

# TECHNOLOGY KEYWORDS

## 1. ELECTRONICS, IT AND TELECOMMS

### 1.1. Electronics, Microelectronics

- 1.1.1. Automation, Robotics Control Systems
- 1.1.2. Digital Systems, Digital Representation
- 1.1.3. Electronic circuits, components and equipment
- 1.1.4. Electronic engineering
- 1.1.5. Embedded Systems and Real Time Systems
- 1.1.6. High Frequency Technology, Microwaves
- 1.1.7. Magnetic and Superconductive Materials/Devices
- 1.1.8. Microengineering
- 1.1.9. Micromachining
- 1.1.10. Nanotechnologies related to Electronics and Microelectronics
- 1.1.11. Optical Networks and Systems
- 1.1.12. Peripherals Technologies (Mass Data Storage, Display Technologies) related to Electronics and Microelectronics
- 1.1.13. Printed Circuits and Integrated Circuits
- 1.1.14. Quantum Informatics
- 1.1.15. Semiconductors
- 1.1.16. Smart Cards and Access Systems
- 1.1.17. Environmental and Biometrics Sensors, Actuators

### 1.2. Information Processing, Information System, Workflow Management

- 1.2.1. Advanced Systems Architecture
- 1.2.2. Archivistics/Documentation/Technical Documentation
- 1.2.3. Artificial Intelligence (AI)
- 1.2.4. Computer Games
- 1.2.5. Computer Hardware
- 1.2.6. Computer Software
- 1.2.7. Computer Technology/Graphics, Meta Computing
- 1.2.8. Data Processing/Data Interchange, Middleware
- 1.2.9. Data Protection, Storage Technology, Cryptography, Data Security
- 1.2.10. Databases, Database Management, Data Mining
- 1.2.11. Electronic Commerce, Electronic Payment
- 1.2.12. Imaging, Image Processing, Pattern Recognition
- 1.2.13. Information Technology/Informatics
- 1.2.14. Internet Technologies/Communication (Wireless, Wi-Fi, Bluetooth)
- 1.2.15. Knowledge Management, Process Management
- 1.2.16. Simulation
- 1.2.17. Speech Processing/Technology
- 1.2.18. User Interfaces, Usability
- 1.2.19. Electronic Signature
- 1.2.20. Building Automation Software
- 1.2.21. Remote Control
- 1.2.22. Smart Appliances

### 1.3. IT and Telematics Applications

- 1.3.1. Applications for Health
- 1.3.2. Applications for Tourism
- 1.3.3. Applications for Transport and Logistics
- 1.3.4. ASP Application Service Providing
- 1.3.5. e-Government
- 1.3.6. Environment Management Systems & Documental Management Systems
- 1.3.7. GIS Geographical Information Systems
- 1.3.8. CRM - Customer relationship Management
- 1.3.9. Quality Management System
- 1.3.10. Maintenance Management System
- 1.3.11. Operation Planning and Scheduler System
- 1.3.12. Didactic System
- 1.3.13. ICM – Internet Content Management

- 1.3.14. Analysis Risk Management
- 1.3.15. Work Hygiene and Safety Management

### 1.4. Multimedia

- 1.4.1. Cultural Heritage
- 1.4.2. E-Learning
- 1.4.3. E-Publishing, Digital Content
- 1.4.4. Human Language Technologies
- 1.4.5. Information Filtering, Semantics, Statistics
- 1.4.6. Visualisation, Virtual Reality

### 1.5. Telecommunications, Networking

- 1.5.1. Audiovisual Equipment and Communication
- 1.5.2. Broadband Technologies
- 1.5.3. Mobile Communications
- 1.5.4. Narrow Band Technologies
- 1.5.5. Network Technology, Network Security
- 1.5.6. Radar
- 1.5.7. Research Networking, GRID
- 1.5.8. Satellite Technology/Systems/Positioning/Communication in GPS – Global Positioning System
- 1.5.9. Signal Processing
- 1.5.10. Hi-Fi
- 1.5.11. Description to Sound and Music Computing
- 1.5.12. Description Image/Video Computing
- 1.5.13. Communications Protocols, Interoperability
- 1.5.14. Residential Gateway

