# About NJES

## Introduction:

Al-Nahrain Journal for Engineering Sciences is an open access specialized academic journal that evaluates and publish scientific papers in all engineering subject matters submitted by researchers. The editorial board consists of faculty members from Al-Nahrain University and other international universities, as well as an advisory board from Iraqi and foreign universities, specialized in engineering sciences. The members of these boards typically hold the Professor and Asst. Professor scientific titles.

The editorial board have monthly meetings to follow-up the progress of the submitted papers and the journal affairs, as well as the approval or rejection of concluded papers according to the reviews of the selected professional reviewers for each paper. These reviewers are selected according to the specialized subject matter of each paper.

The journal was founded in 1988 (previously titled; Nahrain University - College of Engineering Journal with the ISSN 1812-187X). It is a quarterly publication in English, issued in Baghdad under the authority of College of Engineering - Al-Nahrain University, with the registration number ISSN 2521-9154 and eISSN 2521-9162. Also, the journal has the DOI prefix 10.29194. NJES became a member of DOAJ since 2018.

## Aims and Scope

NJES journal is committed to publish the scientific output of researchers in the full range of engineering fields of architectural, chemical, civil, computer, electrical, electronic, communications, information technology, laser and optoelectronics, mechanical and biomedical engineering as well as any directly related fields. The most significant criteria for accepting papers in this journal is scientific excellence and integrity .

The material of the paper must not violate any intellectual property rights of any person or entity, must not contain any subject matter that contravenes any Iraqi or international laws, and must adhere to the ethical standards applicable for all research disciplines. NJES accepts papers written in English only aside from the Arabic title and abstract for native Arabic speakers.

## Publication Ethics

Al-Nahrain Journal for Engineering Sciences (NJES) aspires to publish scientifically excellent research articles while maintaining the integrity of scientific research by following the highest standards of ethical research practice and publication. Our journal is exceedingly serious about its responsibilities. We adhere to the national and international laws of intellectual property, thus all submitted papers shall be thoroughly checked for plagiarism and misconduct before further processing.

Any noted potential breach of our publication ethical standards shall be investigated. If such breaches are proven to be accurate, the journal shall attain the right to reject the submitted material immediately. If necessary, NJES shall attain the right to take legal steps and actions against the offending party.

# Guidelines for Authors and Publication Requirements

## General Information

Al-Nahrain Journal for Engineering Sciences (NJES), a refereed scientific engineering journal published under the authority of the College of Engineering, Al- Nahrain University four times per year. Our Journal is the winner of Al-Nahrain University prize for the Best Scientific Journal of 2017. The journal publishes the scientific output of researchers in the fields of architectural, chemical, civil, computer, electrical, electronic, communications, information technology, laser and optoelectronics, mechanical and biomedical engineering as well as any directly related fields. Papers are submitted in English only to the journal .

The material of the manuscripts submitted to our journal must not violate any intellectual property rights of any person or entity, must not contain any subject matter that contravenes any Iraqi or international laws, and must adhere to the ethical standards applicable for all research disciplines .

## Fees

For the manuscript to be submitted for publications, 50.000.00 ID should be paid upon the submission of the manuscript to NJES office in Al-Nahrain University/ College of Engineering. This does not apply for International submissions .

