NARODOWE CENTRUM NAUKI

Annex no 1 to resolution no 52/2018 of the Council of the NCN of 7th June 2018

LIST OF DISCIPLINES
FOR POLISH-CHINESE RESEARCH PROJECTS
WITHIN THE SHENG 1 CALL

Arts, Humanities and Social Sciences

HS4	**Individuals, institutions, markets: economics, finance, management, demography, social and economic geography, urban studies, e.g.:**
HS4_1	Macroeconomics (incl. economic balance, economic growth, business cycles in global economy, labour economics)
HS4_2	Microeconomics, institutional economics
HS4_3	Econometrics, statistical methods
HS4_4	Population dynamics, demographic processes
HS4_5	Resources and sustainable development
HS4_6	Financial markets, international finance, public finance
HS4_7	Banking, corporate finance, accounting
HS4_8	Behavioral economics, consumption and consumer behavior, marketing
HS4_9	Organization studies, strategic management, concepts and methods of management, logistics
HS4_10	Human resource management, employment and salaries
HS4_11	Public economics, social infrastructure, public administration
HS4_12	Living conditions and standards, income distribution, poverty
HS4_13	International economics
HS4_14	Human and social geography
HS4_15	Land management, urban studies
HS4_16	Other related subjects
HS6	**Human nature and human society: psychology, pedagogy/education studies, sociology, e.g.:**
HS6_1	General psychology (cognitive processes, emotions, motivations, personality, individual differences), experimental psychology, psycholinguistics
HS6_2	Social, political, environmental and intercultural psychology
HS6_3	Clinical, health, correctional, rehabilitation psychology; clinical neuropsychology
HS6_4	Psychology of development, family, parenting, education

HS6_5	Evolutionary and comparative psychology, genetics of behaviour, psychophysiology, neuropsychology
HS6_6	Economic psychology, psychology of labour, organization, marketing and advertising
HS6_7	History of psychology, methodology, psychometrics, psychological diagnostics
HS6_13	Theoretical sociology, methodology and empirical studies
HS6_14	Social structure and social dynamics, environmental change and society

Physical Sciences and Engineering

ST1	**Mathematics: all areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics, e.g.:**
ST1_1	Logic and foundations of mathematics
ST1_2	Algebra
ST1_3	Number theory
ST1_4	Algebraic and complex geometry
ST1_5	Geometry
ST1_6	Topology
ST1_7	Lie groups, Lie algebras
ST1_8	Analysis
ST1_9	Operator algebras and functional analysis
ST1_10	Ordinary differential equations and dynamical systems
ST1_11	Partial differential equations
ST1_12	Mathematical physics
ST1_13	Probability and mathematical statistics
ST1_14	Combinatorics
ST1_15	Mathematical aspects of computer science
ST1_16	Numerical analysis and scientific computing
ST1_17	Control theory and optimization
ST1_18	Application of mathematics in sciences
ST1_19	Other related subjects
ST2	**Fundamental constituents of matter: particle, nuclear, plasma, atomic, molecular, gas and optical physics, e.g.:**
ST2_1	Fundamental interactions and fields

ST2_2	Particle physics
ST2_3	Nuclear physics
ST2_4	Nuclear astrophysics
ST2_5	Gas and plasma physics
ST2_6	Electricity and magnetism
ST2_7	Atomic and molecular physics
ST2_8	Optics and quantum optics
ST2_9	Lasers and laser physics
ST2_10	Acoustics
ST2_11	Relativity and gravitation
ST2_12	Classical physics
ST2_13	Thermodynamics
ST2_14	Non-linear phenomena
ST2_15	General physics (quantum mechanics, quantum information, other interdisciplinary problems in physics, ...)
ST2_16	Metrology and measurement methods
ST2_17	Statistical physics (gases)
ST2_18	Complex systems
ST2_19	Other related subjects

ST3	**Condensed matter physics: structure, electronic properties, fluids, nanosciences, e.g.:**
ST3_1	Structure of solids and liquids
ST3_2	Mechanical and acoustical properties of condensed matter
ST3_3	Thermal properties of condensed matter
ST3_4	Transport in condensed matter
ST3_5	Electronic properties of materials and transport
ST3_6	Lattice dynamics
ST3_7	Semiconductors
ST3_8	Superconductivity
ST3_9	Superfluidity
ST3_10	Spintronics
ST3_11	Magnetism
ST3_12	Nanophysics: nanoelectronics, nanophotonics, nanomagnetism
ST3_13	Mesoscopic physics
ST3_14	Molecular electronics

