



European Funds
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List of National Smart Specializations

Over the course of the Project, the Consortium is implementing activities under NSS 1 through NSS 12:

1. NSS 1 - HEALTHY SOCIETY

- I. RESEARCH AND DEVELOPMENT OF MEDICINAL PRODUCTS
- II. ADVANCED THERAPY MEDICINAL PRODUCTS (ATMP) AND BIOLOGICS
- III. RESEARCH AND DEVELOPMENT OF INNOVATIVE DIETARY SUPPLEMENT AND FOODSTUFFS FOR SPECIAL NUTRITIONAL PURPOSES
- IV. MEDICAL DEVICES AND SUPPLIES
- V. MEDICAL TECHNOLOGIES
- VI. MEDICAL IT TOOLS
- VII. IMAGING AND DIAGNOSTICS BASED ON OTHER DETECTION TECHNIQUES
- VIII. MARKERS/TESTING
- IX. TELEMEDICINE
- X. COORDINATED HEALTHCARE
- XI. NEW PREVENTIVE AND/OR THERAPEUTIC TARGETS
- XII. CLINICAL TRIALS
- XIII. BIOLOGICAL, BIOEQUIVALENT, INNOVATIVE, GENERIC MEDICINAL PRODUCTS AND MEDICAL DEVICES AS WELL AS DIETARY SUPPLEMENTS AND FOODSTUFFS FOR SPECIAL NUTRITIONAL PURPOSES
- XIV. ACTIVE (ACTIVE) SUBSTANCES OF MEDICINAL PRODUCTS (API)
- XV. DERMATOLOGICAL AND COSMETIC MEDICINAL PRODUCTS FOR EXTERNAL USE
- XVI. MEDICINAL PRODUCTS OF NATURAL ORIGIN

2. NSS 2 - MODERN AGRICULTURE, FORESTRY AND FOOD

- I. ELEMENTS COMMON TO INNOVATIONS IN THE AGRI-FOOD AND FOREST-WOOD SECTORS
- II. SOIL AND AGRICULTURAL LAND
- III. BIOLOGICAL PROGRESS IN PLANT AND ANIMAL PRODUCTION
- IV. PLANT AND ANIMAL PRODUCTION TECHNOLOGY
- V. AGRICULTURAL MACHINERY AND EQUIPMENT
- VI. ORGANIC AND MINERAL FERTILIZERS, PLANT PROTECTION PRODUCTS AND GROWTH REGULATORS
- VII. PRODUCTION, STORAGE, WAREHOUSING
- VIII. PROCESSING OF AGRICULTURAL CROPS AND ANIMAL PRODUCTS
- IX. INNOVATIVE METHODS TO IMPROVE ANIMAL WELFARE AND PROTECT ANIMAL HEALTH
- X. FOOD VS. CONSUMER
- XI. MODERN FORESTRY
- XII. INNOVATIVE WOOD AND WOOD-BASED PRODUCTS
- XIII. INDIVIDUALIZATION OF FURNITURE PRODUCTION
- XIV. INNOVATIVE PROCESSES AND PRODUCTS IN THE PULP, PAPER AND PACKAGING INDUSTRY

3. NSS 3 - SUSTAINABLE (BIO)PRODUCTS, (BIO)PROCESSES & ENVIRONMENTS

- I. BIOSUOVES
- II. INNOVATIVE (BIO)TECHNOLOGICAL PROCESSES
- III. BIOPRODUCTS AND SPECIALTY CHEMICAL PRODUCTS
- IV. BIOTECHNOLOGY IN ENVIRONMENTAL PROTECTION

4. NSS 4 - SUSTAINABLE ENERGY

- I. POWER GENERATION
- II. SMART GRIDS / SMART POWER GRIDS
- III. ENERGY STORAGE
- IV. RES
- V. PROSUMER POWER INDUSTRY
- VI. ENERGY FROM WASTE, ALTERNATIVE FUELS AND ENVIRONMENTAL PROTECTION