## Requirements

1. **All manuscripts** submitted for publication must not be published or considered for publication or accepted for publication elsewhere .
2. **The manuscript** submitted for publication must be submitted online as an MS Word copy only according to the standards of the journal's research template provided in our website. Please provide a physical copy of the Researcher's Obligation form with the required signatures and physical stamping in person if the researchers are from Iraq or a scanned copy if the researchers are abroad .
3. **The manuscript** must include a title and an abstract that ranges between 200-250 words for each of the English and Arabic versions (in case of native Arabic authors). The manuscript's pages must not exceed 15 printed pages .
4. **Full** name(s), qualification(s), affiliation(s), address(es) and e-mail addresses of all the authors must be arranged just below the title of the manuscript .
5. **Abbreviations** must not be used in the title of the manuscript and the abstract, except those of the measurement units .
6. **Only** standard international units (SI units) must be used .
7. **Tables and illustrations** such as figures, photographs and drawings must be clear, numbered, titled and referred to in the text consequently.
8. **Footnotes** can be used to clarify information, and, when used, footnotes must be numbered.
9. **Font description** for manuscripts written in English using the "Garamond" font and submitted in MS word only .
   - Title: 16pt (Bold) in the middle.
   - Authors Name/Names : 12pt (Bold) .
   - Affiliations: 10pt (Regular).
   - Headings: Capital initial letters size 12pt (Bold) and placed flush to the left-hand margin.
   - Sub-headings: Capital initial letters size 11pt (Bold) and placed flush to the left-hand margin.
   - The manuscript should be written in TWO columns except for the abstracts section.
   - Both the English and Arabic abstracts should be located at the beginning of the submitted manuscript .

- The Arabic abstract should be in "Arabic Typesetting" font with single line spacing and the Arabic title 18pt (Bold)
- Keywords: should be written after both abstracts. 10pt.
- Text: 10pt. The first line should be flushed to the right by 5 mm .
- Equations: Must be numbered in parentheses flush to the right-hand margin with dots leading the numbers; a single line blank space should be left before and after the equation. Equations are referenced within the text as follows :
  eq. (**x**), where **x** is the equation number.

10. **Figures and Tables:** Should be referenced in bold as follows: Fig.1, Table 1. Figure captions should [ Figure ( ): ] appear below the figure in small letters sized 10 and must be centered above the table [Table ( ): ] in small letter size 10; a single line blank space should be left before and after the table heading.
11. **References:** References should be grouped together at the end of the manuscript, after the acknowledgment. They must be referred to as they appear in the text with square brackets [ ]. References should follow the **IEEE 2006** referencing style using "Garamond" 10pt .

## Submission, Revision, and Final Decision Procedures

After submitting the manuscript to our journal, the author/s shall receive a confirmation email with their manuscript reference number within 24 hours If the author/s do not receive the confirmation email, please have the corresponding author check their SPAM E-mail folder just in case the confirmation email got delivered there instead of the inbox .

All materials submitted to the Journal are checked for plagiarism using **Turnitin**, Plagiarism per source should be less than 5%. Total Plagiarism must not exceed 20%. (Bibliography and sources with less than "5 words" are excluded) .

Then after the material must be approved by the assigned reviewers and the Editorial Panel before being published in the Journal. The manuscripts are usually reviewed at least by two referees, selected by the Editorial Panel according to the paper's subject matter. Referees are required to conduct a review and provide an assessment report within three weeks of receiving the manuscript. If the two manuscript reviews contradicted each other, then a third reviewer shall be assigned and the majority opinion shall be conclusive .

The author/s shall receive the reviewers' reports and the required modifications, if available, then are requested to make these revisions within three weeks of receiving them, which shall be resubmitted to the referees for reassessment (if required). A letter detailing the requested revisions, addressed to the reviewers, should be submitted along with the revised manuscript to be sent to the reviewers with no reference whatsoever to the authors names in that letter .

The minimum period for submissions to be either accepted or declined is approximately two months. Declined submissions are returned to the corresponding author as soon as possible.

If the manuscript is accepted for publishing, the author/s are requested to provide a final electronic copy of the manuscript integrating the journal's typesetting requirements, and incorporating all the modifications requested and made during the assessment process .

When a manuscript is accepted for publication, it shall be sent for typesetting. One set of page proofs will be sent to the corresponding author to check thoroughly before publication. The marked proof must be returned to the Journal within seven days .

## Review Papers

NJES accepts review papers exclusively from authors who have been publishing papers in an Engineering specialized field, or an Interdisciplinarity field with Engineering such as biomedical engineering, for at least five years prior to submitting their review manuscript to our journal .

