

Announcement

The Vice Rectorate for Graduate Studies and Scientific Research announces the results of “International Collaboration initiative”

(Grand Challenges course - Research Capabilities course)

One of the Ministry of Education’s national initiatives in scientific research which relevant Saudi Vision 2030

Accepted Proposals:

1-Grand Challenges:

Recommended			
Ranking per the University proposals	Challenge	University	Proposal Title
1	Develop a real-time simulation and monitoring mechanism for Massive Crowd Movement with early warning capabilities	King Saud University	A Practical and Real-time Crowd Management System through Simulating, Monitoring and Guiding Pedestrians.
2	Reduce the threat posed by emerging infectious diseases through prediction, pandemic detection, and vaccine development	King Saud University	MERS-CoV RBD Vaccine-technology transfer and cGMP manufacture.
3		King Saud University	Stabilization of Recombinant Protective Antigen (rPA) for use as a vaccine against Bacillus anthracis.

2-Research Capabilities

Recommended			
Ranking per the University proposals	Research Field	University	Proposal Title
1	Biogenomics	King Saud University	Targeting therapy-induced senescence: a novel therapeutic approach in breast cancer treatment.
2	Catalysis & Polymers	King Saud University	DEVELOPMENT OF BIOPOLYESTERS AND THEIR GRAPHENE BASED NANOCOMPOSITES FROM RENEWABLE RESOURCES.
3	Crowd Management	King Saud University	Building a cognitive model for social psychological processes affecting Hajj crowd's movement throughout the scheduling system.
4	Cyber Security	King Saud University	Combating Cybersecurity Attacks in Connected and Autonomous Vehicles Via Multi-Layer Protection.
5	Machine Learning	King Saud University	Machine Learning based Performance Monitoring and Modulation Format Classification Platform for Autonomous Optical Networks.
6	Machine Learning	King Saud University	Machine Learning based State-of-the-Art Eye Diseases Classification System (MEDiCS).
7	Machine Learning	King Saud University	Deep Learning based EEG Brain Control for Hand Rehabilitation of Stroke Patients.
8	Nanobiology	King Saud University	Pro-apoptotic nanoparticles targeting sinus tissue eosinophils as a novel approach for Chronic Rhinosinusitis therapy.
9	Nanobiology	King Saud University	Targeting potential Proteases and proteins of MERS-CoV using Synthetic Peptides for Therapeutic Purposes.

10	Nanobiology	King Saud University	Development of Nano-Sized Systems for the Enhancement of Ocular Drug Delivery
11	Pollution Management	King Saud University	Development of Metal-organic semiconductor-based sensing and photocatalytic nanotechnologies for environmental pollution management.
12	Renewable Energy	King Saud University	Design and Characterization of Multifunctional Microporous Metal-Organic Framework Materials for Potential Energy Applications.
13	Renewable Energy	King Saud University	Molecularly Engineered Nanostructured Electrodes for the Conversion of Food Waste into Electricity in Microbial Fuel Cells.
14	Biogenomics	King Saud University	The novel oncogene KDM2B in the epigenetic regulation of the cytoskeleton in cancer.
15	Biogenomics	King Saud University	Quest for Novel Bioactive Compounds: Non-conventional Isolation of Novel Actinomycetes and Metal Nanoparticles Mediated Stress for The Expression of Cryptic Biosynthetic Genes.
16	Biogenomics	King Saud University	Genetic changes in fish and shellfish as a result of anthropogenic activities in the Arabian Gulf and Red Sea, Kingdom of Saudi Arabia.
17	Machine Learning	King Saud University	A Framework for Arabic Media Mining and Information Extraction Using Continuous Domain Semantic Representation.
18	Nanobiology	King Saud University	Development of biosensor for ultrasensitive detection of biomolecules.
19	Nanobiology	King Saud University	Preclinical Safety and Toxicity of Novel Anti-cancer TiO ₂ Based Nanoparticles.
20	Renewable Energy	King Saud University	Development of a Novel Refractory Particle Heating Receiver for Concentrator Solar Power (CSP) Applications (RPHR).

21	Renewable Energy	King Saud University	Development of high-performance graphene wrapped bismuth telluride based thermoelectric devices for power generation.
22	Renewable Energy	King Saud University	Research on Particulate Flows and Especially Heat Transfer in Flowing Particulates.
23	Renewable Energy	King Saud University	Combined solar-geothermal energy for operating a standalone, semi-closed greenhouse for water reuse and sustainable agriculture in arid regions.
24	Renewable Energy	King Saud University	Development of a Novel Low-Cost Heliostat for Concentrating Solar Power Application.
25	Renewable Energy	King Saud University	Assessment and performance analysis of wind turbine development in Kingdom of Saudi Arabia: Materials and technology aspects.