ANEXA 4 – Domenii științifice ERC

ANEXA 4.1 – Domenii științifice ERC – 2014

Domain Code:	**SH**
Subdomain Code:	**SH1, SH2, SH3, SH4, SH5, SH6**
Research Area Code:	**SH1_1...SH1_15, SH2_1...SH2_10,.....**

DOMAIN
SOCIAL SCIENCES AND HUMANITIES

SH1	**Markets, Individuals and Institutions:** Economics, finance and management
SH1_1	Macroeconomics; monetary economics
SH1_2	International trade, international business, development, economic growth
SH1_3	Econometrics, game theory, experimental design, operations research
SH1_4	Labour economics; institutional economics
SH1_5	Political economy, public economics
SH1_6	Microeconomics, behavioural economics
SH1_7	Industrial organisation
SH1_8	Strategy; entrepreneurship
SH1_9	Technological change, innovation, research & development
SH1_10	Financial markets, asset prices, international finance
SH1_11	Banking, corporate finance, accounting, auditing, insurance
SH1_12	Marketing
SH1_13	Management; operations management
SH1_14	Organisational behaviour; human resource management
SH1_15	History of economic thought, quantitative economic history
SH2	**The Social World, Diversity and Common Ground:** Sociology, social anthropology, political science, law, communication, science and technology studies
SH2_1	Social structure, inequalities, social mobility
SH2_2	Diversity and identities, gender, interethnic relations
SH2_3	Social policies, welfare and educational systems
SH2_4	Democratisation, social movements, social integration
SH2_5	Political systems and institutions, governance
SH2_6	Conflict and conflict resolution, violence
SH2_7	Legal studies, constitutions, human rights, comparative law
SH2_8	International relations, global and transnational governance
SH2_9	Communication and information, networks, media
SH2_10	Social studies of science and technology
SH3	**Environment, Space and Population:** Sustainability science, demography, geography, regional studies and planning
SH3_1	Sustainability sciences, environment and resources
SH3_2	Environmental and climate change, societal impact
SH3_3	Environmental and climate policy
SH3_4	Population dynamics; households, family and fertility
SH3_5	Health, ageing and society
SH3_6	Transportation and logistics, tourism
SH3_7	Spatial development, land use, regional planning
SH3_8	Urban, regional and rural studies
SH3_9	Human and social geography
SH3_10	Geographic information systems, spatial data analysis

SH4	**The Human Mind and Its Complexity:** Cognitive science, psychology, linguistics, philosophy of mind, education
SH4_1	Evolution of mind and cognitive functions, animal communication
SH4_2	Human life-span development
SH4_3	Neuropsychology
SH4_4	Cognitive and experimental psychology: perception, action, and higher cognitive processes
SH4_5	Social psychology
SH4_6	Clinical psychology
SH4_7	Formal, cognitive, functional and computational linguistics
SH4_8	Historical, typological, and comparative linguistics
SH4_9	Origin and acquisition of language and languages, language pathologies
SH4_10	Pragmatics, sociolinguistics, discourse analysis, second language learning
SH4_11	Philosophy of mind, epistemology and logic
SH4_12	Education, teaching and learning
SH5	**Cultures and Cultural Production:** Literature, philology, cultural studies, arts, philosophy
SH5_1	Classics, ancient literature and art
SH5_2	Theory and history of literature, comparative literature
SH5_3	Philology and palaeography
SH5_4	Visual and performing arts, design, arts-based research
SH5_5	Music and musicology; history of music
SH5_6	History of art and architecture
SH5_7	Museums, exhibitions, conservation and restoration
SH5_8	Cultural studies, symbolic representation, religious studies
SH5_9	Transregional studies
SH5_10	Cultural heritage, cultural identities and memories
SH5_11	Philosophy and history of philosophy
SH6	**The Study of the Human Past:** Archaeology and history
SH6_1	Historiography, theory and methods of history
SH6_2	Archaeology, archaeometry, landscape archaeology
SH6_3	Prehistory, palaeoanthropology, palaeodemography
SH6_4	Ancient history
SH6_5	Medieval history
SH6_6	Early modern history
SH6_7	Modern and contemporary history
SH6_8	Colonial and post-colonial history
SH6_9	Global history, transnational history, comparative history, entangled histories
SH6_10	Social and economic history
SH6_11	Gender history, history of collective identities and memories
SH6_12	History of ideas, intellectual and cultural history
SH6_13	History of science and technology

Anexa 4.1 – Domenii științifice ERC – 2014

Domain Code:	**PE**
Subdomain Code:	**PE1, PE2, PE3, PE4, PE5, PE6, PE7, PE8, PE9, PE10**
Research Area Code:	**PE1_1...PE1_21, PE2_1...PE2_18,.....**