NJES **requires 25 listed references minimum** per each manuscript submitted to our journal.

# Useful Keywords

# Architectural Engineering

| | | |
|---|---|---|
| Access | Flexibility | Plan |
| Acoustics | Formation | Pragmatic |
| Aesthetic | | Public buildings |
| Alley | Glazing | |
| Antinational index | Ground Floor | Ramp |
| Arcade | Gutter | Rehabilitation |
| Arch | | Reinforced renewal |
| Architect | Hanging | Restoration |
| Architecture | Hard Core | Residential buildings |
| Autonomous | Head room high-tech | Retaining wall |
| Axe | Housing | Roof |
| | | Rough |
| Base | Image | |
| Basement | Indicator | Section |
| Bay | Industrial building | Semantic |
| Beam | Insulation | Semiotic |
| Block | Interpretation | Significance |
| Building | | Silt |
| Bulky | Jack Arch | Site |
| | | Skeleton |
| Cantilever | Maintenance | Smooth staircase |
| Ceiling | Masonry | Structuralism |
| Center | Material | Style of architecture |
| Characteristics | Meaning | Sustainable |
| Code | Mechanism | Symbolic |
| Color | Model | Syntax |
| Column | Modern | System |
| Conservation | Modernity | |
| Construction | Moumanility | Tower building |
| Constructivism | Mortar | Town planning |
| Context | Mullions | Tradition type |
| Core | | Type |
| Court | Key Stone | Typology |
| Crack | | |
| | Landscape | Urban |
| Decoration | Level | Urban Fabric |
| Defect | | |
| Design | Order | Variability |
| Dimension | | Ventilation |
| Dome | Partition | |
| | Pattern | Zoning |
| Elevation | Percepts | |
| Entrance | Phenomenology | |

# Chemical Engineering

| | | | |
|---|---|---|---|
| Absorption | Economics | Laminar flow | Radiation |
| Activity coefficient | Equation of state | Liquid-liquid separation | Reaction engineering |
| Adsorption | Equilibrium properties | | Reactors |
| Adsorbents | | | Reactive separation |
| Air pollution | Electrochemical | Mass transfer | Reboilers |
| Alkylation | Energy conservation | Material engineering | Refinery process |
| Azeotropes | Energy | Membrane separation | Refinery energy |
| | Environmental heat transfer | Membrane bioreactors | Reforming |
| Batch distillation | | | Refrigerants |
| Batch operation | Evaporation | Mixing | Reliability engineering |
| Batch reactor | Exergy | Modeling | Reverse osmosis |
| Biomass | Extraction | Modeling electrolyte | Rheology |
| Bioreactors | Extraction distillation | Molecular separation | |
| Biotechnology | | Momentum transfer | Safety |
| Bio processing | Filtration | Multiphase flow | Serubbers |
| Bioengineering | Finned exchanges | Multi component systems | Sedimentation |
| Boiling | Fixed bed process | | Separations |
| Boundary layer | Flotation | | Simulation |
| Bubble column | Flow meters | Natural gas production | Simulation distillation |
| | Fluid flow | | Size reduction |
| Catalysis | Fluidization | Natural products | Solid-liquid separation |
| Catalytic distillation | Food | Newtonian fluid | |
| Catalytic reactors | Fuels | Non-newtonian fluid | Transport phenomena |
| Centrifugation | Fugacity | | Thermodynamic |
| Chemical reaction | Furnaces | Oil production | Thermal management |
| Chromatrography | | Optimization | Thermal coupled distillation |
| Coating | Gas engineering | Osmotic distillation | |
| Combustion | Gas-liquid separation | | Thickeners |
| Complex fluids | | Packed towers | Turbulent flow |
| Computer simulation | Heat exchangers | Particle technology | Two phase flow |
| Composites | Heat transfer | Particle size | |
| Conduction | Heat transfer coefficient | Particulate removal | Unsteady-state flow |
| Control | | Petrochemicals | |
| Convection | Heat pumps | Petroleum refinery | Viscosity |
| Cooling towers | High temperature corrosion | Phase equilibrium | Viscous fluids |
| Corrosion | | Polymers | |
| Crude distillation | | Process system engineering | Waste treatment |
| Crystallization | Interface | | Water pollution |
| Cyclones | Ion exchange | Process design | Water treatment |
| | Interfacial phenomena | Process dynamics | |
| Dehumidification | | Process synthesis | |
| Desorption | Isomerization | Process control | |
| Diffusion | | Process simulation | |
| Distillation | Kinetics | | |
| Distillation control | | | |
| Drying | | | |

