



الخطة الوطنية للعلوم والتقنية والإبتكار

The National Plan for Science, Technology and Innovation

List of Recommended Proposals – March 2015

تقنية المواد المتقدمة ADV Technology

Serial Number	Proposal Code	Proposal Title
1	14-ADV182-02-R	Development of tool wear and surface integrity models for hard turning with self-propelled rotary cutting tools
2	15-ADV3717-02	Development of dissimilar metal transitional welds for high temperature steam generator applications using friction welding



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Serial Number	Proposal Code	Proposal Title
1	13-AGR1985-02-R	Novel technologies for extending the shelf life of Barhi at the khalal stage of maturity
2	15-AGR3527-02	Development of High Quality Nutraceuticals and Functional Foods from Date (Phoenix dactylifera) Fruit using Innovative Methods
3	15-AGR3704-02	Application of Bioreactors Technology and Microponics for Cormlets and Flowers Production of Saffron (crocus sativus) – An important Herbal and Medicinal plant
4	15-AGR4464-02	Investigating factors contributing for the annual death of imported honey bee colonies (Apis mellifera carinica hybrid) and assessing the possibilities of enhancing their survivability under Saudi Arabia conditions
5	15-AGR4704-02	Soil water conservation and enhanced crop productivity under deficit irrigation system using biochar derived from date palm tree wastes
6	15-AGR5339-02	The use of conventional and non-conventional aflatoxin adsorbents in broiler and sheep feed

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<http://Npst.ksu.edu.sa> Npst@ksu.edu.sa

Tel. 01-4696001 Fax. 01-4693877



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التقنيات الحيوية BIO Technology

Serial Number	Proposal Code	Proposal Title
1	12-BIO2839-02-R	Towards Domestication of Wild Olive (Oleasters) in south-western Saudi Arabia
2	14-BIO688-02-R	Characterization of inhibitory effects of novel nanoceria on biofilm formation
3	14-BIO768-02-R	Management of Fusarium diseases on certain commercial onion cultivars in Saudi Arabia
4	14-BIO865-02-R	Molecular docking of novel ligand molecules and their evaluation for breast cancer therapeutics
5	15-BIO3502-02	Eosinophil apoptosis using siRNA loaded magnetic nanoparticles for improved Asthma therapy and diagnosis using noninvasive MRI
6	15-BIO3608-02	Development of novel chimeric enzybiotics against drug resistant clinical isolates of Staphylococcus aureus and Enterococcus faecalis from Saudi Arabia
7	15-BIO4042-02	Fabrication of Advanced Cardiac Patch Using a Novel Silk Fibroin/Poly (ethylene oxide) Composite Loaded with a Piezoelectric Material.
8	15-BIO4749-02	Effects of electronic media and electronic games on children on Saudi Arabia
9	15-BIO4955-02	Reprogramming into human induced pluripotent stem cells (hiPSCs) using Sendai virus vector on biomaterials having nanosegments under xeno-free and feeder free conditions for clinical application
10	15-BIO5240-02	Effect of prebiotics in Saudi adults with type 2 diabetes: Randomized Controlled Trial.

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Serial Number	Proposal Code	Proposal Title
1	15-BUI4983-02	Theoretical and Experimental Evaluation of Saudi Building Code (SBC 304) Provisions for the Corrosion Protection of Reinforced Concrete Structures”Part I



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تقنية الإلكترونيات

ELE Technology

Serial Number	Proposal Code	Proposal Title
1	14-ELE69-02-R	A Methodology for Design and Implementation of a Condition Based Maintenance System
2	15-ELE3793-02	Fabrication of Perovskites-Based Edge- Emitting Laser
3	15-ELE5017-02	Compact and Efficient Linearized Wireless Terminals for Fast Streaming Nodes in the Internet-of-Things

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تقنية الطاقة ENE Technology

Serial Number	Proposal Code	Proposal Title
1	14-ENE600-02-R	Design and Synthesis of Layered Double Hydroxides coated Binary and Ternary Nano-Composites for High Energy Density based Stretchable and Flexible Energy Storage Devices
2	15-ENE4044-02	Seismic monitoring of the potential geothermal sources in the vicinity of Al-Madinah Al-Munwarah area, Saudi Arabia
3	15-ENE4953-02	Framework for Sustainable Recovery of Energy Intensive Products



