

The National Research Centre

NRC



www.nrc.sci.eg
1956 - 2006

NRC 2006



- 12 Feddans.
- 10 Research Buildings.
- 2 Administration Buildings.
- 10 Store Rooms.
- Animal House.
- Green Houses.
- 5 Experimental Stations.
- Research Farm 350 Feddans.

**Established in 1956
(Design, Consultation and Execution)
In collaboration with Germany**

National Research Centre

1956 : 4 Divisions (14 Departments)

- Chemical Research Division (5 Dept.)
- Physical Research Division (3 Dept.)
- Agriculture Research Division (3 Dept.)
- Medical Research Division (3 Dept.)

1981 : 10 Divisions (50 Departments)

2007 : 13 Divisions (106 Departments)

Research Staff : 5232

Research Divisions

Environmental
Sciences

Medical Sciences

Human Genetics
& Genome

Textile Industries

Pharmaceutical
Industries

Food Ind. and
Nutrition

Engineering
Research

Org. Chem.
Industries

Inorg. Chem. Ind. and
Mineral Resources

Agriculture and
Biology

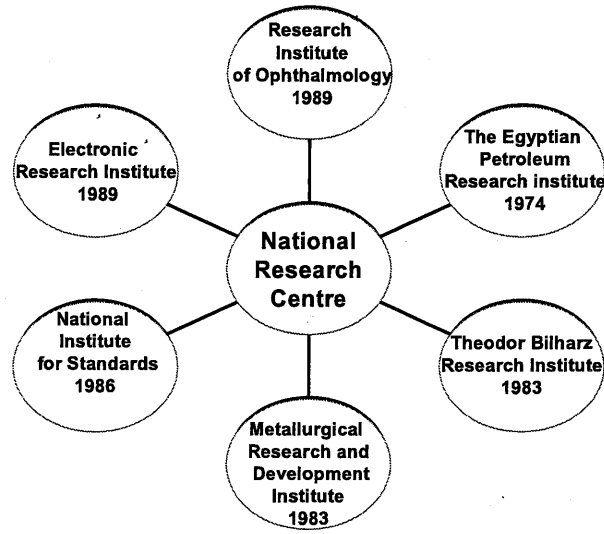
Veterinary Research

- Health and Environment
- Industrial Research
- Agriculture and Biology
- Basic Sciences

Genetic Engineering
and Biotechnology

Physics

Research Institutes Developed from NRC



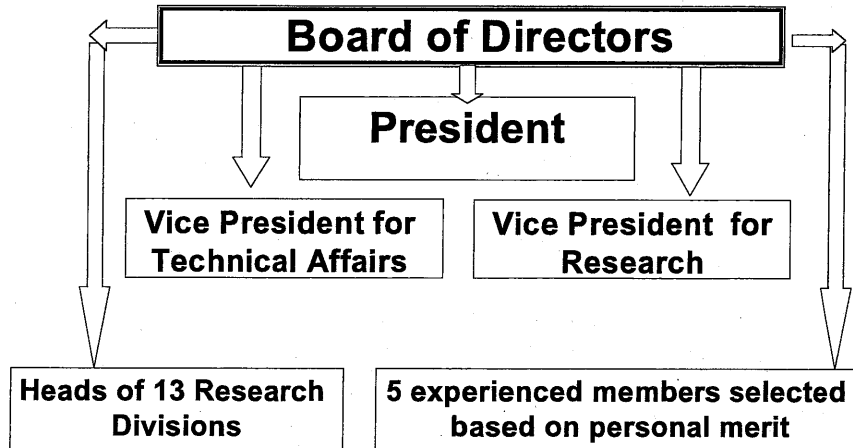
NRC

*The major multi-disciplinary
R&D Institute in Egypt*

Mission

***Conduct basic and applied researches in
different fields of science and technology
to strengthen the national economy***

Organization Structure



NRC Objectives

- **Provide scientific services and consultations.**
- **Train graduates and researchers .**
- **Contribute in national upgrading of science & dissemination of knowledge .**
- **Strengthen scientific linkages and cooperation with local and international organizations.**

Research and Development

Research Projects

Customer-Oriented

Addressed to national needs

Targeted Sectors

- **Industry**
- **Health and Environment**
- **Agriculture and Biology**
- **Basic Sciences**

Research and Development

1- In-house projects - Governmental budget.