# Civil Engineering

| | | | |
|---|---|---|---|
| Aggregate | Durability | Mathematical models | Settlements |
| Airport | Dynamic | Military engineering | Seismic engineering |
| Alluvium | | Mining & quarrying | Sewers |
| Asphalt | Earth pressure | Mudstone | Sewage treatment |
| | Earth works | Municipal engineering | Soil mechanics |
| Backfill | Economics | | Shells |
| Beams | Elasticity | Noise | Silos |
| Bearing capacity | Embankments | Numerical methods | Silt |
| Bricks | Engineering geology | | Site investigation |
| Bridges | Environment | Offshore engineering | Slabs |
| Building | Erosion | Organic materials | Slope stability |
| | Excavation | Overburden | Social impact |
| Cables | | | Soil-structure interaction |
| Caissons | Failures | Pavements | Stability |
| California bearing ratio | Fatigue | Permeability | Statistical analysis |
| Canals | Finite elements | Petroleum | Steel structures |
| Car parks | Floods | Photogrammetry | Streets |
| Cavities | Foundation engineering | Piles | Strength of materials |
| Cement | Frost action | Pipes | Stress analysis |
| Clay | | Planning | Structural frameworks |
| Coastal engineering | Geomaterials | Plasticity | Subsidence |
| Codes & standards | Geophysics | Pollution | Surface water |
| Cofferdams | Geotechnique | Pore pressure | Surveying |
| Columns | Geotextilos | Power station | |
| Compaction | Gravel | Public health | Thermal effects |
| Composite structures | Grouting | Quality control | Timbre structures |
| Concrete technology | Groundwater | Quarries | Town planning |
| Concrete structures | | | Traffic engineering |
| Conservation | Highways | Railroads | Transportation engineering |
| Consolidation | Hydrology | Recreational facilities | |
| Contracts | | Recycling of materials | Triaxial tests |
| Corrosion | Infrastructure | Rehabilitation | Tunnels |
| Cranes | In-situ tests | Reclamation | |
| Cyclic loading | Ion exchange | Reservoirs | Underwater engineering |
| | Irrigation | Resins | |
| Dams | | Risk | Urban design |
| Deformation | Joints | Retaining walls | |
| Demolition | | River engineering | Vibration |
| Diaphragm walls | Laboratory tests | Rock mechanics | |
| Diffusion | Landfill | | Waste management |
| Disaster engineering | Land reclamation | Safety | Water quality |
| Disposal | | Sand | Water supply |
| Docks | Maintenance | Saturation | Waterways |
| Drainage | Management | Seepage | Weather |
| Dredging | Marketing | | Wind engineering |
| Drilling | Material technology | | |

# Computer Engineering

Algorithms
Analog computers
Artifical cybernetics
Artifical intelligence
Assembly language

Code development
Color vision
Complex systems
Computational linguistics
Computational methods
Computer network security
Computer security
Computer aided design
Computer applications
Computer architecture
Computer circuits
Computer data
Computer engineering
Computer graphics
Computer hardware
Computer interface
Computer methods
Computer modelling
Computer network
Computer operating system
Computer peripherals
Computer programming languages
Computer science
Computer simulation
Computer software
Computer storage
Computer system analysis
Computer systems
Computer theory
Computer vision
Computers,
Cryptanalysis
Cryptology

