



## Beni-Suef University

### Physical Facilities for Interdisciplinary Research

#### [1] Eight Faculties Specialized in Interdisciplinary Areas

The university is home to eight distinctive faculties, each focused on critical interdisciplinary fields. These faculties are pioneers in Egypt and the Middle East, being the first of their kind in the region. They include:

1. Faculty of Earth Sciences
2. Faculty of Special Needs Sciences
3. Institute for Elderly Studies
4. Faculty of Postgraduate Studies in Applied Sciences
5. Laser Institute for Research and Applications (LIRA)
6. Faculty of Navigation Science and Space Technology
7. Research Institute for Medical and Aromatic Plants
8. Institute for Small and Medium Enterprises

These faculties play a pivotal role in advancing research and fostering innovation across various essential sectors.



Faculty of Postgraduate Studies for Applied Sciences



Faculty of Special Needs Science



Institute of Elderly Science Studies



Institute of Small and Medium Enterprises

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|---|--|
|   |  |
| <p>Research Institute of Medical and Aromatic Plants</p>  | <p>Laser Institute for Research and Application (LIRA)</p> |
|   |  |
| <p>Faculty of Navigation Science and Space Technology</p> | <p>Faculty of Earth Science</p>                            |

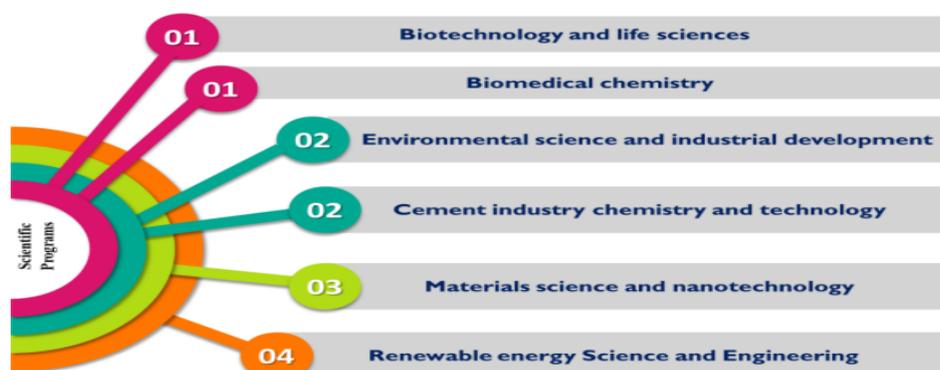
## [2] Multiple Departments Derived from Interdisciplinary Areas

### 2.1 Faculty of Postgraduate Studies for Applied Sciences

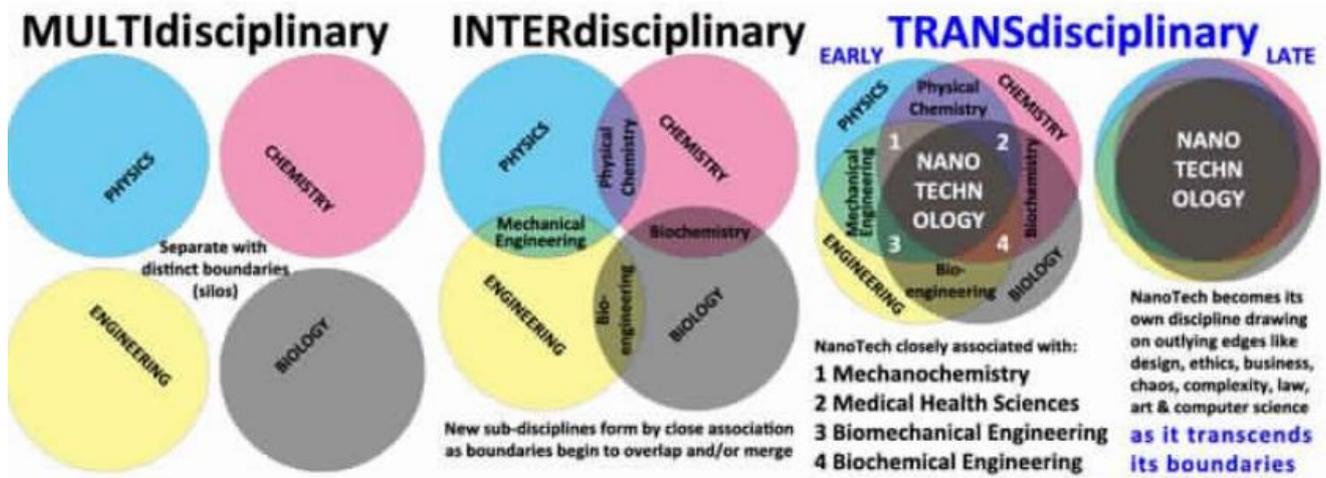
The **Faculty of Postgraduate Studies for Applied Sciences** consists of four primary departments, each offering Diplomas, M.Sc., and Ph.D. degrees internationally. These departments are:

