

**NCN REVIEW PANELS
FOR POLISH-CHINESE RESEARCH PROJECTS
UNDER SHENG 4**

HS	Humanities, Social Sciences and Art Sciences
HS6	Human nature and human society
HS6_01	Personality psychology, individual differences, emotions, motivations
HS6_02	Cognitive psychology, psycholinguistics
HS6_03	Social, political, environmental, and cross-cultural psychology
HS6_04	Clinical, health, and rehabilitation psychology, clinical neuropsychology, penitentiary and forensic psychology
HS6_05	Developmental, family, and educational psychology
HS6_06	Evolutionary and comparative psychology, behavioral genetics, psychophysiology, neuropsychology
HS6_07	Work, organizational, economic, and consumer psychology
HS6_08	History of psychology, methodology, psychometrics, psychological diagnostics
HS6_14	Theoretical sociology, methodology
HS6_15	Social structure and social dynamics, environmental change and society

ST	Physical Sciences and Engineering
ST4	<u>Chemistry: physical chemistry/chemical physics, theoretical chemistry, analytical chemistry, inorganic chemistry</u>
ST4_01	Physical chemistry, chemical physics
ST4_02	Spectroscopic and spectrometric techniques
ST4_03	Molecular architecture and structure
ST4_04	Theoretical and computational chemistry
ST4_05	Analytical chemistry
ST4_06	Instrumental methods in chemistry
ST4_07	Electrochemistry, microfluidics in chemistry, sensors
ST4_08	Photochemistry
ST4_09	Catalysis
ST4_10	Colloid chemistry
ST4_11	Chemical reactions: mechanisms, thermodynamics, kinetics
ST4_12	Radiation and nuclear chemistry
ST4_13	Environmental chemistry
ST4_14	Inorganic chemistry
ST4_15	Physical chemistry of biological systems
ST4_16	Other related subjects
ST5	<u>Synthetic Chemistry and Materials Science</u>
ST5_01	Structural properties of materials



ST5_02	Solid-state materials
ST5_03	Surface modification
ST5_04	Thin films
ST5_05	Polymer materials
ST5_06	Porous materials, ceramics, glasses
ST5_07	Composites, organic-inorganic hybrid materials, etc.
ST5_08	Biomaterials, biocompatible materials
ST5_09	New emerging materials
ST5_10	Coordination and supramolecular chemistry
ST5_11	Macromolecular chemistry
ST5_12	Polymer chemistry
ST5_13	Organic chemistry
ST5_14	Biological chemistry
ST5_15	Medicinal chemistry
ST5_16	Ionic liquids
ST5_17	Other related subjects
ST8	<u>Production and processes engineering (i.e. chemical-, civil-, environmental-, mechanical-, biomechanical-, energy-, transport-, biological- processes and models)</u>
ST8_01	Chemical engineering, technical chemistry, environmental engineering, sanitary engineering, engineering of chemical processes
ST8_02	Maritime/hydraulic/water engineering, civil engineering, aerospace engineering
ST8_03	Computational engineering, computer-aided modelling, design and manufacturing
ST8_04	Fluid mechanics, technical thermodynamics
ST8_05	Power systems (production, distribution)
ST8_06	Mechatronics, biomechatronics, precision mechanics
ST8_07	Machine design (modelling, shaping, machining)
ST8_08	Mechanics of solids, biomechanics
ST8_09	Industrial design, design and manufacturing, 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	Environmental engineering, e.g. sustainable design, waste and water treatment, recycling, regeneration or recovery of compounds, carbon capture & storage, clean technologies, chemical aspects of circular economy
ST8_15	Bioengineering, artificial organs
ST8_16	Other related subjects
ST11	<u>Materials Engineering</u>
ST11_01	Engineering of biomaterials, biomimetic, bioinspired and bio-enabled materials
ST11_02	Engineering of metals and alloys
ST11_03	Engineering of ceramics and glasses
ST11_04	Engineering of polymers and plastics
ST11_05	Engineering of composites and hybrid and functionally graded materials
ST11_06	Engineering of carbon materials



ST11_07	Engineering of metal oxides
ST11_08	Engineering of alternative established or emergent materials
ST11_09	Nanomaterials engineering, e.g. nanoparticles, nanoporous materials, 1D & 2D nanomaterials
ST11_10	Soft materials engineering, e.g. gels, foams, colloids
ST11_11	Porous materials engineering, e.g. covalent-organic, metal-organic, porous aromatic frameworks
ST11_12	Semi-conducting and magnetic materials engineering
ST11_13	Metamaterials engineering
ST11_14	Computational methods for materials engineering
ST11_15	Surface engineering
ST11_16	Other related subjects