## 2. INDUSTRIAL MANUFACTURING, MATERIAL AND TRANSPORT TECHNOLOGIES

### 2.1. Design and Modelling/Prototypes

### 2.2. Industrial Manufacture

- 2.2.1. Cleaning (sandblasting, brushing)
- 2.2.2. Coatings
- 2.2.3. Drying
- 2.2.4. Erosion, Removal (spark erosion, flame cutting, laser/plasma cutting, electrochemical erosion, waterjet cutting)
- 2.2.5. Forming (rolling, forging, pressing, drawing)
- 2.2.6. Hardening, heat treatment
- 2.2.7. Joining techniques (riveting, screw driving, gluing)
- 2.2.8. Jointing (soldering, welding, sticking)
- 2.2.9. Machine Tools
- 2.2.10. Machining (turning, drilling, moulding, milling, planning, cutting)
- 2.2.11. Machining, fine (grinding, lapping)
- 2.2.12. Mixing (powder, etc.), separation (sorting, filtering)
- 2.2.13. Moulding, injection moulding, extrusion, sintering
- 2.2.14. Surface treatment (painting, galvano, polishing, CVD, PVD)

### 2.3. Process control and logistics

### 2.4. Plant Design and Maintenance

### 2.5. Packaging/Handling

- 2.5.1. Foil, films
- 2.5.2. Laminate
- 2.5.3. Packaging for machines
- 2.5.4. Packaging for materials
- 2.5.5. Plastic bags

### 2.6. Construction Technology

- 2.6.1. Building Materials, Components and Methods
- 2.6.2. Civil engineering
- 2.6.3. Construction Equipment
- 2.6.4. Fire Resistance/Safety
- 2.6.5. Mechanical Engineering, Hydraulics, Vibration and Acoustic Engineering related to construction technology
- 2.6.6. Pipeline Technology
- 2.6.7. Pulp Technology related to construction technology

- 2.6.8. Sensory/Multisensory Technology, Instrumentation related to construction technology
- 2.6.9. Simulation, Simulation Engineering
- 2.6.10. Sound Insulation
- 2.6.11. Vacuum/High Vacuum Technology
- 2.6.12. Gas Safety
- 2.6.13. Security

## **2.7. Materials Technology**

- 2.7.1. Adhesives
- 2.7.2. Building materials
- 2.7.3. Ceramic Materials and Powders
- 2.7.4. Colours and varnish
- 2.7.5. Composite materials
- 2.7.6. Fine Chemicals, Dyes and Inks
- 2.7.7. Glass
- 2.7.8. Iron and Steel, Steelworks
- 2.7.9. Materials Handling Technology (solids, fluids, gases)
- 2.7.10. Metals and Alloys
- 2.7.11. Non-ferrous Metals
- 2.7.12. Optical Materials
- 2.7.13. Paper technology
- 2.7.14. Plastics, Polymers
- 2.7.15. Properties of Materials, Corrosion/Degradation
- 2.7.16. Rubber
- 2.7.17. Stone
- 2.7.18. Advanced Textile Materials

## **2.8. Transport Infrastructure**

- 2.8.1. Air Transport
- 2.8.2. Intermodal Transport
- 2.8.3. Logistics
- 2.8.4. Railway Transport
- 2.8.5. Road Transport
- 2.8.6. Traffic Engineering/Control Systems
- 2.8.7. Transshipment Systems
- 2.8.8. Water Transport

## **2.9. Transport and Shipping Technologies**

- 2.9.1. Design of Vehicles
- 2.9.2. Hybrid and Electric Vehicles
- 2.9.3. Railway Vehicles
- 2.9.4. Road Vehicles
- 2.9.5. Shipbuilding
- 2.9.6. Traction/Propulsion Systems