ST3_15	Soft matter physics (liquid crystals, polymers,…)
ST3_16	Fluid dynamics (fundamental problems)
ST3_17	Statistical physics (condensed matter)
ST3_18	Phase transitions, phase equilibrium
ST3_19	Other related subjects

ST4	**Physical and analytical chemical sciences: analytical chemistry, theoretical methods in chemistry, physical chemistry/chemical physics, e.g.:**
ST4_1	Physical chemistry
ST4_2	Nanochemistry
ST4_3	Spectroscopic and spectrometric techniques
ST4_4	Molecular architecture and structure
ST4_5	Surface chemistry
ST4_6	Analytical chemistry
ST4_7	Chemical physics
ST4_8	Instrumental methods in chemistry
ST4_9	Electrochemistry, electrodialysis, chemistry in microfluids
ST4_10	Combinatorial chemistry
ST4_11	Modern methods in chemical reactions and processes
ST4_12	Catalysis
ST4_13	Physical chemistry of biological systems
ST4_14	Chemical reactions: mechanisms, thermodynamics, kinetics and catalysis
ST4_15	Theoretical and computational chemistry
ST4_16	Nuclear and radiation chemistry
ST4_17	Photochemistry
ST4_18	Other related subjects

ST5	**Synthesis and materials: materials synthesis, structure-properties relations, advanced and functional materials with designed properties, (macro)molecular architecture, organic chemistry, inorganic chemistry e.g.:**
ST5_1	Structural properties of materials
ST5_2	Solid state materials
ST5_3	Surface modification
ST5_4	Thin films
ST5_5	Corrosion

ST5_6	Porous materials
ST5_7	Ionic liquids
ST5_8	New materials: oxides, alloys, composite materials, organic-inorganic hybrid materials, superconductors
ST5_9	Materials for sensors
ST5_10	Nanomaterials, nanoparticles, nanotubes
ST5_11	Biomaterials synthesis
ST5_12	Smart materials – self-assembly materials, external stimuli-responsive materials
ST5_13	Environmental chemistry
ST5_14	Coordination chemistry
ST5_15	Colloid chemistry
ST5_16	Biological chemistry
ST5_17	Condensed matter chemistry
ST5_18	Homogeneous and heterogeneous catalysis
ST5_19	Methods of research of material properties
ST5_20	Molecular and macromolecular chemistry
ST5_21	Polymer chemistry
ST5_22	Supramolecular chemistry
ST5_23	Organic chemistry
ST5_24	Inorganic chemistry
ST5_25	Other related subjects
ST6	**Computer science and informatics: informatics and information systems, computer science, scientific computing, intelligent systems, e.g.:**
ST6_1	Computer architecture, pervasive computing, ubiquitous computing
ST6_2	Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyber-physical systems
ST6_3	Software engineering, operating systems, computer languages
ST6_4	Theoretical computer science, formal methods
ST6_5	Cryptology, security, privacy, quantum informatics
ST6_6	Algorithms, distributed, parallel and network algorithms, algorithmic game theory
ST6_7	Artificial intelligence, intelligent systems, multi agent systems
ST6_8	Computer graphics, computer vision, multimedia, computer games
ST6_9	Human-computer interaction, speech recognition and speech synthesis, natural language processing

ST6_10	Web and information systems, database systems, information search and digital libraries, data fusion
ST6_11	Machine learning, statistical data processing and applications using signal processing (e.g. speech, image, video)
ST6_12	Scientific computing, simulation and modelling tools
ST6_13	Bioinformatics, biocomputing, and DNA and molecular computation
ST6_14	Other related subjects

ST7	**Systems and communication engineering: electronic, communication, optical and systems engineering, e.g.:**
ST7_1	Control engineering
ST7_2	Electrical and electronic engineering: semiconductors, components, systems
ST7_3	Modeling and simulation engineering
ST7_4	Systems engineering, sensorics, automation
ST7_5	Micro- and nanoelectronics, optoelectronics
ST7_6	Communication technology, high frequency technology
ST7_7	Signal processing
ST7_8	Communication networks
ST7_9	Man-machine interface
ST7_10	Robotics
ST7_11	Biomedical engineering
ST7_12	Other related subjects

