



الخطة الوطنية للعلوم والتقنية والإبتكار

The National Plan for Science, Technology and Innovation

List of Recommended Proposals for September 2013 Submission

تقنية المواد المتقدمة
ADV Technology

Serial Number	Proposal Code	Proposal Title
1	13-ADV2160-02	Development of Ultra-high performance MgB ₂ superconducting wires through cost-effective, scalable, and high-pressure process".
2	13-ADV2167-02	Effect of Composite Aging on the Performance of Patch Repair of Cracked Aircraft structures
3	13-ADV2179-02	Corrosion and Wear Resistant Nickel–Phosphorus based Nanocoatings for Oil and Petrochemical Applications

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Serial Number	Proposal Code	Proposal Title
1	12-AGR2901-02-R	Applying some new integrated agronomic techniques for sustainable agriculture under water scarcity conditions
2	13-AGR1926-02	Simulation and Modeling of Engineering Properties of Dried Dates Pastes Using Solar Energy
3	13-AGR2172-02	Potential of high throughput precision phenotyping techniques for improving salt tolerance of spring wheat under field conditions

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التقنيات الحيوية

BIO Technology

Serial Number	Proposal Code	Proposal Title
1	13-BIO2009-02	Assessment of Advanced Tomato Breeding Lines under Drought Stress: Agronomic, Genetic and Epigenetic Changes
2	13-BIO2050-02	Shotgun De novo sequencing and draft genome assembly of the C4 halophyte grass <i>Aeluropus litoralis</i> : towards the cloning of the halophyte-specific genes and their promoters
3	13-BIO2129-02	Preventing the Toxicity Induced by Gold Nanoparticles and Optimizing a New Therapeutic Cancer Agent
4	13-BIO2290-02	Genetic characterization and antimicrobial profiling of marine fungi of Saudi Arabia
5	13-BIO2392-02	The impact of Vitamin D on disease activity in Crohn's disease
6	13-BIO2462-02	Improving of the reproductive efficiency of Najdi sheep using artificial insemination

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Serial Number	Proposal Code	Proposal Title
1	13-BUI1866-02	Development of a new class of corrosion inhibitor for steel reinforcement bars in concrete exposed to harsh environment of Saudi Arabia

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تقنية الطاقة ENE Technology

Serial Number	Proposal Code	Proposal Title
1	13-ENE2030-02	Efficient Utilization of Kingdom's Industrial Waste (Sulfur) For the Design and Synthesis of Layered Metal Sulfides Nanostructures for Energy Storage Devices
2	13-ENE2034-02	Engineering of ZnO nanowire-based perovskite solar cells
3	13-ENE2210-02	Design and Implementation of Smart Grid for Hybrid Renewable Energy System in KSA
4	13-ENE2229-02	Fabrication of ultra thin (~1 μm) CdTe solar cells with CdS:O wideband gap window layers on flexible substrates for versatile applications

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Serial Number	Proposal Code	Proposal Title
1	12-ENV3120-02-R	Synthesis of Carbon Microspheres and Hydrochar from Date Palm (Phoenix dactylifera) Biomass Wastes and Its Application for Wastewater Treatment
2	13-ENV2085-02	Development of pulsed fluidized bed technology for enhanced carbon dioxide capture efficiency
3	13-ENV2116-02	Toxicogenomic Investigation on Hazards of Organophosphorous Flame Retardants (OPFRs): Connections Among Genome Function, Cell Death and Carcinogenesis
4	13-ENV2350-02	Assessment of Heavy Metal (HM) Pollution in Aquatic Environment Using Fish Behavior

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تقنية المعلومات

INF Technology

Serial Number	Proposal Code	Proposal Title
1	13-INF2080-02	Cryptographically Privacy Preserving Mechanism for Cloud-based Healthcare System in KSA
2	13-INF2109-02	Using GIS in Implementation Assessment of the Innovative Alternative Intersections Approach to Reduce Traffic Congestions in Roadway Network in Riyadh city, Saudi Arabia.
3	13-INF2114-02	Image watermarking using local texture descriptors in the spatial and transform domains.

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$$\left[\frac{-\hbar^2}{2m} \nabla^2 + V \right] \Psi = i\hbar \frac{\partial}{\partial t} \Psi$$

برنامج الرياضيات والفيزياء
MAT Technology

Serial Number	Proposal Code	Proposal Title
1	13-MAT1813-02	Differential equations on a Riemannian manifold
2	13-MAT2137-02	Fractional Differential Equations and their Applications
3	13-MAT2180-02	Wavelet Analysis of Directional and Anisotropic Regularities and some Applications in Real World Life

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التقنيات الطبية والصحية

MED Technology

Serial Number	Proposal Code	Proposal Title
1	13-MED1947-02	Whole Genome Sequencing and Phylogenetic Analysis of Human Respiratory Syncytial Virus strains from Riyadh, Saudi Arabia
2	13-MED2029-02	Designing Tubulin Binding Drugs for Novel Chemotherapy Applications
3	13-MED2341-02	Identification, characterization and in vitro evaluation of food surfactant associated-ultrafine carbonaceous particulates on human colon-, immune- and adult mesenchymal stem- cells
4	13-MED2383-02	Determination of Angiotensin (1-7) Pathway Role in Osteoporotic Diabetic Bone Following Experimental Induction of Diabetes

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تقنية النانو

NAN Technology

Serial Number	Proposal Code	Proposal Title
1	13-NAN1897-02	Development and Characterization of a Novel Nano-sized Formulation for Oral Delivery of Paclitaxel
2	13-NAN1967-02	Ultrafast active and nonlinear nanoplasmonics-hybrid quantum systems for nano-integrated light wave electronics
3	13-NAN2121-02	Nano devices modeling Gold Nanoparticles as a Potential Vehicle for Antisense Oligonucleotides Delivery to Regulate Gene expression and Control Ichthyophthyriosis
4	13-NAN2126-02	Synthesizing and Characterizing New Thermoluminescent Nanomaterials for Radiation Dose Measurement and Other Semiconductor Applications
5	13-NAN2367-02	Steady state vibration analysis and mitigation of nanostructures based on nonlocal elasticity theory

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Serial Number	Proposal Code	Proposal Title
1	13-PET1997-02	Development of Adsorptive-Biodesulfurization Combined System for Desulfurization of Crude Petroleum Oil and Fuels

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تقنية الفضاء والطيران

SPA Technology

Serial Number	Proposal Code	Proposal Title
1	13-SPA2079-02	Experimental and analytical investigation of unsteady three dimensional flow interactions with high aspect ratio airfoils
2	13-SPA2149-02	Thermal and Hyperspectral Unmanned Aerial Vehicle Imaging for Precision Farming

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Serial Number	Proposal Code	Proposal Title
1	13-WAT2084-02	Nonconventional Desalination Using Freezing Technique

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