## **2.10. Aerospace Technology**

- 2.10.1. Aeronautical technology/Avionics
- 2.10.2. Aircraft
- 2.10.3. Helicopter
- 2.10.4. Satellite Navigation Systems
- 2.10.5. Space Exploration and Technology

## **3. OTHER INDUSTRIAL TECHNOLOGIES**

### **3.1. Other Industrial Technologies**

- 3.1.1. Cleaning Technology

### **3.2. Process Plant Engineering**

### **3.3. Apparatus Engineering**

### **3.4. Chemical Technology and Engineering**

- 3.4.1. Agro chemicals
- 3.4.2. Anorganic Substances
- 3.4.3. Colours, dyes related to Chemical Technology and engineering
- 3.4.4. Electrical Engineering and Technology/Electrical Equipment
- 3.4.5. Man made fibres
- 3.4.6. Organic Substances
- 3.4.7. Pharmaceuticals
- 3.4.8. Plastics and Rubber related to Chemical Technology and engineering
- 3.4.9. Soaps, detergents
- 3.4.10. Special chemicals, intermediates
- 3.4.11. Care, Hygiene, Beauty

### **3.5. Textiles Technology**

- 3.5.1. Component adhesives for strengthening of seam
- 3.5.2. Dry filling related to Textiles Technology

- 3.5.3. Dyeing related to Textiles Technology
- 3.5.4. Finisher related to Textiles Technology
- 3.5.5. Non weaving related to Textiles Technology
- 3.5.6. Solvent based glues for strengthening of edges and seam
- 3.5.7. Thermoplastic textile fibres
- 3.5.8. Weaving related to Textiles Technology
- 3.5.9. Woven technical textiles for industrial applications

## **3.6. Footwear/Leather Technology**

- 3.6.1. Dry filling related to Footwear/Leather Technology
- 3.6.2. Dyes related to Footwear/Leather Technology
- 3.6.3. Tanned leather process related to Footwear/Leather Technology

## **3.7. Sound Engineering/Technology**

## **3.8. Mining Technologies**

## **3.9. Printing**

- 3.9.1. Flexography
- 3.9.2. Printed Reel Material

## **3.10. Household Goods & Appliances**

## **4. ENERGY**

### **4.1. Energy storage and transport**

- 4.1.1. Heat storage
- 4.1.2. Heat transport and supply, district heating
- 4.1.3. Storage of electricity, batteries
- 4.1.4. Transmission of electricity
- 4.1.5. Transport and storage of gas and liquid fuels
- 4.1.6. Transport and storage of hydrogen

### **4.2. Energy production, transmission and conversion**

- 4.2.1. Fuel cell, hydrogen production
- 4.2.2. Fuel liquefaction, gasification
- 4.2.3. Furnace technology, construction of heating boilers
- 4.2.4. Generators, electric engines and power converters
- 4.2.5. Heat exchangers
- 4.2.6. Heat pump, cooling technologies
- 4.2.7. Heating, ventilation
- 4.2.8. Turbines, fluid machinery, reciprocating engines, combined heat and power

### **4.3. Fossil Energy Sources**

- 4.3.1. Coal and Hydrocarbons
- 4.3.2. Gaseous fossil fuel
- 4.3.3. Solid fossil fuel
- 4.3.4. Liquid fossil fuel

### **4.4. Nuclear Fission/Nuclear Fusion**

### **4.5. Renewable Sources of Energy**

- 4.5.1. Gaseous biomass
- 4.5.2. Geothermal energy
- 4.5.3. Hydropower
- 4.5.4. Liquid biomass
- 4.5.5. Photovoltaics
- 4.5.6. Solar/Thermal energy
- 4.5.7. Solid biomass
- 4.5.8. Unconventional and Alternative Energies
- 4.5.9. Waste incineration
- 4.5.10. Wind energy

### **4.6. Rational use of energy**

- 4.6.1. Energy management
- 4.6.2. Lighting, illumination
- 4.6.3. Process optimisation, waste heat utilisation
- 4.6.4. Thermal insulation, energy efficiency in buildings