ST8	**Products and processes engineering: product design, process design and control, construction methods and engineering, material engineering, power units and systems, e.g.:**
ST8_1	Chemical engineering, technical chemistry, environmental and sanitary engineering, engineering of chemical processes
ST8_2	Maritime/hydraulic/water engineering, civil engineering, aerospace engineering
ST8_3	Computational engineering, computer-aided modelling, design and manufacturing
ST8_4	Solid mechanics, fluid mechanics, thermodynamics
ST8_5	Power systems (production, distribution)
ST8_6	Mechatronics, fine mechanics
ST8_7	Machine design (modelling, shaping, machining)
ST8_8	Material engineering (biomaterials, metals, ceramics, polymers, composites)
ST8_9	Industrial design, product and device design, ergonomics, human-machine interaction

ST8_10	Technical aspects of architecture, urban studies and spatial planning
ST8_11	Production planning and control
ST8_12	Technical aspects of transport
ST8_13	Architectural acoustics
ST8_14	Other related subjects

ST9	**Astronomy and space research: astrophysics /astrochemistry /astrobiology; solar system; stellar, galactic and extragalactic astronomy; planetary systems; cosmology; space science; instrumentation; e.g.:**
ST9_1	Solar and interplanetary physics
ST9_2	Planets and Small Solar-System Bodies
ST9_3	Interstellar medium
ST9_4	Formation of stars and planets
ST9_5	Extrasolar planetary systems
ST9_6	Astrobiology
ST9_7	Stars and stellar systems
ST9_8	The Galaxy
ST9_9	Formation and evolution of galaxies
ST9_10	Clusters of galaxies and large scale structure of the Universe
ST9_11	High energy and particles astronomy – X-rays, gamma rays, cosmic rays, neutrinos
ST9_12	Relativistic astrophysics
ST9_13	Dark matter, dark energy
ST9_14	Gravitational astronomy
ST9_15	Cosmology
ST9_16	Earth and space research using satellite techniques
ST9_17	Large data bases: archiving, handling and analysis
ST9_18	Observational (instrumentation, detectors) and satellite techniques
ST9_19	Other related subjects

ST10	**Earth system science**: **Earth science, atmosphere and climate, geochemistry, geodesy, geoecology, geophysics, physical geography, geoinfomatics, planetary geology, pedology, mining, chemical and physical oceanology, changes and protection of natural environment, e.g.:**
ST10_1	Atmospheric chemistry, atmospheric physics, atmospheric pollution
ST10_2	Climatology, meteorology, climate change, atmospheric dynamics

ST10_3	Physics of Earth's interior, seismology, gravimetry, geomagnetism, magnetotellurics
ST10_4	Geochemistry
ST10_5	Mineralogy, petrology, volcanology, lodes
ST10_6	Earth evolution, sedimentology, tectonics, regional geology, planetary geology
ST10_7	Geomorphology, glaciology, global and regional changes and the development of Earth's landscape
ST10_8	Paleontology, stratigraphy, geochronology
ST10_9	Geomechanics and engineering geology, mining
ST10_10	Hydrogeology, hydrology, water cycle, water pollution
ST10_11	Marine physics, marine chemistry
ST10_12	Geodesy, cartography, Geographic Information Systems GIS, teletedection
ST10_13	Geoecosystem: atmosphere-morphosphere-lithosphere, pedosphere, hydrosphere, biosphere, anthroposphere
ST10_14	Soil science, soil pollution
ST10_15	Paleoclimatology, paleoecology
ST10_16	Changes/shaping and protection of natural environment

Life Sciences

NZ1	**Molecular biology, structural biology, biotechnology**: **molecular biology, structural biology, biotechnology, e.g.:**
NZ1_1	Molecular biology
NZ1_2	Biochemistry
NZ1_3	Biophysics
NZ1_4	Structural biology
NZ1_5	Genetic engineering
NZ1_6	Synthetic biology
NZ1_7	Cell engineering
NZ1_8	Tissue engineering
NZ1_9	Biotechnology
NZ1_10	Microbiology
NZ1_11	Other related subjects
NZ2	**Genetics, genomics: molecular genetics, genomics, proteomics, bioinformatics, systems biology, genetic epidemiology, e.g.:**

