Portfolios
Professional societies
Public speaking
Rhetoric
Writing
Abstracts
Bibliographies
Biographies
Autobiographies
Dictionaries
Documentation
Point of care
Grammar
Readability metrics
Resumes
Reviews
Thesauri

Reliability
Availability
Fault diagnosis
Dissolved gas analysis
Fault location
Fault tolerance
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
Automatic generation control
Automatic testing
Automatic test pattern generation
Ring generators
Building 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 robots
Autonomous vehicles
Unmanned autonomous vehicles
Multi-robot systems
Swarm robotics
Robots
Androids
Aquatic robots
Automata
Turing machines
Autonomous robots
Cognitive robotics
Computer vision
Active appearance model
Blob detection
Corner detection
Face detection
Feature detection
Interest point detection
Smart cameras
Visual odometry
Educational robots
Evolutionary robotics
Humanoid robots
Intelligent robots
Manipulators
End effectors
Manipulator dynamics
Micromanipulators
Medical robotics
Rehabilitation robotics
Mobile robots
Autonomous automobiles
Climbing robots
Legged locomotion
Orbital robotics
Parallel robots
Rehabilitation robotics
Rescue robots
Robot control
Robot motion
Robot kinematics
Motion analysis
Robot learning
Robot programming
Robot sensing systems
Robot vision systems
Simultaneous localization and mapping
Tactile sensors
Service robots
Snake robots
Soft robotics
Telerobotics
Teleoperators
Visual odometry
Wearable robots

Science - general
Astronomy
Astrophysics
Orbits
Stellar dynamics
Extrasolar planets
Extrasolar planetary atmospheres
Extrasolar planetary mass
Observatories
Radio astronomy
Solar system
Kuiper belt
Planets
Satellites
Sun
Biology
Biochemistry
Amino acids
Biochemical analysis
Peptides
Proteins
Receptor (biochemistry)
Biodiversity
Biogeography
Bioelectric phenomena
Electric shock
Biological cells
Cell signaling
Cells (biology)
Chromosome mapping
Fibroblasts
RNA
Stem cells
Biological information theory
Biological processes
Biological interactions
Chronobiology
Circadian rhythm
Coagulation
Molecular biology
Symbiosis
Biological system modeling
Biological systems
Anatomy
Molecular communication
Organisms
Biology computing
Biophotonics
Biophysics
Aerospace biophysics
Biomagnetics
Cellular biophysics
Molecular biophysics
Cryobiology
Evolution (biology)
Memetics
Phylogeny
Genetics
DNA
Gene therapy
Genetic communication
Genetic expression
Genetic programming
Genomics
Homeostasis
Mechanobiology
Microinjection
Nanobioscience
DNA computing
Nanobiotechnology
Physiology
Action potentials
External stimuli
Neuromodulation
Predator prey systems
Synthetic biology
Systematics
Systems biology
Vegetation
Crops
Marine vegetation
Zoology
Animals
Chemistry
Astrochemistry
Biochemistry
Amino acids
Biochemical analysis
Peptides
Proteins
Receptor (biochemistry)
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Activation analysis
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Electronic noses
pH measurement
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Anti-freeze
Bromine compounds
Chalcogenides
Ethanol
Methanol
Radiotracer
Geochemistry
Inorganic chemicals
Interstellar chemistry
Organic chemicals
Hydrocarbons
Photochemistry
Photobleaching
Electricity
Photoelectricity
Photovoltaic effects
Piezoelectricity
Piezoelectric effect
Piezoelectric polarization
Pyroelectricity
Thermoelectricity
Electrothermal effects
Peltier effect
Thermoelectric devices
Thermoelectric materials
Triboelectricity
Geoscience
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South Pole