5. NSS 5 - INTELLIGENT ZERO-EMISSION CONSTRUCTION

- I. MATERIALS AND TECHNOLOGIES
- II. BUILDING ENERGY SYSTEMS
- III. DEVELOPMENT OF MACHINERY AND EQUIPMENT
- IV. DEVELOPMENT OF APPLICATIONS AND DEVELOPMENT ENVIRONMENTS
- V. INTEGRATED DESIGN
- VI. ENERGY AND ENVIRONMENTAL VERIFICATION
- VII. PROCESSING AND REUSE OF MATERIALS



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6. NSS 6 - ENVIRONMENTALLY FRIENDLY TRANSPORT

- I. INNOVATIVE MEANS OF TRANSPORT
- II. ENVIRONMENTALLY FRIENDLY DESIGN SOLUTIONS AND COMPONENTS IN TRANSPORTATION VEHICLES
- III. TRANSPORT MANAGEMENT SYSTEMS
- IV. INNOVATIVE MATERIALS IN MEANS OF TRANSPORT
- V. INNOVATIVE TECHNOLOGIES FOR THE PRODUCTION OF MEANS OF TRANSPORT AND THEIR PARTS

7. NSS 7 - CLOSED LOOP ECONOMY

- I. ECO-DESIGN FOR THE GOZ
- II. ACQUISITION AND USE OF RENEWABLE AND NON-RENEWABLE RESOURCES
- III. PROCESSING AND PRODUCTION
- IV. USE AND CONSUMPTION
- V. WASTE AND SEWAGE

8. NSS 8 - ADVANCED MATERIALS AND NANOTECHNOLOGY

- I. ECOLOGICAL, BIOMIMETIC, BIONIC AND BIODEGRADABLE MATERIALS AND NANOMATERIALS TAKING INTO ACCOUNT ENVIRONMENTAL FOOTPRINT, CLOSED-LOOP, WASTE MINIMIZATION AND CLEANER TECHNOLOGY AND NANOTECH-NOLOGY ALONG WITH RATIONALIZATION OF THE USE OF POLYMERIC MATERIALS
- II. MULTIFUNCTIONAL AND NANOSTRUCTURED MATERIALS WITH DRAMATICALLY ENHANCED NEW FUNCTIONALITY AND THEIR TECHNOLOGIES
- III. ULTRA-LIGHTWEIGHT, ULTRA-SMALL AND RADICALLY ENHANCED HEAT AND INCANDESCENCE COMPOSITE MATERIALS AND NANOMATERIALS
- IV. ADVANCED MATERIALS AND NANOMATERIALS FOR RENEWABLE ENERGY, FOR CONVERSION, STORAGE AND ENERGY EFFICIENCY
- V. COMPOSITE MATERIALS AND NANOMATERIALS WITH A MATRIX OR REINFORCEMENT OF NANOFIBERS, NANOWIRES AND NANOTUBES, INCLUDING CARBON NANOTUBES, AND THEIR TECHNOLOGIES
- VI. ADVANCED MATERIALS, TECHNOLOGIES AND NANOTECHNOLOGIES OF PRODUCTS WITH HIGH ADDED VALUE AND HIGH IMPORTANCE FOR INDUSTRIAL VALUE CHAINS, ALONG WITH 3D AND 4D INCREMENTAL TECHNOLOGIES
- VII. ADVANCED MATERIALS AND NANOMATERIALS AND TECHNOLOGIES AND NANOTECHNOLOGIES FOR MEDICAL AND HEALTHCARE PURPOSES, AND ENGINEERING AND BIOLOGICAL MATERIALS INVOLVING LIVING TISSUES AND CELLS
- VIII. ADVANCED MATERIALS AND NANOMATERIALS AND TECHNOLOGIES AND NANO-TECHNOLOGIES FOR SECURITY APPLICATIONS
- IX. MULTIFUNCTIONAL LAYERS AND NANOLAYERS WITH ANTIWEAR, PROTECTIVE AND SPECIAL PHYSICOCHEMICAL PROPERTIES, AS WELL AS SPATIAL, LAYERED, SELF-ORGANIZED AND SELF-REPAIRING COMPOSITES AND NANOCOMPOSITES
- X. MODELING AND SIMULATION, THE USE OF DATABASES AND DIGITAL TWINS IN RELATION TO STRUCTURE AND PROPERTIES, AND COMPUTER AIDED DESIGN AND MANUFACTURING OF MATERIALS AND NANOMATERIALS