Contracts between NRC Adm. & researchers.

Three years research plans:

**7th (2004 - 2007) 13 divisions' research projects
with specific end users.**

Research and Development

2- Local projects / contracts with:

- Academy of Scientific Research and Technology.**
- Production and service sectors.**

Research and Development

3- International projects

- Bilateral scientific agreements:**
 - Egypt - Other Countries**
 - NRC - Scientific Organizations**

**Research Projects Finance
2006/2007**

1- In-house projects (Governmental budget)	18%
2- Local projects / contracts	30%
3- International projects	52%

Current Strategy

- **Interaction with Production and Service Sectors.**
- **Advanced Basic Science Research.**
- **Strengthen International Relations.**

*Measures Taken To Implement
NRC Strategy*

- **Update physical infrastructure.**
- **Update lab instrumentation and facilities.**
- **Establishment of central labs.**
- **Internet network.**
- **Decentralization of administration.**
- **IT environment.**
- **International conferences and workshops.**
- **Seminars, symposia and exhibitions.**
- **Postgraduate capacity building.**
- **Stress upon international publications.**

Interaction with Production and Service Sectors

- **Establishment of Businessmen and Investors' Office.**
- **Including key investors in the Board of directors and divisions.**
- **Special Service Units.**
- **Oriented Ph.D. research points.**

Interaction with Production and Service Sectors

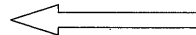
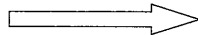
Continue 

- **Central Unit for Analysis and Scientific Service (CUSS).**
- **Training and Capabilities Development Unit**
- **Organizing workshops, symposia, conferences and field visits and studies.**
- **Exhibitions for scientific products.**

"Committee of Research & Development and Technology Transfer"



NRC



Federation
of Egyptian Industries

NRC provides scientific and technical assistance , consultations, training and testing to members of the Federation of Egyptian Industries .

The Road to Nobel Project

***Brain Gain Instead of Brain
Drain
of highly qualified young researchers
Candidates are:***

- **PhD holders from International Universities**
- **International publications, projects and scientific collaboration**
- **Patents and prizes**

The Road to Nobel Project

- ***Highly equipped new Labs***
- ***Steering Committee***
- ***Performance Indicators***
- ***Institutional Funding***
- ***International Research Grants***

The Road to Nobel Project

Basic and Applied Research Groups

- **Plant Molecular Genetics**
- **Vaccines and recombinant DNA**
- **Infectious Diseases and Immunology**
- **Cancer Biology**
- **Stem Cell research**
- **Advanced Materials**
- **Nano Technology**

The Road to Nobel Project

- **Chemistry of Natural products**
- **Synthetic Chemistry**
- **LASER Technology**
- **Renewable energy**
- **Geotechnology**
- **Safe Agriculture**

The Road to Nobel Project **Major Lab. Equipment**

- **Biolistic gene gun**
- **Cooling centrifuge**
- **Deionized water distillator**
- **Deep freezer -80**
- **Electrophoresis (horizontal – vertical)**
- **Gel documentation system**
- **ELISA reader**
- **HPLC fully computerized**
- **Inverted microscope**
- **Laminar air flow**
- **Liquid nitrogen Generator**
- **Real time PCR**
- **Trinocular microscope with camera**
- **Ultra filtration system**

Some satellites central labs equipment

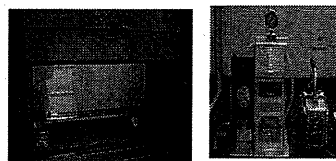
Flowcytometer



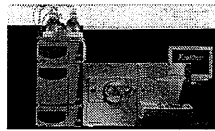
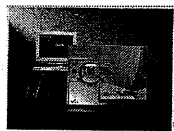
Digital Color Doppler



