

ANNEX 1: ERC PEER REVIEW EVALUATION PANELS (ERC PANELS)

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 (i.e. ERC keywords) indicating the fields of research covered by the respective ERC panels.

The panel descriptors must always be read in the overall context of the panel's titles and sub-titles.

Social Sciences and Humanities

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

- SH1_1 Macroeconomics, business cycles
- SH1_2 Development, economic growth
- SH1_3 Microeconomics, institutional economics
- SH1_4 Econometrics, statistical methods
- SH1_5 Financial markets, asset prices, international finance
- SH1_6 Banking, corporate finance, accounting
- SH1_7 Competitiveness, innovation, research and development
- SH1_8 Consumer choice, behavioural economics, marketing
- SH1_9 Organization studies, strategy
- SH1_10 Human resource management, labour economics
- SH1_11 Public economics, political economics, public administration
- SH1_12 Income distribution, poverty
- SH1_13 International trade, economic geography
- SH1_14 History of economics and economic thought, quantitative and institutional economic history

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, interethnic relations
- SH2_2 Ageing, work, social policies, welfare
- SH2_3 Kinship, cultural dimensions of classification and cognition, identity, gender
- SH2_4 Myth, ritual, symbolic representations, religious studies
- SH2_5 Democratization, social movements
- SH2_6 Violence, conflict and conflict resolution
- SH2_7 Political systems and institutions, governance
- SH2_8 Legal theory, legal systems, constitutions, comparative law
- SH2_9 Global and transnational governance, international studies, human rights
- SH2_10 Communication networks, media, information society
- SH2_11 Social studies of science and technology, science, technology and innovation policies

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

- SH3_1 Environment, resources and sustainability
- SH3_2 Environmental change and society
- SH3_3 Environmental regulations and climate negotiations
- SH3_4 Social and industrial ecology
- SH3_5 Population dynamics, health and society
- SH3_6 Families and households
- SH3_7 Migration
- SH3_8 Mobility, tourism, transportation and logistics
- SH3_9 Spatial development, land use, regional planning
- SH3_10 Urbanization, cities and rural areas
- SH3_11 Infrastructure, human and political geography, settlements
- SH3_12 Geo-information and spatial data analysis

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 clinical psychology
- SH4_4 Cognitive and experimental psychology: perception, action, and higher cognitive processes
- SH4_5 Linguistics: formal, cognitive, functional and computational linguistics
- SH4_6 Linguistics: typological, historical and comparative linguistics
- SH4_7 Psycholinguistics and neurolinguistics: acquisition and knowledge of language, language pathologies
- SH4_8 Use of language: pragmatics, sociolinguistics, discourse analysis, second language teaching and learning, lexicography, terminology
- SH4_9 Philosophy, history of philosophy
- SH4_10 Epistemology, logic, philosophy of science
- SH4_11 Ethics and morality, bioethics
- SH4_12 Education: systems and institutions, teaching and learning

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

- SH5_1 Classics, ancient Greek and Latin literature and art
- 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 Music and musicology, history of music
- SH5_9 History of art and history of architecture
- SH5_10 Cultural studies, cultural diversity
- SH5_11 Cultural heritage, cultural memory

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
SH6_4	Medieval history
SH6_5	Early modern history
SH6_6	Modern and contemporary history
SH6_7	Colonial and post-colonial history, global and transnational history
SH6_8	Social and economic history
SH6_9	History of ideas, intellectual history, history of sciences and techniques
SH6_10	Cultural history
SH6_11	History of collective identities and memories, history of gender
SH6_12	Historiography, theory and methods of history

Physical Sciences and Engineering

PE1 Mathematics: 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	Theoretical aspects of partial differential equations
PE1_12	Mathematical physics
PE1_13	Probability
PE1_14	Statistics
PE1_15	Discrete mathematics and combinatorics
PE1_16	Mathematical aspects of computer science
PE1_17	Numerical analysis
PE1_18	Scientific computing and data processing
PE1_19	Control theory and optimization
PE1_20	Application of mathematics in sciences
PE1_21	Application of mathematics in industry and society life

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	Ultra-cold atoms and molecules
PE2_9	Optics, non-linear optics and nano-optics
PE2_10	Quantum optics and quantum information