NZ2_1	Molecular genetics
NZ2_2	Genomics, transcriptomics, epigenomics
NZ2_3	Proteomics
NZ2_4	Metabolomics
NZ2_5	Cell genetics
NZ2_6	Immunogenetics
NZ2_7	Bioinformatics
NZ2_8	Computational biology
NZ2_9	Systems biology
NZ2_10	Biological systems analysis, modelling and simulation
NZ2_11	Genetic epidemiology
NZ2_12	Other related subjects
NZ3	**Cellular and developmental biology: cell biology, developmental biology, ageing biology, neurobiology, e.g.:**
NZ3_1	Cell biology
NZ3_2	Cell physiology
NZ3_3	Apoptosis
NZ3_4	Ageing
NZ3_5	Molecular neurobiology
NZ3_6	Cell neurobiology
NZ3_7	Signal transduction
NZ3_8	Stem cell biology
NZ3_9	Organogenesis
NZ3_10	Developmental genetics in plants
NZ3_11	Developmental biology in plants
NZ3_12	Developmental genetics in animals
NZ3_13	Developmental biology in animals
NZ3_14	Other related subjects
NZ4	**Biology of tissues, organs and organisms: morphology and functions of animal's and human's systems, organs and organisms, experimental medicine, basics of neurology, e.g.:**
NZ4_1	Anatomy
NZ4_2	Physiology
NZ4_3	Comparative physiology

NZ4_4	Pathophysiology
NZ4_5	Anatomical pathology
NZ4_6	Endocrinology
NZ4_7	Neurophysiology
NZ4_8	Neuroendocrinology
NZ4_9	Systems neurobiology
NZ4_10	Neuroimaging and computational neuroscience
NZ4_11	Metabolism
NZ4_12	Other related subjects
NZ5	**Human and animal noninfectious diseases: etiology, mechanisms, diagnosis and treatment of diseases, poisonings and injuries (without neurological diseases), e.g.:**
NZ5_1	Etiology of human diseases
NZ5_2	Etiology of animal diseases
NZ5_3	Pathogenesis of human diseases
NZ5_4	Pathogenesis of animal diseases
NZ5_5	Diagnostics in human diseases
NZ5_6	Diagnostics in animal diseases
NZ5_7	Human disease treatment
NZ5_8	Animal disease treatment
NZ5_9	Other related subjects
NZ6	**Human and animal immunology and infection: immunity, immune disorders, immunotherapy, infectious and invasive diseases, microbiology, transplantology, allergology, e.g.:**
NZ6_1	Adaptive and innate immunity
NZ6_2	Clinical immunology
NZ6_3	Animal immunology
NZ6_4	Bacteriology
NZ6_5	Virology
NZ6_6	Parasitology
NZ6_7	Mycology
NZ6_8	Other related subjects
NZ7	**Diagnostic tools, therapies and public health: public health, epidemiology, environmental health risks and occupational medicine,**

medical ethics, drug discovery and therapies, pharmacology, e.g.:

NZ7_1 Epidemiology
NZ7_2 Environment and health risks
NZ7_3 Physical culture and health promotion
NZ7_4 Prevention in population health
NZ7_5 Health services, health care research
NZ7_6 Occupational medicine
NZ7_7 Rehabilitation
NZ7_8 Pharmacoeconomics
NZ7_9 Medical ethics
NZ7_10 Veterinary ethics
NZ7_11 Veterinary healthcare
NZ7_12 Prevention of human diseases
NZ7_13 Prevention of animal diseases
NZ7_14 Pharmacy, pharmacotherapy, pharmacology
NZ7_15 Toxicology
NZ7_16 Other related subjects

NZ8 Evolutionary and environmental biology: evolution, ecology, population biology, biodiversity, biogeography, e.g.:

NZ8_1 Evolutionary biology
NZ8_2 Ecology
NZ8_3 Animal behaviour
NZ8_4 Biodiversity
NZ8_5 Biogeography
NZ8_6 Marine biology
NZ8_7 Hydrobiology
NZ8_8 Ecotoxicology
NZ8_9 Population genetics
NZ8_10 Taxonomy and phylogenetic
NZ8_11 Botany
NZ8_12 Zoology
NZ8_13 Human biology and ecology
NZ8_14 Other related subjects

NZ9 Fundamentals of applied life sciences and biotechnology: agricultural, forestry, horticulture, animal production and fishery, food

	and nutrition sciences, industrial biosciences, environmental biotechnology and remediation, e.g.:
NZ9_1	Agronomy
NZ9_2	Animal production
NZ9_3	Forestry
NZ9_4	Horticulture
NZ9_5	Aquaculture, fisheries
NZ9_6	Environment protection
NZ9_7	Nutrition and food sciences
NZ9_8	Environmental microbiology
NZ9_9	Environmental biotechnology
NZ9_10	Bioremediation
NZ9_11	Biohazards, biological containment, biosafety, biosecurity
NZ9_12	Conservation of genetic resources
NZ9_13	Other related subjects

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