Gene Gun



**Liquid Chromatography
/Mass Spectroscopy**




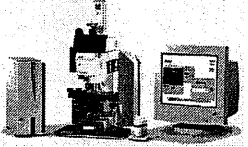




Image Analysis System




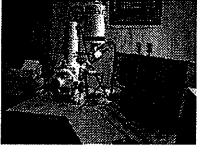
Electron Spin Resonance (ESR)




Real-time technology



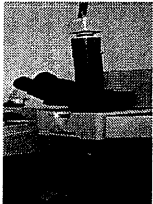


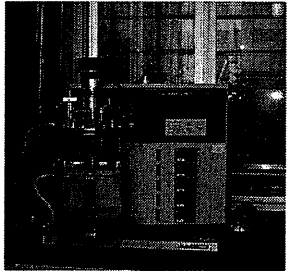
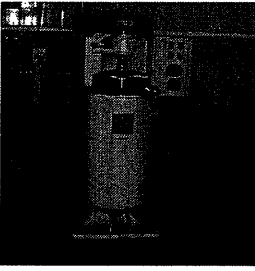
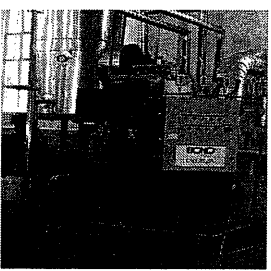
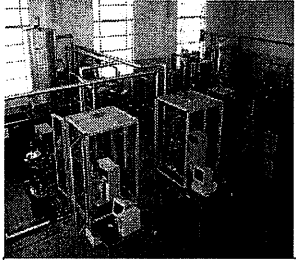
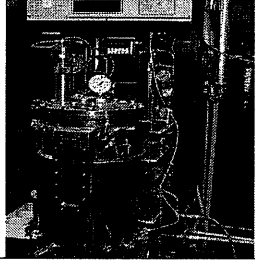
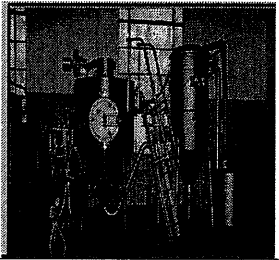
Electro Scanning Microscope

FTIR and FT-RAMAN SPECTROMETER



FTIR Microscope and Cryostat

Biotechnology Pilot Unit

NRC Fund Raising (2004-2005)

- International Projects (5 millions L.E.)
- Local Projects with the National Academy of Science and Technology (0.4 millions L.E.).
- Services Units (5.9 millions L.E.).
- Training (2.5 millions L.E.).
- Contracts (0.76 millions L.E.).
- International Prizes (110.000 \$).
- Governmental Reinforcements (16.7 millions L.E.).

NRC Fund Raising (2005-2006)

- International Projects (11.2 millions L.E.)
- Local Projects with the National Academy of Science and Technology (1.135 millions L.E.).
- Services Units (7.0 millions L.E.).
- Training (3.0 millions L.E.).
- Contracts (1.03 millions L.E.).
- Governmental Reinforcements (9.4 millions L.E.).

International Relations



International Relations Office

Scientific channels with regional and international universities and research centers.

Projects, contracts and scientific agreements.

African Relation Office

Promotes the Scientific cooperation with African countries

European Relation Office

Promotes the Scientific cooperation with European countries

Strengthening Collaboration

- **Collaborative research projects**
- **Exchange visits of research staff**
- **Training for junior researchers**
- **Scholarships**