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North Pole
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Air quality
Atmospheric modeling
Atmospheric waves
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EMTDC
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Geodynamics
Geophysics computing
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Seismology
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Ice surface
Ice thickness
Sea ice
Lakes
Land surface
Levee
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Sea floor
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Soil texture
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Biomagnetics
Cellular biophysics
Molecular biophysics
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Seismology
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Kinetic energy
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Electrostatic levitation
Magnetic levitation
Lorentz covariance
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Aerodynamics
Biomechanics
Damping
Dynamics
Fatigue
Kinematics
Lubrication
Magnetohydrodynamics
Photoelasticity
Pressure effects
Shock (mechanics)
Strain
Stress
Surface cracks
Torque
Vibrations
Volume relaxation
Workability
Network theory (graphs)
Physics education
Quantum mechanics
Density functional theory
Lagrangian functions
Proton effects
Quantum capacitance
Quantum cryptography
Quantum entanglement
Relativistic quantum mechanics
Schrödinger equation
Stationary state
Teleportation
Tunneling
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
Sociology
Digital divide
Social groups
Millennials
Senior citizens
Social intelligence
Thermodynamics
Enthalpy
Isobaric
Isothermal processes
Sensors
Acoustic sensors
Chemical and biological sensors
Biosensors
Gas detectors
Amperometric sensors
Electromechanical sensors
Microsensors
Force sensors
Infrared sensors
Intelligent sensors
Intracranial pressure sensors
Ionizing radiation sensors
Position sensitive particle detectors
Radiation detectors
Bolometers
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
Sensor phenomena and characterization
Sensor systems and applications
Detectors
Envelope detectors

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Semiconductor detectors
Electric sensing devices
Leak detection
Radiofrequency identification
RFID tags
Robot sensing systems
Robot vision systems
Simultaneous localization and mapping
Tactile sensors
Sensor arrays
Sensor fusion
Sensor systems
Activity recognition
Gunshot detection systems
Thermal sensors
Temperature sensors
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
Array signal processing
Attenuators
Optical attenuators
Chirp
Convolution
Convolvers
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
Digital filters
Finite impulse response filters
Equalizers
Adaptive equalizers
Blind equalizers
Decision feedback equalizers
Filtering theory
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 
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 
....Electrooptic modulators 
....Intensity modulation 
Phase modulation 
....Continuous 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 
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 feedback 
....Noise cancellation 
....Phase noise 
....Signal to noise ratio 
PSNR 
....Superconducting device noise 
....White noise 
AWGN 
....Optical signal processing 
....Laser noise 
....Optical 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 
....Magnetic recording 
....Digital magnetic recording 
....Heat-assisted magnetic recording 
....Magnetic noise 
....Magnetooptic recording 
....Microwave-assisted magnetic recording 
....Perpendicular 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
Spectral analysis
Infrared spectra
Judd-Ofelt theory
Spectroradiometers
Signal design
Signal detection
Acoustic signal detection
Sonar detection
Motion detection
Multiuser detection
Optical signal detection
Phase detection
Phase frequency detector
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 differences
Environmental factors
Biosphere
Ecology
Ecosystems
Wetlands
Environmental economics
Carbon tax
Environmental monitoring
Global warming
Green manufacturing
Green products
Green buildings
Green cleaning
Green transportation
Pollution
Air pollution
Industrial pollution
Land pollution

Oil pollution
Radioactive pollution
Thermal pollution
Urban pollution
Water pollution
Ethical aspects
Ethics
Cyberethics
Globalization
International relations
Peace technology
Philosophical considerations
Social factors
Demography
Technology social factors
Privacy
Sustainable development
Technology
Appropriate technology
Disruptive technologies
Neurotechnology
Technological innovation
Technology social factors
Privacy
Technology transfer
Small business technology transfer
Telepresence
Telexistence

Solid state circuits
Circuit subsystems
Circuit theory
FET circuits
FET integrated circuits
Field effect MMIC
MESFET integrated circuits
JFET circuits
JFET integrated circuits
MESFET circuits
MESFET integrated circuits
MODFET circuits
MODFET integrated circuits
MOSFET circuits
CMOSFET circuits
MOS integrated circuits
Power MOSFET
Gate leakage
Solid state circuit design
Transistors
Field effect transistors
CNTFETs
Double-gate FETs

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HEMTs
JFETs
MESFETs
MISFETs
MODFETs
MOSFET
MOSHFTs
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 (superconductivity)
Critical current density
Flux pinning
Superconducting devices
Josephson junctions
SQUIDs
Superconducting coils
Superconducting magnets
Superconducting microwave devices
Superconducting photodetectors
Superconducting filaments and wires
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
Type II superconductors
Superconducting transition temperature

