

## ASRT Targeted M.Sc. Research Grants

**(ASRT/TRG/2010)**

**T**he third cycle of ASRT M.Sc. research grants (scholarships) will be targeted research grants (TRG) based on the thematic research priorities of Higher Council for Science & Technology and recommendations of different specialized scientific councils of ASRT.

### Agriculture

**Grant code:** ASRT/TRG/A/2010-1

#### **Targeted Subjects**

1. Improvement of abiotic stress tolerance in strategic cereal crops.
2. Improvement of abiotic stress tolerance in nontraditional food crops.
3. Improvement of abiotic stress tolerance in oil and fiber crops.
4. Molecular markers and marker assisted selection for the improvement of milk and meat production in farm animals.
5. Enhancing of fish farming under fresh and saline water conditions.
6. Improvement of low water demand plants, i.e. Date palm, Fig and olive.
7. Effective and better utilization of native plant genetic resources.
8. Enhancing of remote sensing, expert systems and geographic information systems application for the improvement of soil and water management.
9. Economics of food and fiber production under international pricing fluctuation.
10. Improvement of irrigation and chemigation systems for maximizing water and nutrient use efficiency in irrigated agriculture.



## Water

**Grant code:** ASRT/TRG/W/2010-2

### **Targeted Subjects**

1. Assessment of the renewable ground water resources of Sinai.
2. Integrated approach for monitoring water quality, including health and risk assessment.
3. Assessment and management of non-conventional water resources.
4. Applications of renewable energy in sustainable development and environmental Management, including Water Desalination, Pumping, and Irrigation.
5. Modeling of underground water aquifers.
6. Strategy of the protection of Egyptian shores.
7. Future effects of climatic changes on Egypt.

ASRT/PHASE-3/2010

## Energy

**Grant code:** ASRT/TRG/E/2010-3

### **Targeted Subjects**

1. Solar energy control using liquid crystal technologies.
2. Electric Energy Storage.
3. Organic thin film solar cells.
4. Increasing oil recovery by enhanced oil recovery (EOR) methods.
5. Using nanotechnology in solving petroleum problem.
6. Biodiesel production.
7. Bioethanol production.
8. Electrochromic devices for energy saving.
9. Spectrally Selective Coatings for smart windows.
10. Adhesive conducting polymers.
11. Electrochemistry and fuel cells.
12. Study the design and performance of stand- alone Photovoltaic Power Systems accompanied with Battery Storage using Artificial Intelligence.
13. Study the design and performance of Photovoltaic / Fuel cells Hybrid Electrical Power Systems using Artificial Intelligence.
14. Study the design and performance of Photovoltaic Power Systems Integrated with the Electrical Utility Grid using Artificial Intelligence.
15. Application of Nano Technology on Photovoltaic Power system.
16. Protection and Stability of Photovoltaic Power Systems

ASRT/PHASE-3/2010



## Health

**Grant code:** ASRT/TRG/H/2010-4

**Targeted Subjects**

1. Control of infectious diseases.
2. Development of new antitumor and antiviral substances.
3. Protein crystallography & structural biology.
4. Obesity.
5. Stem Cell.
6. Cancer Biology.

ASRT/PHASE-3/2010

## Basic Sciences

**Grant code:** ASRT/TRG/B/2010-5

### **Targeted Subjects**

1. Biostatistics.
2. Bioinformatics.
3. Statistical computing.
4. Computer network.
5. Modeling and simulation.
6. Meta analysis.
7. Quantum computation.
8. Quantum information.
9. Engineering of computer programming.
10. Random processes.
11. Chaotic theory.
12. Artificial intelligence.
13. Multiferroic materials.
14. Gas- and bio-sensing materials.
15. Photoconductivity of thin films and its applications.
16. Carbon nano-tubes.
17. Acceleration of Charged Particles with Laser Pulse
18. Chemistry of dyes.
19. Nuclear chemistry.
20. Computational biochemistry.
21. Hydrogeophysical investigations in the northern western desert.
22. Uses of clays in pharmaceutical industry.
23. Astrophysics for high energy.
24. Physics and technology of satellites.

ASRT/PHASE-3/2010

## Mineral Resources

**Grant code:** ASRT/TRG/MR/2010-6

### **Targeted Subjects**

1. Environmental control of underground coal mine fires with special reference to Maghore colliery
2. Application of risk analysis to a new gold mine
3. Application of bio-processing in upgrading some industrial minerals
4. Application of advanced magnetic separation technology in upgrading Egyptian Kaolin ones required for paper and ceramic industries

ASRT/PHASE-3/2010



## Industry

**Grant code:** ASRT/TRG//2010-7

### **Targeted Subjects**

1. Bio-processing of iron ores – running
2. Evaluation & UP-grading of Abu-Tartur oil shale and coals
3. Separation of fossil resin from Egyptian coals by advanced techniques.
4. Selective magnetic coating technique for Up-grading of fine particles.
5. Ultra-fine grinding and coating of some industrial minerals for different industrial applications.
6. Preparation of calcium ferrites from industrial wastes to improve the technoeconomics of the blast furnace.
7. Water treatment by low grade iron ores.
8. Bio-surface modification of oxide minerals.
9. Removal of organic sulphur from Egyptian Coals.
10. Corrosion protection of reinforced steel in concrete.
11. Thermophysical properties and thermal cycling behavior of plasma sprayed thick thermal barrier coatings for thermally loaded components.
12. Parameters affecting the production of high carbon ferromanganese.
13. Manufacturing cost for Egyptian Cottons.
14. Carbon nanotubes fabrication and functionlization.
15. Conducting polymer functionilaztion.
16. Fabrication of nanodevices, LED and solar cell devices.
17. Fabrication of Nanofilters for water and air purification.
18. Development of Fuel Cell using Naonomaterails.
19. Batteries technologies.
20. Industrial Biotechnology.

ASRT/PHASE-3/2010

## Communications

**Grant code:** ASRT/TRG/C/2010-8

### **Targeted Subjects**

1. Networks and communication systems.
2. Fiber optics and Laser.
3. Logic circuits and microprocessor.
4. Integrated circuits.
5. Integrated circuits in nanotechnology.
6. Digital Circuit.
7. Multimedia.
8. Automatic control and measurement.
9. Computerized automatic control.
10. Robot.
11. Control in industrial systems.

ASRT/PHASE-3/2010

Social Sciences

Grant code: ASRT/TRG/S/2010-9  
Targeted Subjects

- ١ . سياسات وقضايا التنمية فى مصر
- ٢ . الهجرة الانتقائية ونزيف العقول
- ٣ . العنف وتراجع الاخلاقيات
- ٤ . الثقافة العلمية وتبسيط العلوم