



ERC Panel Structure and Descriptors

12/12/2007

For the planning and operation of the evaluation of ERC grant proposals by panels, the following panel structure applies. There are 25 ERC panels to cover all fields of science, engineering and scholarship assigned to three research domains: Social Sciences and Humanities (6 Panels, SH1–SH6), Physical Sciences and Engineering (10 Panels, PE1–PE10), Life Sciences (9 Panels, LS1–LS9).

The panel names are accompanied by a list of panel descriptors indicating the fields of research covered by the respective ERC panels.

Social Sciences and Humanities

SH1 Individuals, institutions and markets: economics, finance and management

- SH1_1 Macroeconomics, growth, development, business cycles
- SH1_2 Microeconomics, institutional economics
- SH1_3 Econometrics, statistical methods
- SH1_4 Financial markets, banking and corporate finance
- SH1_5 Competitiveness, innovation, research and development
- SH1_6 Consumer behaviour, marketing
- SH1_7 Organization studies, strategy
- SH1_8 Human resource management, employment and earnings
- SH1_9 Public administration, public economics
- SH1_10 Income distribution, poverty
- SH1_11 International trade, economic geography

SH2 Institutions, values, beliefs and behaviour: sociology, social anthropology, political science, law, communication, social studies of science and technology

- SH2_1 Social structure, inequalities, social mobility
- SH2_2 Ageing, work, social policies
- SH2_3 Kinship, cultural dimensions of classification and cognition, individual and social identity, gender
- SH2_4 Myth, ritual, symbolic representations, religious studies
- SH2_5 Ethnography
- SH2_6 Globalization, migration, interethnic relations
- SH2_7 Transformation of societies, democratization, social movements
- SH2_8 Political systems, legitimacy of governance
- SH2_9 Legal systems, constitutions, foundations of law
- SH2_10 Private, public and social law



- SH2_11 Global and transnational governance, international law, human rights
- SH2_12 Communication networks, media, information society
- SH2_13 Social studies of science and technology, S&T policies, science and society
- SH2_14 History of science and technology

SH3 Environment and society: environmental studies, demography, social geography, urban and regional studies

- SH3_1 Environment and sustainability
- SH3_2 Environmental regulation and mediation
- SH3_3 Social and industrial ecology
- SH3_4 Geographical information systems, cartography
- SH3_5 Human and social geography
- SH3_6 Spatial and regional planning
- SH3_7 Population dynamics
- SH3_8 Urbanization and urban planning, cities
- SH3_9 Mobility and transportation

SH4 The Human Mind and its complexity: cognition, psychology, linguistics, philosophy and education

- SH4_1 Evolution of mind and cognitive functions, animal communication
- SH4_2 Human life-span development
- SH4_3 Neuropsychology and cognitive psychology
- SH4_4 Clinical and experimental psychology,
- SH4_5 Formal, cognitive, functional and computational linguistics
- SH4_6 Typological, historical and comparative linguistics
- SH4_7 Acquisition and knowledge of language: psycholinguistics, neurolinguistics
- SH4_8 Use of language: pragmatics, sociolinguistics, discourse analysis
- SH4_9 second language teaching and learning, language pathologies, lexicography, terminology
- SH4_10 Philosophy, history of philosophy
- SH4_11 Epistemology, logic, philosophy of science
- SH4_12 Ethics and morality, bioethics
- SH4_13 Education: principles, techniques, typologies

SH5 Cultures and cultural production: literature, visual and performing arts, music, cultural and comparative studies

- SH5_1 Classics
- SH5_2 History of literature
- SH5_3 Literary theory and comparative literature, literary styles
- SH5_4 Textual philology and palaeography
- SH5_5 Visual arts
- SH5_6 Performing arts
- SH5_7 Museums and exhibitions
- SH5_8 Numismatics, epigraphy
- SH5_9 Music and musicology, history of music



- SH5_10 History of art and architecture
- SH5_11 Cultural studies, cultural diversity
- SH5_12 Cultural memory, intangible cultural heritage