1. **Biotechnology & Life Sciences**
2. **Environmental Science & Industrial Development**
3. **Renewable Energy Engineering Sciences**
4. **Materials Science & Nanotechnology**

These departments deliver specialized programs at advanced levels, adhering to global academic standards.

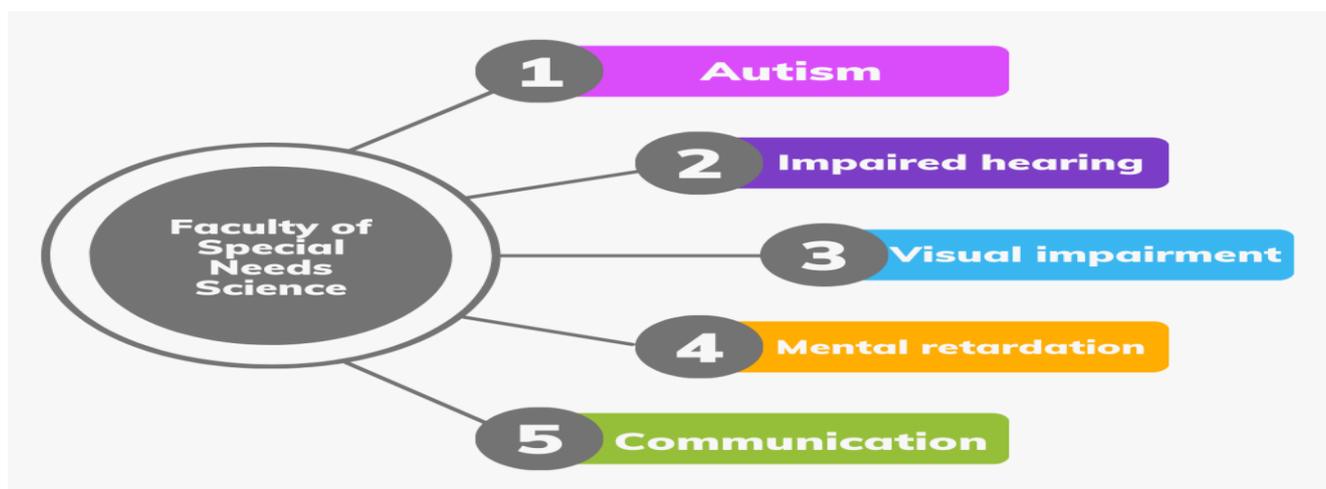


The faculty functions as a transdisciplinary institution, with nanotechnology being one example of its cross-disciplinary approach.



## 2.2 Faculty of Special Needs Science

Faculty of Special Needs Science includes five department which are Autism, Impaired hearing, Visual impairment, Mental retardation and Communication



### 2.3 Institute of Elderly Science Studies

The Institute plays a vital role in shaping the national strategy for scientific research, particularly in the interdisciplinary field of aging. It focuses on training qualified professionals with both scientific and practical expertise, while also developing innovative, integrated service models for the elderly—aimed at fostering social stability and well-being.

It comprises thirteen specialized departments:

1. Geriatric Medicine
2. Geriatric Nursing
3. Geriatric Physical Therapy
4. Geriatric Occupational Therapy
5. Geriatric Nutrition
6. Geriatric Psychology
7. Elderly Engineering and Environmental Studies
8. Elderly Social Studies
9. Elderly Sports and Recreation
10. Elderly Arts
11. Geriatric Dentistry
12. Elderly Tourism
13. Geriatric Rehabilitation Nursing

Together, these departments provide a comprehensive, multidisciplinary approach to aging, supporting both academic advancement and practical solutions for elderly care.