NZ	Life Sciences
NZ1	Molecules of Life: Biological Mechanisms, Structures and Functions
<i>For all organisms:</i> Molecular biology, biochemistry, structural biology, molecular biophysics, synthetic and chemical biology, drug design, innovative methods and modelling	
NZ1_01	Macromolecular complexes including interactions involving nucleic acids, proteins, lipids and carbohydrates
NZ1_02	Biochemistry
NZ1_03	DNA and RNA biology
NZ1_04	Protein biology
NZ1_05	Lipid biology
NZ1_06	Glycobiology
NZ1_07	Molecular biophysics, biomechanics, bioenergetics
NZ1_08	Structural biology
NZ1_09	Molecular mechanisms of signaling processes
NZ1_10	Synthetic biology
NZ1_11	Chemical biology
NZ1_12	Protein design
NZ1_13	Early translational research and drug design
NZ1_14	Innovative methods and modelling in molecular, structural and synthetic biology
NZ2	Integrative Biology: from Genes and Genomes to Systems
<i>For all organisms:</i> Genetics, epigenetics, genomics and other 'omics studies, bioinformatics, systems biology, genetic diseases, gene editing, innovative methods and modelling, 'omics for personalized medicine	
NZ2_01	Genetics
NZ2_02	Gene editing
NZ2_03	Epigenetics
NZ2_04	Gene regulation
NZ2_05	Genomics



NZ2_06	Metagenomics
NZ2_07	Transcriptomics
NZ2_08	Proteomics
NZ2_09	Metabolomics
NZ2_10	Glycomics/Lipidomics
NZ2_11	Bioinformatics and computational biology
NZ2_12	Biostatistics
NZ2_13	Systems biology
NZ2_14	Genetic diseases
NZ2_15	Integrative biology for personalized medicine
NZ2_16	Innovative methods and modelling in integrative biology
NZ3	Cellular, Developmental and Regenerative Biology
<p><i>For all organisms:</i> Structure and function of the cell, cell-cell communication, embryogenesis, tissue differentiation, organogenesis, growth, development, evolution of development, organoids, stem cells, regeneration, development of therapeutic approaches</p>	
NZ3_01	Cell cycle, cell division and growth
NZ3_02	Cell senescence, cell death, autophagy, cell ageing
NZ3_03	Cell behavior, including control of cell shape, cell migration
NZ3_04	Cell junctions, cell adhesion, the extracellular matrix, cell communication
NZ3_05	Cell signaling and signal transduction, exosome biology
NZ3_06	Organelle biology, trafficking and communication
NZ3_07	Mechanobiology of cells, tissues and organs
NZ3_08	Embryogenesis, pattern formation, morphogenesis
NZ3_09	Cell differentiation, formation of tissues and organs
NZ3_10	Developmental genetics
NZ3_11	Evolution of developmental strategies
NZ3_12	Organoids
NZ3_13	Stem cells
NZ3_14	Regeneration
NZ3_15	Development of cell-based therapeutic approaches for tissue regeneration
NZ3_16	Functional imaging of cells and tissues
NZ3_17	Theoretical modelling in cellular, developmental and regenerative biology
NZ4	Physiology in Health, Disease and Ageing
<p><i>For human and animal studies:</i> Organ and tissue physiology, comparative physiology, physiology of ageing, pathophysiology, interorgan and tissue communication, endocrinology, nutrition, metabolism, interaction with the microbiome, non-communicable diseases including cancer (and except disorders of the nervous system and immunity-related diseases)</p>	
NZ4_01	Organ and tissue physiology and pathophysiology
NZ4_02	Comparative physiology
NZ4_03	Physiology of ageing (except nervous system)
NZ4_04	Endocrinology
NZ4_05	Non-hormonal mechanisms of inter-organ and tissue communication