DASD
Digital computers
Distributed computing systems

Educational technology
Experiment design
Expert systems

Fault tolerance
Fault-tolerant computer networks

Games theory

High performance software

Image segmentation
Information systems
Information technology
Information engineering
Integrated hardware software systems

Local area networks
Logic and switching circuits
Logic design

Network communication

Object technology
Online learning
Optical computer technology

Parallel algorithms
Parallel processing systems
Parallel programming
Pattern recognition
Performability
Program verification

Realtime systems
Reverse code engineering,

Security analysis
Software engineering
Software-protection
Stochastic activity network
Stochastic Petri nets
Supercomputers
Switching theory

Texture analysis
Token ring

Virus-research

# Electronic and Communication Engineering

| | | | |
|---|---|---|---|
| Absorption | EIRP | Microstrip | Satellite |
| Access | Electromagnetic | Microwave | Scanning |
| Acquisition | Electronic | Mobile | Scattering |
| Algorithms | Electronic warfare | Mode | Shielding |
| Ambiguity | Enhancement | Modeling | Security |
| Amplifiers | ESM | Modulation | Semiconductor |
| Antennas | | Monopulse | Sensor |
| Arrays | Fading | Multipath | Side lobes |
| Artificial intelligence | Feeder | Multiplex | Signals |
| Atmosphere | Ferrites | | Signal processing |
| Attenuation | Ferromagnetic | Noise | Simulation |
| | Filter | Nonlinearity | SLAR |
| Band width | Field effect transistor | Numerical | Smoothing |
| Baseband | Format | | Software |
| Beam forming | Free space | Omnidirectional | Solid state |
| Beam width | Frequency | Optical fiber | Sounders |
| Bit error rate | | Optimization | Space |
| Broad band | Gain | Orbit | Spread spectrum |
| Broadcasting | Gates | | Spectral analysis |
| Burst | GIS | Pager | Strip lines |
| | Ground waves | Parallel processing | Switching |
| Cable | GSM | Pattern recognition | Synchronization |
| CAD | | Permittivity | Synthesizer |
| Cattier | Harmonics | Phase array | |
| Cellular | Homing | Photogrametry | Telemetry |
| Channel | Hopping | Polarization | Telephony |
| Circuit | Hardware | Power amplifier | Thermal noise |
| Code | Horizon | Power and machines | Tracking |
| Communications | | Power electronics | Transducer |
| Compatibility | Identification | Prediction | Transform |
| Conductivity | Image processing | Probability | Transient analysis |
| Control | Industrial electronics | Propagation | Transistors |
| Correlation | Information | Protocol | Transmission |
| Counters | Integrated circuits | | Transponder |
| | Interference | Quality factor | Troposphere |
| Data | Intermodulation | Quantization | TWT |
| Decoding | Ionosphere | Quantum electronics | |
| Demodulation | Isolator | | Ultra-high-frequency |
| Detector | Isotropic | Radar | Up-link |
| Dielectrics | | Radiation pattern | |
| Diffraction | Jamming | Radio frequency | Video |
| Digital | | Radio-link | VLSI |
| Dipole | Kalman filter | Real time | Voice channel |
| Directivity | | Receiver | VSAT |
| Direct sequence | Link | Reflection | VSWR |
| Diversity | Line-of-sight | Refractivity | |
| Down link | Logic | Reliability | Waveguides |
| Drives and actuators | | Remote sensing | Waves |
| Ducting | Matching | Repeaters | Wireless |
| | Memory | Resolution | |
| ECCM | Message | | Yagi antennas |
| ECM | Meteors | Sampling | |
| Efficiency | microprocessor | SAR | |