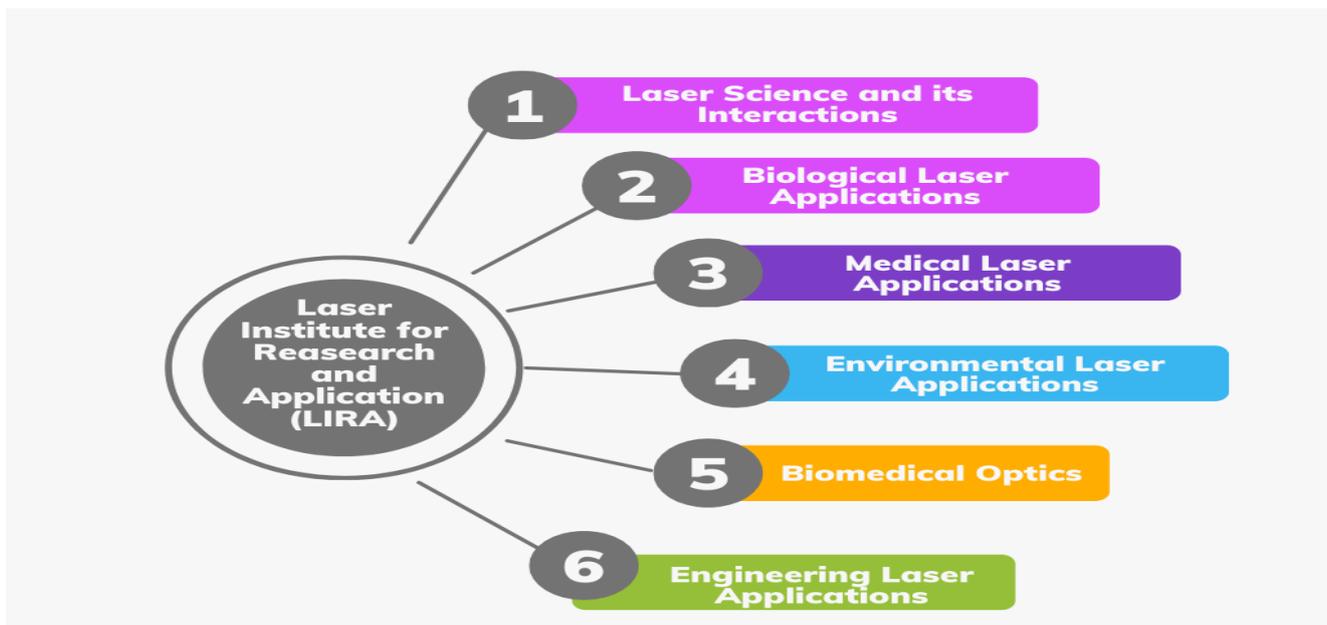


## 2.4 Laser Institute for Research and Application (LIRA)

The Institute is dedicated to cultivating a highly trained and specialized workforce in laser science. As a unique institution in the Middle East, it distinguishes itself from others in the region through its distinct goals, focus areas, and academic mission. It operates on both regional and international scales, offering postgraduate programs that include diplomas, master's, and doctoral degrees.

Its main objective is to equip researchers with advanced academic and practical expertise, contributing to societal development. The Institute places special emphasis on serving the Upper Egypt community—particularly Beni-Suef—by applying laser technologies across a wide range of sectors, including medicine, engineering, the environment, biology, and other scientific fields. It provides research, consultation, and innovative solutions to help address local challenges and drive progress. The Institute also promotes strong international cooperation with various global research centers and institutions, aiming to produce graduates with exceptional academic, professional, and technical capabilities. These graduates are well-prepared to compete in both local and international job markets. Laser science is a cornerstone of the Institute's work, underpinning many scientific experiments, measurement techniques, and safe, cutting-edge applications.