SH6 The study of the human past: archaeology, history and memory

- SH6_1 Archaeology, archaeometry, landscape archaeology
- SH6_2 Prehistory and protohistory
- SH6_3 Ancient history, ancient cultures
- SH6_4 Medieval history
- SH6_5 Modern and contemporary history
- SH6_6 Colonial history, entangled histories, global history
- SH6_7 Military history,
- SH6_8 Historiography, theory and methods of history
- SH6_9 History of ideas, intellectual history
- SH6_10 Social, economic, cultural and political history
- SH6_11 Collective memories, identities, lieux de mémoire, oral history
- SH6_12 Cultural heritage

Mathematics, physical sciences, information and communication, engineering, universe and earth sciences

PE1 Mathematical foundations: all areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics

- PE1_1 Logic and foundations
- PE1_2 Algebra
- PE1_3 Number theory
- PE1_4 Algebraic and complex geometry
- PE1_5 Geometry
- PE1_6 Topology
- PE1_7 Lie groups, Lie algebras
- PE1_8 Analysis
- PE1_9 Operator algebras and functional analysis
- PE1_10 ODE and dynamical systems
- PE1_11 Partial differential equations
- PE1_12 Mathematical physics
- PE1_13 Probability and statistics
- PE1_14 Combinatorics
- PE1_15 Mathematical aspects of computer science
- PE1_16 Numerical analysis and scientific computing
- PE1_17 Control theory and optimization
- PE1_18 Application of mathematics in sciences



PE2 Fundamental constituents of matter: particle, nuclear, plasma, atomic, molecular, gas, and optical physics

PE2_1 Fundamental interactions and fields

PE2_2 Particle physics

PE2_3 Nuclear physics

PE2_4 Nuclear astrophysics

PE2_5 Gas and plasma physics

PE2_6 Electromagnetism

PE2_7 Atomic, molecular physics

PE2_8 Optics and quantum optics

PE2_9 Lasers and laser physics

PE2_10 Acoustics

PE2_11 Relativity

PE2_12 Classical physics

PE2_13 Thermodynamics

PE2_14 Non-linear physics

PE2_15 General physics

PE2_16 Metrology and measurement

PE2_17 Statistical physics (gases)

PE3 Condensed matter physics: structure, electronic properties, fluids, nanosciences

PE3_1 Structure of solids and liquids

PE3_2 Mechanical and acoustical properties of condensed matter

PE3_3 Thermal properties of condensed matter

PE3_4 Transport properties of condensed matter,

PE3_5 Electronic properties of materials and transport

PE3_6 Lattice dynamics

PE3_7 Semiconductors

PE3_8 Superconductivity

PE3_9 Superfluids

PE3_10 Spintronics

PE3_11 Magnetism

PE3_12 Nanophysics: nanoelectronics, nanophotonics, nanomagnetism

PE3_13 Mesoscopic physics

PE3_14 Molecular electronics

PE3_15 Soft condensed matter (liquid crystals...)

PE3_16 Fluid dynamics (physics)

PE3_17 Statistical physics (condensed matter)

PE3_18 Phase transitions, phase equilibria

PE3_19 Biophysics



PE4 Physical and Analytical Chemical sciences: analytical chemistry, chemical theory, physical chemistry/chemical physics

- PE4_1 Physical chemistry
- PE4_2 Nanochemistry
- PE4_3 Spectroscopic and spectrometric techniques
- PE4_4 Molecular architecture and Structure
- PE4_5 Surface science
- PE4_6 Analytical chemistry
- PE4_7 Chemical physics
- PE4_8 Chemical instrumentation
- PE4_9 Electrochemistry, electrodialysis, microfluidics
- PE4_10 Combinatorial chemistry
- PE4_11 Method development in chemistry
- PE4_12 Catalysis
- PE4_13 Physical chemistry of biological systems
- PE4_14 Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions
- PE4_15 Theoretical and computational chemistry
- PE4_16 Radiation chemistry
- PE4_17 Nuclear chemistry
- PE4_18 Photochemistry