9. NSS 9 - ELECTRONICS AND PHOTONICS

- I. SENSORS AND DETECTORS (DESIGN, TECHNOLOGY, MATERIALS)
- II. TECHNOLOGIES, MATERIALS AND EQUIPMENT FOR PHOTOVOLTAICS
- III. FIBER OPTIC TECHNOLOGIES, MATERIALS AND EQUIPMENT
- IV. INNOVATIVE SOURCES OF OPTICAL RADIATION (MATERIALS, TECHNOLOGIES, DEVICES)
- V. SENSOR AND TELECOMMUNICATIONS SYSTEMS AND NETWORKS
- VI. INNOVATIVE CIRCUITS AND SYSTEMS FOR ELECTRONICS, OPTOELECTRONICS AND INTEGRATED PHOTONICS
- VII. INNOVATIVE TECHNOLOGIES AND SYSTEMS OF PRINTED ELECTRONICS
- VIII. APPLICATION ISSUES
- IX. HORIZONTAL ISSUES IN SENSOR AND PHOTONIC TECHNOLOGIES

10. NSS 10 - INFORMATION, COMMUNICATION AND GEO-INFORMATION TECHNOLOGIES

- I. FUTURE INTERNET TECHNOLOGIES, INTERNET OF THINGS TECHNOLOGIES, EMBEDDED SYSTEMS
- II. SMART GRIDS IN INFRASTRUCTURES
- III. ARCHITECTURES, SYSTEMS AND APPLICATIONS IN SMART GRIDS
- IV. INFORMATION MANAGEMENT
- V. MIXED REALITY AND HUMAN-MACHINE, MACHINE-TO-MACHINE INTERFACES
- VI. CYBER SECURITY
- VII. DEVELOPMENT OF ARTIFICIAL INTELLIGENCE
- VIII. POSITIONING AND NAVIGATION
- IX. ACQUISITION OF GEO-INFORMATION
- X. PROCESSING, ANALYZING, SHARING AND VISUALIZING GEO-INFORMATION
- XI. GEOINFORMATICS
- XII. INNOVATIVE APPLICATIONS OF GEOINFORMATION



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- XIII. INFORMATION, COMMUNICATION AND GEO-INFORMATION TECHNOLOGIES IN REDUCING THE NEGATIVE IMPACT OF HUMAN ACTIVITIES ON THE ENVIRONMENT

11. NSS 11 - AUTOMATION AND ROBOTICS

- I. DESIGN AND OPTIMIZATION OF MANUFACTURING PROCESSES
- II. PROCESS AUTOMATION AND ROBOTIZATION TECHNOLOGIES
- III. DIAGNOSTICS AND MONITORING
- IV. CONTROL SYSTEMS
- V. MACHINES AND EQUIPMENT THAT AUTOMATE AND ROBOTIZE PROCESSES

12. NSS 12 - CREATIVE INDUSTRIES

- I. DESIGN
- II. GAMES
- III. MULTIMEDIA
- IV. AUGMENTED REALITY (XR)

The current version of the NSS can be found at: <https://smart.gov.pl/en/>
(detailed description file (in Polish): <https://www.gov.pl/attachment/1bbb5e98-21d2-4656-b764-0c143be2cdd9>)