*A diagram of the Institute's departments is presented below*

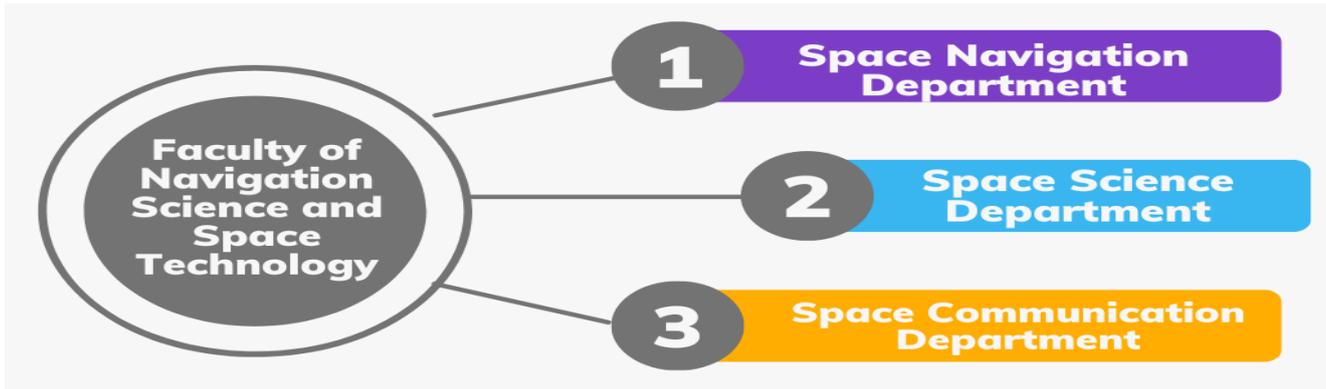


## 2.5 Faculty of Navigation Science and Space Technology

The Faculty of Navigation Sciences and Space Technology is the first of its kind in Egypt and the Arab world, dedicated specifically to the field of space navigation and the applications of space technology. Its primary mission is to prepare highly qualified professionals capable of contributing to the Arab, African, and international space sectors.

The faculty focuses on equipping students, graduates, and researchers with the knowledge and skills needed to engage with current space programs and agencies across Egypt, the Arab region, and Africa. It serves as a hub for transferring advanced space technology and fostering innovation in this vital field.

The faculty is structured into three main departments, as illustrated in the following diagram