PE5 Materials and Synthesis: materials synthesis, structure-properties relations, functional and advanced materials, molecular architecture, organic chemistry

- PE5_1 Structural properties of materials
- PE5_2 Solid state materials
- PE5_3 Surface modification
- PE5_4 Thin films
- PE5_5 Corrosion
- PE5_6 Porous materials
- PE5_7 Ionic liquids
- PE5_8 New materials: oxides, alloys, composite, organic-inorganic hybrid, superconductors
- PE5_9 Materials for sensors
- PE5_10 Nanomaterials: nanoparticles, nanotubes
- PE5_11 Biomaterials synthesis
- PE5_12 Intelligent materials – self assembled materials
- PE5_13 Environment chemistry
- PE5_14 Coordination chemistry
- PE5_15 Colloid chemistry
- PE5_16 Biological chemistry
- PE5_17 Chemistry of condensed matter
- PE5_18 Homogeneous and heterogeneous catalysis
- PE5_19 Characterization methods of materials
- PE5_20 Macromolecular chemistry,



- PE5_21 Polymer chemistry
- PE5_22 Supramolecular chemistry
- PE5_23 Organic chemistry
- PE5_24 Molecular chemistry

PE6 Computer science and informatics: informatics and information systems, computer science, scientific computing, intelligent systems

- PE6_1 Computer architecture
- PE6_2 Database management
- PE6_3 Formal methods
- PE6_4 Graphics and image processing
- PE6_5 Human computer interaction and interface
- PE6_6 Informatics and information systems
- PE6_7 Theoretical computer science including quantum information
- PE6_8 Intelligent systems
- PE6_9 Scientific computing
- PE6_10 Modelling tools
- PE6_11 Multimedia
- PE6_12 Parallel and Distributed Computing
- PE6_13 Speech recognition
- PE6_14 Systems and software

PE7 Systems and communication engineering: electronic, communication, optical and systems engineering

- PE7_1 Control engineering
- PE7_2 Electrical and electronic engineering: semiconductors, components, systems
- PE7_4 Simulation engineering and modelling
- PE7_5 Systems engineering, sensorics, actorics, automation
- PE7_6 Micro- and nanoelectronics, optoelectronics
- PE7_7 Communication technology, high-frequency technology
- PE7_8 Signal processing
- PE7_9 Networks
- PE7_10 Man-machine-interfaces
- PE7_11 Robotics

PE8 Products and process engineering: product design, process design and control, construction methods, civil engineering, energy systems, material engineering

- PE8_1 Aerospace engineering
- PE8_2 Chemical engineering, technical chemistry
- PE8_3 Civil engineering, maritime/hydraulic engineering, geotechnics, waste treatment
- PE8_4 Computational engineering
- PE8_5 Fluid mechanics, hydraulic-, turbo-, and piston engines
- PE8_6 Energy systems (production, distribution, application)
- PE8_7 Micro(system) engineering,



PE8_8 Mechanical and manufacturing engineering (shaping, mounting, joining, separation)
PE8_9 Materials engineering (biomaterials, metals, ceramics, polymers, composites, ...)
PE8_10 Production technology, process engineering
PE8_11 Product design, ergonomics, man-machine interfaces
PE8_12 Lightweight construction, textile technology
PE8_13 Industrial bioengineering
PE8_14 Industrial biofuel production

PE9 Universe sciences: astro-physics/chemistry/biology; solar system; stellar, galactic and extragalactic astronomy, planetary systems, cosmology; space science, instrumentation

PE9_1 Solar and interplanetary physics
PE9_2 Planetary systems sciences
PE9_3 Interstellar medium
PE9_4 Formation of stars and planets
PE9_5 Astrobiology
PE9_6 Stars and stellar systems
PE9_7 The Galaxy
PE9_8 Formation and evolution of galaxies
PE9_9 Clusters of galaxies and large scale structures
PE9_10 High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos
PE9_11 Relativistic astrophysics
PE9_12 Dark matter, dark energy
PE9_13 Gravitational astronomy
PE9_14 Cosmology
PE9_15 Space Sciences
PE9_16 Very large data bases: archiving, handling and analysis
PE9_17 Instrumentation - telescopes, detectors and techniques
PE9_18 Solar planetology