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تقنية البيئة

ENV Technology

Serial Number	Proposal Code	Proposal Title
1	11-ENV1946-02-R	Documentation and Conservation of Traditional and Indigenous Ethnobotanical Knowledge of Central Region of Saudi Arabia
2	13-ENV2233-02-R	Anthropogenic and natural organic matter in surface sediments from the Red Sea coast of Saudi Arabia: Multi-biomarker and geochemical applications.
3	15-ENV3373-02	Characteristics and Environmental Impacts of Dust Storms in the Kingdom of Saudi Arabia
4	15-ENV5070-02	Chemical compositions, sources, and health effects of urban and rural aerosol particulate matter in the Riyadh area, Saudi Arabia.

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Serial Number	Proposal Code	Proposal Title
1	15-INF3775-02	Energy-efficient and QoS-aware Distributed Surveillance System for Large-scale Environments using POC Codes
2	15-INF4119-02	AAMEN : toward a new AdvAnced systeM for drivEr assistaNce
3	15-INF4627-02	A Control-Theory-Based Approach to Scheduling Optimization of Large Oil Refinery



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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	15-MAT4092-02	Geometry of production functions
2	15-MAT4882-02	Optimization tool to enhance the profitability of pooled transportation systems in Saudi Arabia
3	15-MAT5110-02	Mechanical and coherence effects of structured laser beams on two-level atoms

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التقنيات الطبية والصحية

MED Technology

Serial Number	Proposal Code	Proposal Title
1	14-MED1227-02-R	Screening and activity-guided isolation of anticancer and antimicrobial agents from the plants of Saudi Arabian deserts
2	14-MED543-02-R	Protein Variants in Human Disease: Characterization and Quantification by Mass Spectrometric Immunoassay
3	14-MED683-02-R	Attenuate T cell immune responses during airway inflammation by modulating inhibitory signalling pathways using a targeted antibody-nanocarrier approach monitored non-invasively via MRI.
4	15-MED3643-02	Role of HCN and Kv7 Potassium Channels in Chronic Diabetic Neuropathic Pain
5	15-MED4052-02	The Plastics Puzzle on Human Health: Functional Toxicogenomic Study on Effects of Bisphenols to Human Hepatic Cells
6	15-MED4062-02	Investigation of antiprotozoal potential of natural products of plant, marine or fungul origin
7	15-MED4229-02	Effect of Collagen Cross Linking (CXL) on Collagen fibril, Proteoglycans and keratocytes of Corneal Stroma
8	15-MED4800-02	Biosynthetic Engineering for Novel Pristinamycin Analogs with Improved Therapeutic Index
9	15-MED5103-02	Physico-chemical speciation of polar/non-polar polycyclic fatty acid materials (PNP-PC-FAMs) as neo-formed contaminants in junk foods and their role in pathogenesis of chronic inflammation and metabolic disorders
10	15-MED5219-02	Measures of cortical plasticity by paired-pulse transcranial magnetic stimulation in epileptogenesis after traumatic brain injury

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Serial Number	Proposal Code	Proposal Title
1	14-NAN167-02-R	Multi-Functional Janus Core-Shell Mesoporous Silica Nanocomposites for Dual-Control Drug Release
2	15-NAN3664-02	Interaction of innate immune soluble factors with nanoparticles and related biomedical applications
3	15-NAN4068-02	Production of Multifunctional Nanomaterial Additives From Local Saudi Ores to Solve the Production of Arabian Petroleum Crude Oil Problems
4	15-NAN5012-02	Synthesis of Multifunctional Nanostructures using Phoenix dactylifera L. Agro-wastes as Sustainable Bio-precursor for Biomedical Applications

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تقنية البترول والغاز OIL & GAS Technology

Serial Number	Proposal Code	Proposal Title
1	15-OIL5420-02	Unconventional Hydrocarbon Resources: The potential contribution of "Shale Gas" to petroleum system, Tabouk basin- Northwest of Saudi Arabia



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تقنية الفضاء والطيران

SPA Technology

Serial Number	Proposal Code	Proposal Title
1	14-SPA937-02-R	Saudi Digital Farms-a web based Decision Support System for Precision Agriculture in Saudi Arabia
2	15-SPA4053-02	Thickness and thermo-mechanical structure of the lithosphere of the Arabian Plate: a multidisciplinary approach

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