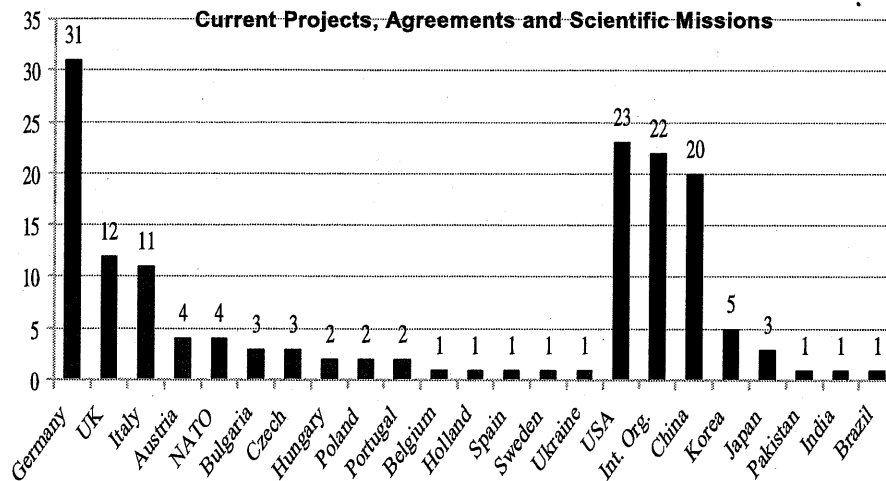
NRC Networking

International and Regional Organizations:

- Center of excellence by the COMSATS
- The interim regional hub in biosciences for North Africa by the NEPAD
- TWAS
- TWINSO
- WAITRO

International Relations

Scientific Cooperation



*Scientific Cooperation between
NRC and Asia*

- **Scientific missions** : 10
- **International conferences** : 38
- **Exchange of expert visits:**
 - **Scientific agreements** 13
 - **International organizations** 54

*Scientific Cooperation between
NRC and Japan*

- **Scientific missions** : 17
- **International conferences** : 15
- **Exchange of expert visits** : 5

*Scientific Cooperation between
NRC and Japan*

■ **Areas of Research Collaboration:**

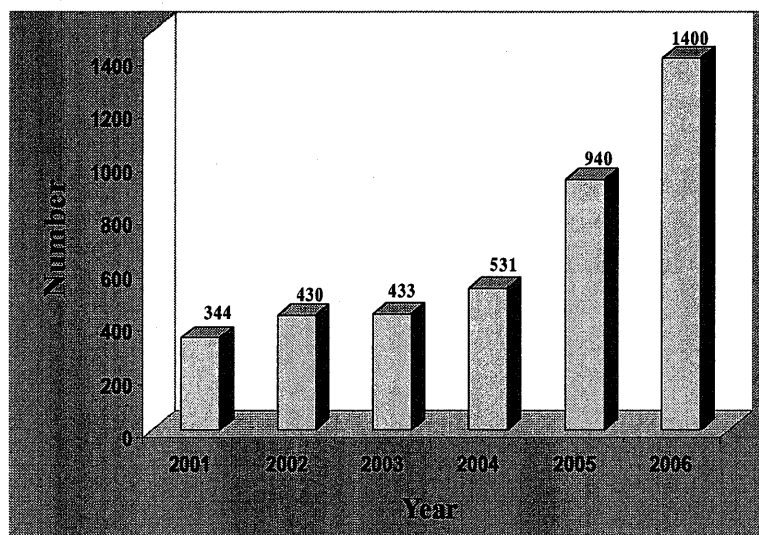
**Solar energy, Environment, Biotechnology,
Food industries, Organic and Inorganic
Industries, Textiles, Pharmacy, Medicine,
Human genetics and Veterinary.**