PE10 Earth system science: physical geography, geology, geophysics, meteorology, oceanography, climatology, ecology, global environmental change, biogeochemical cycles, natural resources management

PE10_1 Atmospheric chemistry, atmospheric composition, air pollution
PE10_2 Meteorology, atmospheric physics and dynamics
PE10_3 Climatology and climate change
PE10_4 Terrestrial ecology, land cover change,
PE10_5 Geology, tectonics, volcanology,
PE10_6 Paleoclimatology, paleoecology
PE10_7 Physics of earth's interior, seismology, volcanology
PE10_8 Oceanography (physical, chemical, biological)
PE10_9 Biogeochemistry, biogeochemical cycles, environmental chemistry
PE10_10 Mineralogy, petrology, igneous petrology, metamorphic petrology
PE10_11 Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics,



PE10_13 Sedimentology, soil science, palaeontology, earth evolution
PE10_14 Physical geography
PE10_15 Earth observations from space/remote sensing
PE10_16 Geomagnetism, paleomagnetism
PE10_17 Ozone, upper atmosphere, ionosphere
PE10_18 Hydrology, water and soil pollution

Life Sciences

LS1 Molecular and Structural Biology and Biochemistry: molecular biology, biochemistry, biophysics, structural biology, biochemistry of signal transduction

LS1_1 Molecular biology and interactions
LS1_2 General biochemistry and metabolism
LS1_3 DNA biosynthesis, modification, repair and degradation
LS1_4 RNA synthesis, processing, modification and degradation
LS1_5 Protein synthesis, modification and turnover
LS1_6 Biophysics
LS1_7 Structural biology (crystallography, NMR, EM)
LS1_8 Biochemistry of signal transduction

LS2 Genetics, Genomics, Bioinformatics and Systems Biology: genetics, population genetics, molecular genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology

LS2_1 Genomics, comparative genomics, functional genomics
LS2_2 Transcriptomics
LS2_3 Proteomics
LS2_4 Metabolomics
LS2_5 Glycomics
LS2_6 Molecular genetics, reverse genetics and RNAi
LS2_7 Quantitative genetics
LS2_8 Epigenetics and gene regulation
LS2_9 Genetic epidemiology
LS2_10 Bioinformatics
LS2_11 Computational biology
LS2_12 Biostatistics
LS2_13 Systems biology
LS2_14 Biological systems analysis, modelling and simulation

LS3 Cellular and Developmental Biology: cell biology, cell physiology, signal transduction, organogenesis, developmental genetics, pattern formation in plants and animals

LS3_1 Morphology and functional imaging of cells
LS3_2 Cell biology and molecular transport mechanisms
LS3_3 Cell cycle and division



- LS3_4 Apoptosis
- LS3_5 Cell differentiation, physiology and dynamics
- LS3_6 Organelle biology
- LS3_7 Cell signalling and cellular interactions
- LS3_8 Signal transduction
- LS3_9 Development, developmental genetics, pattern formation and embryology in animals
- LS3_10 Development, developmental genetics, pattern formation and embryology in plants
- LS3_11 Cell genetics
- LS3_12 Stem cell biology

LS4 Physiology, Pathophysiology and Endocrinology: organ physiology, pathophysiology, endocrinology, metabolism, ageing, regeneration, tumorigenesis, cardiovascular disease, metabolic syndrome

- LS4_1 Organ physiology
- LS4_2 Comparative physiology
- LS4_3 Endocrinology
- LS4_4 Ageing
- LS4_5 Metabolism, biological basis of metabolism related disorders
- LS4_6 Cancer and its biological basis
- LS4_7 Cardiovascular diseases
- LS4_8 Non-communicable diseases (except for neural/psychiatric, immunity-related, metabolism-related disorders, cancer and cardiovascular diseases)