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
Hierarchical systems
Multilevel systems
Integrated design
Interface management
Modeling
Analytical models
Common Information Model (computing)
Atmospheric modeling
Brain modeling
Computational modeling
Agent-based modeling
Computational cultural modeling
Context modeling
Data models
Metadata
Deformable models
Digital elevation models
Emulation
Graphical models
Green's function methods
Hidden Markov models
Input variables
Integrated circuit modeling
Cutoff frequency
Inverse problems
Deconvolution
Load modeling
Metamodeling
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
Medical simulation
Systems simulation
Solid modeling
System identification
Systems modeling
Multidimensional systems
Physical design
Reduction order systems
Requirements engineering
Technical requirements
Requirements management
Service-oriented systems engineering
Solution design
Stochastic systems
System analysis and design
Asymptotic stability
Control system analysis
State-space methods
Diakoptics
Distributed processing
Dew computing
Edge computing
Message passing
Distributed vision networks
Fault detection
Fault tolerant systems
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
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
System realization
System validation
System testing
Model checking
System verification
System testing
Model checking
Systems architecture
Systems engineering education
Systems operation
Systems simulation
Systems support
Systems thinking
Task analysis
Technical management
Maintenance management
Technical planning
Systems, man, and cybernetics
Behavioral sciences
Animal behavior
Cognition
Activity recognition
Cognitive neuroscience
Cognitive processes
Self-aware
Consumer behavior
Psychiatry
Mental disorders
Psychology
Emotional responses
Industrial psychology
Mood
Neuropsychology
Psychometric testing
Social intelligence
Biological control systems
Biomarkers
Molecular biomarkers
Computational linguistics
Sentiment analysis
Cybernetics
Adaptive systems
Adaptive control
Cognitive radar
Line enhancers
Multi-agent systems
Variable structure systems
Cognitive informatics
Cognitive science
Problem-solving
Control theory
Control nonlinearities
Iterative learning control
Observability
Decision theory
Decision trees
TOPSIS
Econophysics
Emergent phenomena
Intelligent control
Feedforward systems
Neurocontrollers
Linear feedback control systems
Phase locked loops
State feedback
Tracking loops
Ergonomics
Job design
Human factors
Anthropomorphism
Identification of persons
Biometrics (access control)
Face recognition
Fingerprint recognition
Gait recognition
Iris recognition
Palprint recognition
Face recognition
Fingerprint recognition
Handwriting recognition
Forgery
Speaker recognition
Speech recognition
Automatic speech recognition
Speech analysis
Man-machine systems
Extended reality
Interactive systems
External stimuli
Natural languages
Linguistics
Phonetics
Pragmatics
Natural language processing
Morphology
Sentiment analysis
Tokenization
Pervasive computing
Ubiquitous computing
Context-aware services
Wearable computers
Smart glasses
Posthuman
Teleworking
Transhuman
User interfaces
Audio user interfaces
Brain-computer interfaces
Data visualization
Isosurfaces
Emotion recognition
Exoskeletons
Graphical user interfaces
Avatars
Human computer interaction
Affective computing
Extended reality
Gaze tracking
Head-mounted displays
Head-up displays
Telepresence
Telexistence
Human-robot interaction
Human-vehicle systems
Smart cards

Ultrasonics, ferroelectrics, and frequency control
Ferroelectric materials
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 electronics
Power steering
Vehicle crash testing
Vehicle detection
Vehicle driving
Vehicle dynamics
Rollover
Vehicle safety
Advanced driver assistance systems
Lane departure warning systems
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
Propulsion
Aerospace propulsion
Aircraft propulsion
Propellers
Electromagnetic launching
Coilguns
Railguns
Electrothermal launching
Rockets
Vehicles
Connected vehicles
Intelligent vehicles
Autonomous vehicles
Unmanned vehicles
Vehicle-to-everything
Land vehicles
Bicycles
Electric vehicles
Road vehicles
Military vehicles
Space vehicles
Space shuttles
Wireless sensor networks