DOMAIN
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 optimisation
PE1_20	Application of mathematics in sciences
PE1_21	Application of mathematics in industry and society
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, biophysics
PE3_1	Structure of solids and liquids
PE3_2	Mechanical and acoustical properties of condensed matter, Lattice dynamics
PE3_3	Transport properties of condensed matter
PE3_4	Electronic properties of materials, surfaces, interfaces, nanostructures, etc.
PE3_5	Semiconductors and insulators: material growth, physical properties
PE3_6	Macroscopic quantum phenomena: superconductivity, superfluidity, etc.
PE3_7	Spintronics
PE3_8	Magnetism and strongly correlated systems
PE3_9	Condensed matter – beam interactions (photons, electrons, etc.)
PE3_10	Nanophysics: nanoelectronics, nanophotonics, nanomagnetism, nanoelectromechanics, etc.
PE3_11	Mesoscopic physics
PE3_12	Molecular electronics
PE3_13	Structure and dynamics of disordered systems: soft matter (gels, colloids, liquid crystals, etc.), glasses, defects, etc.
PE3_14	Fluid dynamics (physics)
PE3_15	Statistical physics: phase transitions, noise and fluctuations, models of complex systems, etc.
PE3_16	Physics of biological systems
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 and Nuclear chemistry
PE4_15	Photochemistry
PE4_16	Corrosion
PE4_17	Characterisation methods of materials
PE4_18	Environment chemistry
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	Coordination chemistry
PE5_10	Colloid chemistry
PE5_11	Biological chemistry
PE5_12	Chemistry of condensed matter
PE5_13	Homogeneous catalysis
PE5_14	Macromolecular chemistry
PE5_15	Polymer chemistry
PE5_16	Supramolecular chemistry
PE5_17	Organic chemistry
PE5_18	Molecular chemistry
PE5_19	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, visualisation and natural language processing
PE6_10	Web and information systems, database systems, information retrieval and digital libraries, data fusion
PE6_11	Machine learning, statistical data processing and applications using signal processing (e.g. 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 system engineering
PE7_3	Simulation engineering and modelling
PE7_4	Systems engineering, sensorics, actorics, automation
PE7_5	Micro- and nanoelectronics, optoelectronics and photonics
PE7_6	Communication technology, high-frequency technology
PE7_7	Signal processing
PE7_8	Networks (communication networks, sensor networks, networks of robots, etc.)
PE7_9	Man-machine-interfaces
PE7_10	Robotics
PE7_11	Components and systems for applications in medicine, biology and the environment, etc.
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, etc.)
PE8_10	Production technology, process engineering
PE8_11	Industrial design (product design, ergonomics, man-machine interfaces, etc.)
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
PE8_16	Architectural engineering
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, cryology, 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	Palaeoclimatology, palaeoecology
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, palaeomagnetism
PE10_16	Ozone, upper atmosphere, ionosphere
PE10_17	Hydrology, water and soil pollution
PE10_18	Cryosphere, dynamics of snow and ice cover, sea ice, permafrosts and ice sheets

Anexa 4.1 – Domenii științifice ERC – 2014

Domain Code:	**LS**
Subdomain Code:	**LS1, LS2, LS3, LS4, LS5, LS6, LS7, LS8, LS9**
Research Area Code:	**LS1_1...LS1_11, LS2_1...LS2_14,.....**

DOMAIN
LIFE SCIENCES

LS1	**Molecular and Structural Biology and Biochemistry:** Molecular synthesis, modification and interaction, biochemistry, biophysics, structural biology, metabolism, signal transduction
LS1_1	Molecular 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	Lipid synthesis, modification and turnover
LS1_7	Carbohydrate synthesis, modification and turnover
LS1_8	Biophysics (e.g. transport mechanisms, bioenergetics, fluorescence)
LS1_9	Structural biology (crystallography and EM)
LS1_10	Structural biology (NMR)
LS1_11	Biochemistry and molecular mechanisms of signal transduction
LS2	**Genetics, Genomics, Bioinformatics and Systems Biology:** Molecular and population 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, stem cell biology
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, tumorigenesis, cardiovascular disease, metabolic syndrome
LS4_1	Organ physiology and pathophysiology
LS4_2	Comparative physiology and pathophysiology
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 and psychiatric disorders
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	Behavioural 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:** The immune system and related disorders, infectious agents and diseases, prevention and treatment of infection
LS6_1	Innate immunity and inflammation
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 (e.g. autoimmunity)
LS6_13	Veterinary medicine and infectious diseases in animals
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 and Surgery
LS7_5	Toxicology

LS7_6	Gene therapy, cell therapy, regenerative medicine
LS7_7	Radiation therapy
LS7_8	Health services, health care research
LS7_9	Public health and epidemiology
LS7_10	Environment and health risks, occupational medicine
LS7_11	Medical ethics
LS8	**Evolutionary, Population and Environmental Biology:** Evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, eco-toxicology, microbial ecology
LS8_1	Ecology (theoretical and experimental; population, species and community level)
LS8_2	Population biology, population dynamics, population genetics
LS8_3	Systems evolution, biological adaptation, phylogenetics, systematics, comparative biology
LS8_4	Biodiversity, conservation biology, conservation genetics, invasion biology
LS8_5	Evolutionary biology: evolutionary ecology and genetics, co-evolution
LS8_6	Biogeography, macro-ecology
LS8_7	Animal behaviour
LS8_8	Environmental and marine biology
LS8_9	Environmental toxicology at the population and ecosystems level
LS8_10	Microbial ecology and evolution
LS8_11	Species interactions (e.g. food-webs, symbiosis, parasitism, mutualism)
LS9	**Applied Life Sciences and Non-Medical Biotechnology:** Agricultural, animal, fishery, forestry and food sciences, biotechnology, genetic engineering, synthetic and chemical biology, industrial biosciences; environmental biotechnology and remediation
LS9_1	Non-medical biotechnology and genetic engineering (including transgenic organisms, recombinant proteins, biosensors, bioreactors, microbiology)
LS9_2	Synthetic biology, chemical biology and bio-engineering
LS9_3	Animal sciences (including animal husbandry, aquaculture, fisheries, animal welfare)
LS9_4	Plant sciences (including crop production, plant breeding, agroecology, soil biology)
LS9_5	Food sciences (including food technology, nutrition)
LS9_6	Forestry and biomass production (including biofuels)
LS9_7	Environmental biotechnology (including bioremediation, biodegradation)
LS9_8	Biomimetics
LS9_9	Biohazards (including biological containment, biosafety, biosecurity)