LS5 Neurosciences and neural disorders: neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, neurological disorders, psychiatry

- LS5_1 Neuroanatomy and neurosurgery
- LS5_2 Neurophysiology
- LS5_3 Neurochemistry and neuropharmacology
- LS5_4 Sensory systems (e.g. visual system, auditory system)
- LS5_5 Mechanisms of pain
- LS5_6 Developmental neurobiology
- LS5_7 Cognition (e.g. learning, memory, emotions, speech)
- LS5_8 Behavioral neuroscience (e.g. sleep, consciousness, handedness)
- LS5_9 Systems neuroscience
- LS5_10 Neuroimaging and computational neuroscience
- LS5_11 Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's disease)
- LS5_12 Psychiatric disorders (e.g. schizophrenia, autism, Tourette's syndrome, obsessive-compulsive disorder, depression, bipolar disorder, attention deficit hyperactivity disorder)

LS6 Immunity and infection: immunobiology, aetiology of immune disorders, microbiology, virology, parasitology, global and other infectious diseases, population dynamics of infectious diseases, veterinary medicine

- LS6_1 Innate immunity
- LS6_2 Adaptive immunity
- LS6_3 Phagocytosis and cellular immunity



- LS6_4 Immunosignalling
- LS6_5 Immunological memory and tolerance
- LS6_6 Immunogenetics
- LS6_7 Microbiology
- LS6_8 Virology
- LS6_9 Bacteriology
- LS6_10 Parasitology
- LS6_11 Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)
- LS6_12 Biological basis of immunity related disorders
- LS6_13 Veterinary medicine

LS7 Diagnostic tools, therapies and public health: aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics

- LS7_1 Medical engineering and technology
- LS7_2 Diagnostic tools (e.g. genetic, imaging)
- LS7_3 Pharmacology, pharmacogenomics, drug discovery and design, drug therapy
- LS7_4 Analgesia
- LS7_5 Toxicology
- LS7_6 Gene therapy, stem cell therapy, regenerative medicine
- LS7_7 Surgery
- LS7_8 Radiation therapy
- LS7_9 Health services, health care research
- LS7_10 Public health and epidemiology
- LS7_11 Environment and health risks including radiation
- LS7_12 Occupational medicine
- LS7_13 Medical ethics

LS8 Evolutionary, population and environmental biology: evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, eco-toxicology, prokaryotic biology

- LS8_1 Ecology (theoretical, community, population, microbial, evolutionary ecology)
- LS8_2 Population biology, population dynamics, population genetics, plant-animal interactions
- LS8_3 Systems eEvolution, biological adaptation, phylogenetics, systematics
- LS8_4 Biodiversity, comparative biology
- LS8_5 Conservation biology, ecology, genetics
- LS8_6 Biogeography
- LS8_7 Animal behaviour (behavioural ecology, animal communication)
- LS8_8 Environmental and marine biology
- LS8_9 Environmental toxicology
- LS8_10 Prokaryotic biology
- LS8_11 Symbiosis



LS9 Applied life sciences and biotechnology: agricultural, animal, fishery, forestry and food sciences; biotechnology, chemical biology, genetic engineering, synthetic biology, industrial biosciences; environmental biotechnology and remediation

LS9_1 Genetic engineering, transgenic organisms, recombinant proteins, biosensors

LS9_2 Synthetic biology and new bio-engineering concepts

LS9_3 Agriculture related to animal husbandry, dairying, livestock raising

LS9_4 Aquaculture, fisheries

LS9_5 Agriculture related to crop production, soil biology and cultivation, applied plant biology

LS9_6 Food sciences

LS9_7 Forestry, biomass production (e.g. for biofuels)

LS9_8 Environmental biotechnology, bioremediation, biodegradation

LS9_9 Biotechnology, bioreactors, applied microbiology

LS9_10 Biomimetics

LS9_11 Biohazards, biological containment, biosafety, biosecurity