# Laser, Optics and Opto-Electronics Engineering

| | | |
|---|---|---|
| Aberrations | Image | Physiological optics |
| Acousto-optical devices | Infrared | Photography |
| Apertures | Interconnects | Phase shifting |
| Atmospheric optics | Integrated optics | interferometry |
| | Interference | Polarization |
| Beam trapping | | |
| Birefringence | Lasers | Quantum optics |
| | Laser diodes | Quantum fluctuations |
| Cherenkov radiation | Laser design and operation | Q-switching |
| Chemical lasers | Laser resonators | |
| Color detection | Laser modulation | Radiation |
| Color vision | Laser efficiency | Raman lasers |
| Coherence | Laser continuous operation | Range finders |
| | Laser applications | Reflectors |
| Design of optical systems | Laser measurements | |
| Diode-pumped lasers | Laser spectroscopy | Scales for light |
| Display devices | Lenses | Scanners |
| Dye lasers | Liquid crystals | Schlieren devices |
| Dynamic Stark shift | Light-sensitive materials | Semiconductor lasers |
| | | Sensors, gyros |
| Edge and boundary effects | Magnetooptical devices | Solar collectors and concentrators |
| | Mechanical effects of light | Solitons in fibers |
| Fiber lasers | Modulation | Synchrotron radiation |
| Filters | | |
| Fiber optics | Nonlinear optics | Ultrafast processes |
| Fiber-optic instruments | | |
| Fiber fabrication | Optical system design | Visible and ultraviolet sources |
| Fiber testing | Optical spectrometers | Vision |
| Fourier optics | Optical processors | Volume holograms |
| Free-electron lasers | Optical communication | |
| | Optical computers | Wave fronts and ray tracing |
| | Optical storage systems | Waveguides |
| Gas lasers | Optical coatings | Wave optics |
| Geometrical optics | | Wave propagation |
| Glasses, quartz | Pattern recognition | |
| Gratings | Phase retrieval | X- and y-ray lasers |
| | Photon statistics | X-ray |
| Harmonic generation | | |
| Holography | Photonic bandgap materials | |

# Mechanical Engineering

| | | | |
|---|---|---|---|
| Aerodynamic | Detect | Laminate | Solar energy |
| Aerolastisity | Detection | Linear | Stability |
| Air-conditioning | Dies | Loading | Static |
| Analysis | Divergence | | Steady |
| Axial compressor | Dynamic | Mass transfer | Steam |
| | | Material | Stiffened |
| Bar | Edge | Matrix | Stiffness |
| Beam | Elastic | Metal | Strain gauge |
| BEM | Energy | Modulus | Strength |
| Bending | Extrusion | | Stress |
| Bevel | | Non-linear | Structure |
| Blade | Fixed | Non-symmetric | Symmetric |
| Boundary layer | Fatigue | Nuclear power | |
| Buckling | FEM | Numerical | Tension |
| | Fillet | | Tensional |
| CAD | Fluid | Ocean power | Thermal power |
| CAM | Flutter | Optimum | Thermo siphon |
| Centrifugal CNC | Fracture | Orthotropic | Thermodynamic |
| Centrifugal CFD | Free | | Thermoelastic |
| Chamber | | Photoelasticity | Thermoplastic |
| Collectors | Gas | Pipes | Tooth |
| Column | Gas dynamic | Plastic | Toughness |
| Compatibility | Gear | Plate | Transfer |
| Composite | Geometry | Ply angle | Transient |
| Compressor | Geometry power | Polymers | Tubes |
| Compustional | | Power | Turbine |
| Computer | Heat | Power plant | Two phase flow |
| Concentration | Heat exchanger | Pressure | |
| Concentrators | Helical | Profile | Unstiffened |
| Conduction | Hoop | | |
| Conical | Hydroelectric | Radial | Vibration |
| Convection | | Radiation | Viscoelastic |
| Creep | I.C.E | Refrigeration | Viscoplastic |
| Cut out | Impact | Renewable | |
| Cyclic | Industrial | Resin | Wall |
| Cylindrical | Intersection | Restraints | Wind energy |
| | Involutes | Rigidity | Worm |
| Degradation | Isotropic | Rotation | |
| Delamination | | Shearing | Yield |
| Deflection | Jet engine | Sheet | |
| Design | J-internal | Shell | |