### **4.7. Other Energy Topics**

- 4.7.1. Combustion, Flames
- 4.7.2. Fuel Technology

## **5. PHYSICAL AND EXACT SCIENCES**

### **5.1. Astronomy**

### **5.2. Chemistry**

- 5.2.1. Analytical Chemistry
- 5.2.2. Computational Chemistry and Modelling
- 5.2.3. Inorganic Chemistry

- 5.2.4. Organic Chemistry
- 5.2.5. Petrochemistry, Petroleum Engineering

### 5.3. Earth Sciences

- 5.3.1. Geology, Geological Engineering, Geotechnics
- 5.3.2. Oceanography
- 5.3.3. Tectonics, Seismology

### 5.4. Mathematics, Statistics

- 5.4.1. Algorithms and Complexity
- 5.4.2. Mathematical modelling
- 5.4.3. Statistical Analysis

### 5.5. Meteorology/Climatology

- 5.5.1. Biosensor
- 5.5.2. Moisture sensors
- 5.5.3. Temperature monitoring

### 5.6. Physics

- 5.6.1. Acoustics
- 5.6.2. Astrophysics/Cosmology
- 5.6.3. Laser Technology
- 5.6.4. Nuclear Physics
- 5.6.5. Physics of Fluids
- 5.6.6. Sensors/Multisensor Technology, Instrumentation
- 5.6.7. Solid state physics
- 5.6.8. Thermodynamics
- 5.6.9. Vibration and Acoustic engineering
- 5.6.10. Optics

### 5.7. Mechanical Engineering

- 5.7.1. Micro-Mechanics

### 5.8. Hydraulics

### 5.9. Separation Technologies

- 5.9.1. Filtration and Membrane Processes
- 5.9.2. Extraction
- 5.9.3. Adsorption
- 5.9.4. Distillation
- 5.9.5. Sublimation
- 5.9.6. Other Processes

### 5.10. Micro- and Nanotechnology related to physical and exact sciences

## 6. BIOLOGICAL SCIENCES

### 6.1. Medicine, Human Health

- 6.1.1. Biostatistics, Epidemiology
- 6.1.2. Care and Health Services
- 6.1.3. Clinical Research, Trials
- 6.1.4. Cytology, Cancerology, Oncology
- 6.1.5. Dentistry/Odontology, Stomatology
- 6.1.6. Diagnostics, Diagnosis
- 6.1.7. Diseases
- 6.1.8. Environmental Medicine, Social Medicine, Sports Medicine
- 6.1.9. Gene - DNA Therapy
- 6.1.10. Gerontology and Geriatrics
- 6.1.11. Heart and blood circulation illnesses
- 6.1.12. Electromedical and Medical Equipment
- 6.1.13. Medical Research
- 6.1.14. Medical Technology/Biomedical Engineering
- 6.1.15. Neurology, Brain Research
- 6.1.16. Pharmaceutical Products/Drugs
- 6.1.17. Physiology
- 6.1.18. Surgery
- 6.1.19. Virus, Virology/Antibiotics/Bacteriology
- 6.1.20. Laboratory Equipment
- 6.1.21. Rescue and Emergency Equipment
- 6.1.22. Physiotherapy, Orthopaedic Technology
- 6.1.23. Single Use Products and Consumer Goods
- 6.1.24. Medical Textiles
- 6.1.25. Medical Furniture
- 6.1.26. Medical Biomaterials

### 6.2. Biology/Biotechnology

- 6.2.1. Biochemistry/Biophysics
- 6.2.2. Cellular and Molecular Biology
- 6.2.3. Enzymology/Protein Engineering/Fermentation
- 6.2.4. Genetic Engineering
- 6.2.5. In vitro Testing, Trials
- 6.2.6. Microbiology