Recently Signed Protocols

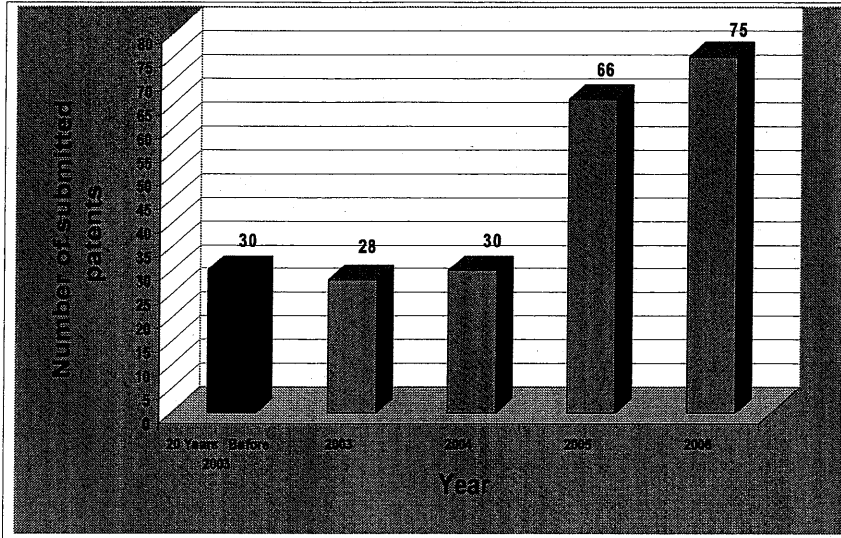
- # **Korean Industrial Technology Foundation (2006).**
- # **National Engineering Academy of Kazakhstan (2006).**
- # **Yarmuke University in Jordan (2006).**
- # **University of Lebanon (2006).**
- # **Sudanese Food Research Centre (2006).**
- # **Sudanese Centre for Research and Industrial
Consultations (2006).**
- # **ICT Trust Fund (2006).**
- # **National Cancer Institute , USA (2006).**
- # **Arab Union of Textile Industries (2006).**
- # **Burg Burerag Institute, Algeria (2006).**

Scientific Records

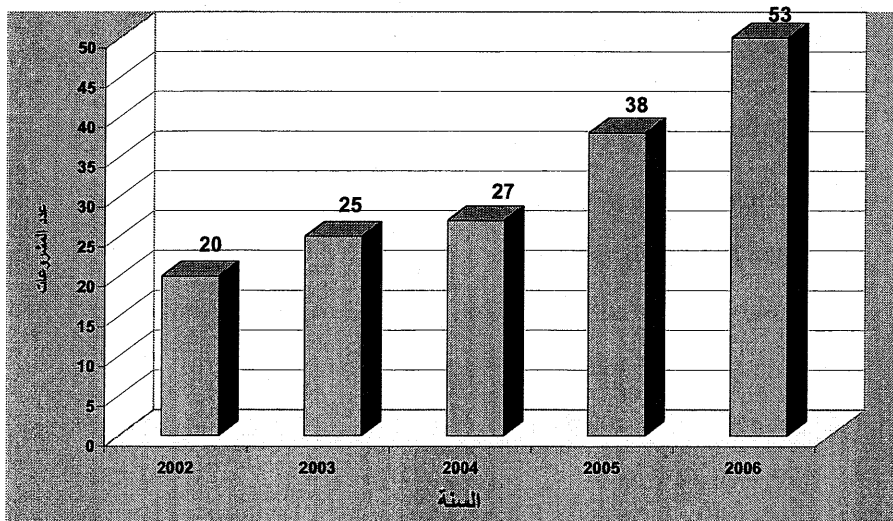
International Publications



No. of Submitted Patents



International Scientific Projects



Scientific Records

International Appreciation (2005 & 2006)

- Center of excellence by the COMSATS.
- The interim regional hub in biosciences for North Africa by the NEPAD.
- Hamdan Bin Rashid Prize Award for the best international publication.
- The Islamic Bank Prize Award for NRC as being the institute that realizes scientific achievements or prominent technical development of the country.
- Honorary Fellowship for Prof. Dr. Hany El-Nazer (President of NRC) from the British Royal College of Physicians in Edinbrough (MRCP) for his outstanding approach for enhancement of scientific research in NRC (2006).

Scientific Records

**National Appreciation
2005 & 2006**

NRC's Scientists and Researchers have been granted:

THE Two Mubarak prizes for science & advanced technology.

- 4 State Merit prizes of basic sciences.**
- 3 Superiority prize for science & advanced technology**
- 12 State prizes in basic & applied sciences**
- 12 Organizations' prizes**
- 61 NRC Prizes**

Thank You