- PE2_11 Lasers, ultra-short lasers and laser physics
- PE2_12 Acoustics
- PE2_13 Relativity
- PE2_14 Thermodynamics
- PE2_15 Non-linear physics
- PE2_16 General physics
- PE2_17 Metrology and measurement
- PE2_18 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, material growth, physical properties
- PE3_8 Superconductivity
- PE3_9 Superfluids
- PE3_10 Spintronics
- PE3_11 Magnetism
- PE3_12 Electro-optics
- PE3_13 Nanophysics: nanoelectronics, nanophotonics, nanomagnetism
- PE3_14 Mesoscopic physics
- PE3_15 Molecular electronics
- PE3_16 Soft condensed matter (liquid crystals...)
- PE3_17 Fluid dynamics (physics)
- PE3_18 Statistical physics (condensed matter)
- PE3_19 Phase transitions, phase equilibria
- PE3_20 Biophysics

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

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

- PE4_17 Corrosion
- PE4_18 Characterization methods of materials

PE5 Synthetic chemistry and materials: 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 Ionic liquids
- PE5_6 New materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles
- PE5_7 Biomaterials synthesis
- PE5_8 Intelligent materials – self assembled materials
- PE5_9 Environment chemistry
- PE5_10 Coordination chemistry
- PE5_11 Colloid chemistry
- PE5_12 Biological chemistry
- PE5_13 Chemistry of condensed matter
- PE5_14 Homogeneous catalysis
- PE5_15 Macromolecular chemistry
- PE5_16 Polymer chemistry
- PE5_17 Supramolecular chemistry
- PE5_18 Organic chemistry
- PE5_19 Molecular chemistry
- PE5_20 Combinatorial chemistry

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

- PE6_1 Computer architecture, pervasive computing, ubiquitous computing
- PE6_2 Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyber-physical systems
- PE6_3 Software engineering, operating systems, computer languages
- PE6_4 Theoretical computer science, formal methods, and quantum computing
- PE6_5 Cryptology, security, privacy, quantum crypto
- PE6_6 Algorithms, distributed, parallel and network algorithms, algorithmic game theory
- PE6_7 Artificial intelligence, intelligent systems, multi agent systems
- PE6_8 Computer graphics, computer vision, multi media, computer games
- PE6_9 Human computer interaction and interface, visualization and natural language processing
- PE6_10 Web and information systems, database systems, information retrieval and digital libraries
- PE6_11 Machine learning, statistical data processing and applications using signal processing (eg. speech, image, video)
- PE6_12 Scientific computing, simulation and modelling tools
- PE6_13 Bioinformatics, biocomputing, and DNA and molecular computation

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_3 Simulation engineering and modelling
- PE7_4 Systems engineering, sensorics, actorics, automation
- PE7_5 Micro- and nanoelectronics, optoelectronics
- PE7_6 Communication technology, high-frequency technology
- PE7_7 Signal processing
- PE7_8 Networks (communication networks, sensor networks, networks of robots.....)
- PE7_9 Man-machine-interfaces
- PE7_10 Robotics

PE8 Products and processes 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 Sustainable design (for recycling, for environment, eco-design)
- PE8_13 Lightweight construction, textile technology
- PE8_14 Industrial bioengineering
- PE8_15 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

PE10 Earth system science: physical geography, geology, geophysics, atmospheric sciences, 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, geological)
- PE10_9 Biogeochemistry, biogeochemical cycles, environmental chemistry
- PE10_10 Mineralogy, petrology, igneous petrology, metamorphic petrology
- PE10_11 Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics
- PE10_12 Sedimentology, soil science, palaeontology, earth evolution
- PE10_13 Physical geography
- PE10_14 Earth observations from space/remote sensing
- PE10_15 Geomagnetism, paleomagnetism
- PE10_16 Ozone, upper atmosphere, ionosphere
- PE10_17 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 synthesis, modification, repair, recombination 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 neurophysiology
- LS5_2 Molecular and cellular neuroscience
- 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, ecotoxicology, 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 evolution, 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 (non-medical), bioreactors, applied microbiology

LS9_10 Biomimetics

LS9_11 Biohazards, biological containment, biosafety, biosecurity