- 6.2.7. Molecular design
- 6.2.8. Toxicology

### 6.3. Genome Research

- 6.3.1. Bioinformatics
- 6.3.2. Gene Expression, Proteom Research
- 6.3.3. Population genetics

### 6.4. Micro- and Nanotechnology related to Biological sciences

## 7. AGRICULTURE AND MARINE RESOURCES

### 7.1. Agriculture

- 7.1.1. Agriculture Machinery/Technology
- 7.1.2. Animal Production/Husbandry
- 7.1.3. Biocontrol
- 7.1.4. Crop Production
- 7.1.5. Horticulture
- 7.1.6. Pesticides
- 7.1.7. Precision agriculture
- 7.1.8. Seed coating
- 7.1.9. Veterinary Medicine

### 7.2. Sylviculture, Forestry, Forest technology

- 7.2.1. Forest technology
- 7.2.2. Paper Technology
- 7.2.3. Pulp Technology
- 7.2.4. Sylviculture, Forestry
- 7.2.5. Wood Products

### 7.3. Resources of the Sea, Fisheries

- 7.3.1. Aquaculture
- 7.3.2. Fish/Fisheries/Fishing Technology
- 7.3.3. Marine Science

## 8. AGROFOOD INDUSTRY

### 8.1. Technologies for the food industry

- 8.1.1. Drink Technology
- 8.1.2. Food Additives/Ingredients/Functional Food
- 8.1.3. Food Packaging/Handling
- 8.1.4. Food Processing
- 8.1.5. Food Technology

### 8.2. Food quality and safety

- 8.2.1. Detection and Analysis methods
- 8.2.2. Food Microbiology/Toxicology/Quality Control
- 8.2.3. Safe production methods
- 8.2.4. Tracability of food

### 8.3. Nutrition and Health

## 9. MEASUREMENTS AND STANDARDS

### 9.1. Measurement Tools

- 9.1.1. Acoustic Technology related to measurements
- 9.1.2. Analyses/Test Facilities and Methods
- 9.1.3. Chemical material testing
- 9.1.4. Electrical Technology related to measurements
- 9.1.5. Mechanical Technology related to measurements
- 9.1.6. Optical material testing
- 9.1.7. Optical Technology related to measurements
- 9.1.8. Other Non Destructive Testing
- 9.1.9. Sensor Technology related to measurements
- 9.1.10. Thermal material testing

### 9.2. Amplifier, A/D Transducer

### 9.3. Electronic measurement systems

### 9.4. Recording Devices

### 9.5. Reference Materials

### 9.6. Standards

- 9.6.1. Quality Standards
- 9.6.2. Technical Standards

## **10. PROTECTING MAN AND ENVIRONMENT**

### **10.1. Safety**

- 10.1.1. Acoustic safety
- 10.1.2. Assessment of Risk
- 10.1.3. Fire Safety Technology
- 10.1.4. Hazardous Materials
- 10.1.5. Radiation Protection

### **10.2. Environment**

- 10.2.1. Air Pollution/Treatment
- 10.2.2. Biodiversity
- 10.2.3. Ecology
- 10.2.4. Environmental Engineering/Technology
- 10.2.5. Measurement and Detection of Pollution
- 10.2.6. Natural Disasters
- 10.2.7. Remote sensing technology
- 10.2.8. Soil Pollution
- 10.2.9. Water Pollution/Treatment

### **10.3. Waste Management**

- 10.3.1. Biotreatment/Compost/Bioconversion
- 10.3.2. Incineration and Pyrolysis
- 10.3.3. Land and Sea Disposal
- 10.3.4. Recycling, Recovery
- 10.3.5. Radioactive Waste

## **11. SOCIAL AND ECONOMICS CONCERNS**

- 11.1. Socio-economic development models, economic aspects
- 11.2. Education and Training
- 11.3. Information and media, society
- 11.4. Technology, Society and Employment
- 11.5. Infrastructures for social sciences and humanities
- 11.6. Citizens participation
- 11.7. Foresight tools
- 11.8. Sports and Leisure