# BioMedical Engineering

Accelerometer
Action Potential
Active Media
Alarm System
Amplifier(s)
Analog to Digital Converter
Angle(s)
Anthropometry
Argon Laser
Articulation
Artificial Organs
A-Scan
Atrial Fibrillation
Atrioventricullar node
Artifacts
Attenuation
Auto Analyzer

Balance
Bandwidth
Bed side monitor
Biocompatibility
Bioelectric Amplifier(s)
Bioinstrumentation
Biomaterials
Biomechanics
Biopotentials
Biosensors
Biostatistics
Blood Cell Counter
Blood Flow Measurement
Blood Viscosity
Body Mass Index
Body Weight
Bone(s)
Bradycardia
Brain Waves
Breathing Mechanics
B-Scan

Capacitor(s)
Cardio Pacemaker
Cardio Tachometer
Cardioverter
Cartilage(s)
Catheterization
Center of Gravity
Clinical Engineering
$CO_2$ Laser
Coefficient of Friction
Colorimeter
Common Mode Signal
Compartmental Modeling
Compression
Computerized Tomography
Continuos Wave
Control Unit
Coronary Care Unit

DC Shock
Defibrillator
Depolarization
Dental Chair Unit
Detector Circuit
Dialysis Machine
Diaphragm
Diastole
Differential Amplifier(s)
Digital to Analog Converter
Doppler Effect
Dye Laser

Efficiency
Electrical Safety
Electrocardiography
Electroencephalography
Electromyography
Electroneurography
Electroretinography
Electrode(s)
Electrosurgery
Endoscope
Equilibrium
Excimer Laser

Fatigue
Feedback
Fiber Optics
Filter(s)
Finite Element Analysis
Flame Photometer
Fluids
Fluoroscopy
Force(s)
Fracture(s)
Free Body Diagram
Frequency Response
Friction
Fulcrum

Gain
Gait Analysis
Galvanometer
Glucometer
Goniometer

Haemostasis
Hb-Meter
Heart-Lung Machine
He:Ne Laser
Hospital Organization
Human Joint(s)
Image Processing
Implants
Inductor(s)
Infrared Radiation
Intensity
Intensive Care Unit
Interaction
Isolation transformer

Joint Movements

Kinesiology

Lever(s)
Ligament(s)
Lubrication
Lung Volumes

Magnetic Resonance Imaging
Medical Imaging
Moment Arm
Moment of Inertia
Motor Unit
M-Scan
Muscle(s)
Muscloskeletal modeling
Myoelectrical activity

Nd:YAG Laser
Neural Networks
Newtonian Properties
Noise

Occupational Biomechanics
Optical Resonator
Oscillators
Osteoarthritis
Oximeter

Paddles
Piezoelectric Effect
Penetration
PH Meters
Physiological Modeling
Plethysmograph
Population Inversion
Pressure Manometers
Probe(s)
Prostheses
Pulmonary Ventilators
Pulsed Wave

QRS-Complex

Range of Motion
Rectifier(s)
Reflex Action
Reflection
Refraction Index
Rehabilitation Engineering
Respiratory Monitors
Resting Potential
Rotation Axis
R-R Interval
Ruby Laser
R-Wave

SA Node
Sagittal Plane
Simulation
Spectrophotometer
Sphygmomanometer
Spirometer
Stethoscope
Stimulation
Strain Gauge(s)
Stress Distribution
Synovial Fluid
Systole

Tachycardia
Telemetry Medicine
Temperature
Tendon(s)
Tension
Tissue Engineering
Thermistor
Threshold
Transducer(s)
Transmittance
Tribology
Torsion

Ultrasonic Waves
Ultraviolet Radiation

Valve(s)
Vector(s)
Ventricular Assist Device
Vibration Analysis

Wheatstone Bridge

X-Ray Machine
X-Ray Tube

Young Modulus