NZ4_06	Microbiome and host physiology
NZ4_07	Nutrition and exercise physiology
NZ4_08	Impact of stress (including environmental stress) on physiology
NZ4_09	Metabolism and metabolic disorders, including diabetes and obesity
NZ4_10	The cardiovascular system and cardiovascular diseases
NZ4_11	Hematopoiesis and blood diseases
NZ4_12	Cancer
NZ4_13	Other non-communicable diseases (except disorders of the nervous system and immunity-related diseases)
NZ5	Neuroscience and Disorders of the Nervous System
<p><i>For human and animal studies:</i> Nervous system development, homeostasis and ageing, nervous system function and dysfunction, systems neuroscience and modelling, biological basis of cognitive processes and of behavior, neurological and mental disorders</p>	
NZ5_01	Neuronal cells
NZ5_02	Glial cells and neuronal-glial communication
NZ5_03	Neural development and related disorders
NZ5_04	Neural stem cells
NZ5_05	Neural networks and plasticity
NZ5_06	Neurovascular biology and blood-brain barrier
NZ5_07	Sensory systems, sensation and perception, including pain
NZ5_08	Neural basis of behavior
NZ5_09	Neural basis of cognition
NZ5_10	Ageing of the nervous system
NZ5_11	Neurological and neurodegenerative disorders
NZ5_12	Mental disorders
NZ5_13	Nervous system injuries and trauma, stroke
NZ5_14	Repair and regeneration of the nervous system
NZ5_15	Neuroimmunology, neuroinflammation
NZ5_16	Systems and computational neuroscience
NZ5_17	Imaging in neuroscience
NZ5_18	Innovative methods and tools for neuroscience
NZ6	Immunity, Infection and Immunotherapy
<p>The immune system, related disorders and their mechanisms, biology of infectious agents and infection, biological basis of prevention and treatment of infectious diseases, innovative immunological tools and approaches, including therapies</p>	
NZ6_01	Innate immunity
NZ6_02	Adaptive immunity
NZ6_03	Regulation of the immune response
NZ6_04	Immune-related diseases
NZ6_05	Biology of pathogens (e.g., bacteria, viruses, parasites, fungi)
NZ6_06	Infectious diseases
NZ6_07	Mechanisms of infection
NZ6_08	Biological basis of prevention and treatment of infection
NZ6_09	Antimicrobials, antimicrobial resistance
NZ6_10	Vaccine development



NZ6_11	Innovative immunological tools and approaches, including therapies
NZ7	Prevention, Diagnosis and Treatment of Human Diseases
Medical technologies and tools for prevention, diagnosis and treatment of human diseases, therapeutic approaches and interventions, pharmacology, preventative medicine, epidemiology and public health, digital medicine	
NZ7_01	Medical imaging for prevention, diagnosis and monitoring of diseases
NZ7_02	Medical technologies and tools (including genetic tools and biomarkers) for prevention, diagnosis, monitoring and treatment of diseases
NZ7_03	Nanomedicine
NZ7_04	Regenerative medicine
NZ7_05	Applied gene, cell and immune therapies
NZ7_06	Other medical therapeutic interventions, including transplantation
NZ7_07	Pharmacology and toxicology
NZ7_08	Effectiveness of interventions, including resistance to therapies
NZ7_09	Public health and epidemiology
NZ7_10	Preventative and prognostic medicine
NZ7_11	Environmental health, occupational medicine
NZ7_12	Health care, including care for the ageing population
NZ7_13	Palliative medicine
NZ7_14	Digital medicine, e-medicine, medical applications of artificial intelligence
NZ7_15	Medical ethics
NZ8	Environmental Biology, Ecology and Evolution
<i>For all organisms:</i> Ecology, biodiversity, environmental change, evolutionary biology, behavioral ecology, microbial ecology, marine biology, ecophysiology, theoretical developments and modelling	
NZ8_01	Ecosystem and community ecology, macroecology
NZ8_02	Biodiversity
NZ8_03	Conservation biology
NZ8_04	Population biology, population dynamics, population genetics
NZ8_05	Biological aspects of environmental change, including climate change
NZ8_06	Evolutionary ecology
NZ8_07	Evolutionary genetics
NZ8_08	Phylogenetics, systematics, comparative biology
NZ8_09	Macroevolution and paleobiology
NZ8_10	Ecology and evolution of species interactions
NZ8_11	Behavioral ecology and evolution
NZ8_12	Microbial ecology and evolution
NZ8_13	Marine biology and ecology
NZ8_14	Ecophysiology, from organisms to ecosystems
NZ8_15	Theoretical developments and modelling in environmental biology, ecology, and evolution
NZ9	Biotechnology and Biosystems Engineering



Biotechnology using all organisms, biotechnology for environment and food applications, applied plant and animal sciences, bioengineering and synthetic biology, biomass and biofuels, biohazards	
NZ9_01	Bioengineering for synthetic and chemical biology
NZ9_02	Applied genetics, gene editing and transgenic organisms
NZ9_03	Bioengineering of cells, tissues, organs and organisms
NZ9_04	Microbial biotechnology and bioengineering
NZ9_05	Fundamentals of biotechnology, bioengineering, and food technology
NZ9_06	Marine biotechnology and bioengineering
NZ9_07	Environmental biotechnology and bioengineering
NZ9_08	Applied plant sciences, plant breeding, agroecology and soil biology
NZ9_09	Plant pathology and pest resistance
NZ9_10	Veterinary and applied animal sciences
NZ9_11	Biomass production and utilization, biofuels
NZ9_12	Ecotoxicology, biohazards and biosafety

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