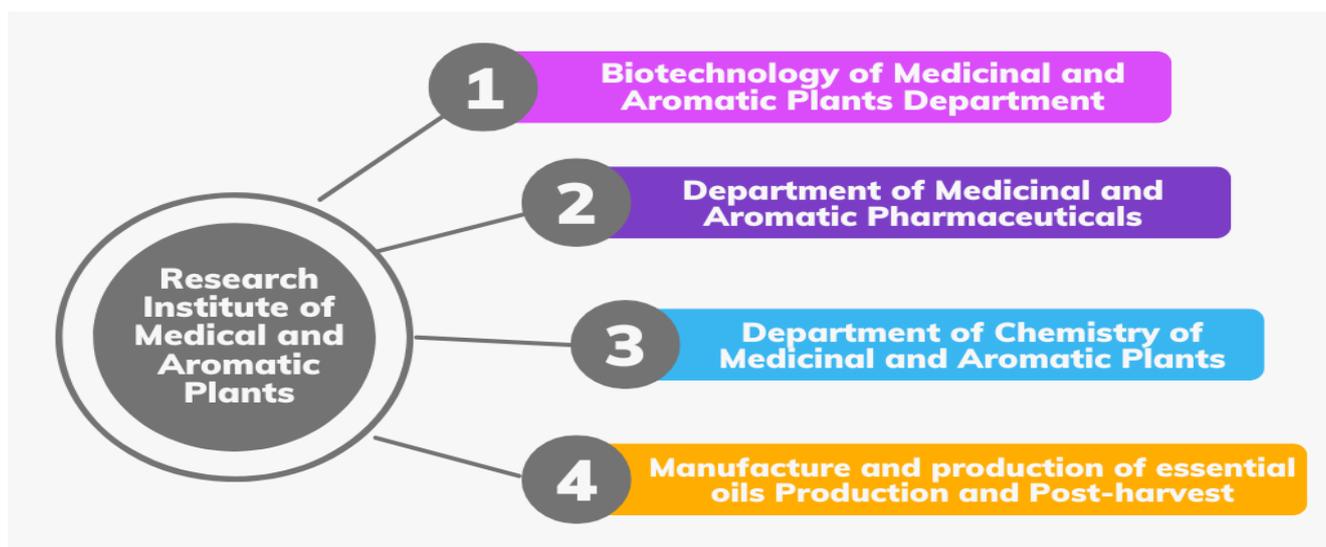


### 2.6 Research Institute of Medical and Aromatic Plants

The Medicinal and Aromatic Plants Research Institute aims to establish itself as a premier academic and research hub, both nationally and internationally, in the study of medicinal and aromatic plants. Its vision is to stay aligned with global scientific advancements while supporting the development and expansion of industries based on these plants, addressing both local and international needs.

The Institute is dedicated to delivering top-tier services that meet the highest standards, focusing on the generation and dissemination of knowledge, the development of innovative research solutions, and the preparation of skilled professionals who can successfully compete in local and regional job markets.

Its core functions include conducting advanced scientific research, offering expert studies and consultancy, and providing training and community outreach services. The Institute comprises four academic departments, detailed in the following diagram



## 2.7 Institute of Small and Medium Enterprises

The **Institute for Small and Medium Enterprises** is committed to offering academic programs and curricula that are unmatched by any other institutes, colleges, or universities in the field of project management. It focuses on addressing key areas such as:

- Management of small and medium enterprises (SMEs)
- Entrepreneurship and community engagement
- Oversight of contracting processes and short-term contracts
- Risk management in SME investments

The Institute is structured into three core departments:

1. **Department of Accounting, Finance, and Investment in Small and Medium Enterprises**
2. **Department of Entrepreneurship in Small and Medium Enterprises**
3. **Department of Small and Medium Enterprise Economics**

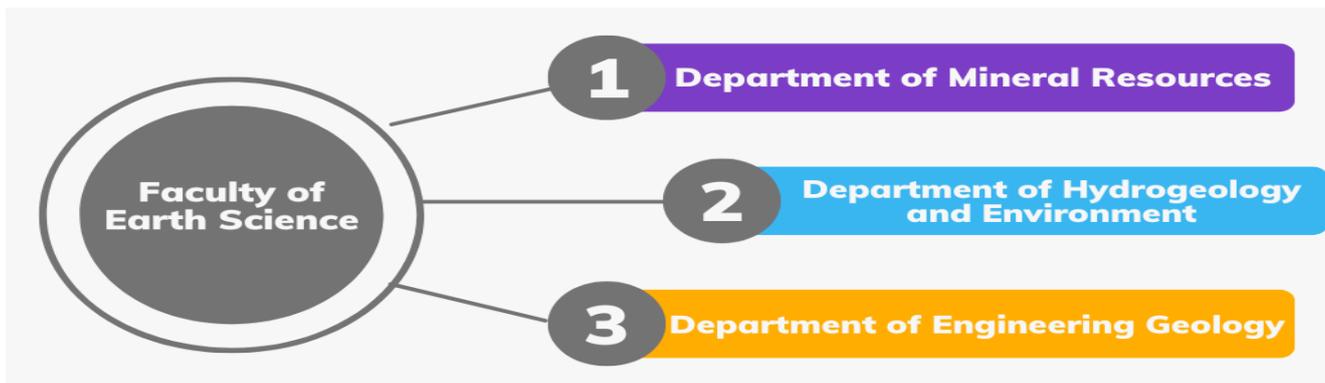
These departments work together to provide comprehensive, specialized education aimed at developing expertise in the SME sector and fostering economic growth and innovation.



## 2.8 Faculty of Earth Science

The Faculty of Earth Sciences is dedicated to preparing highly qualified scientific professionals in the areas of water resources exploration and management, petroleum and mineral resources, and environmental impact assessment. The faculty equips students with practical, hands-on skills that align with the standards set by the National Authority for Quality Assurance of Education and Accreditation. Its mission is to support scientific research and contribute to community development while meeting the evolving needs of the labor market.

The faculty is composed of three academic departments





### [3] Settings and Laboratories in the interdisciplinary fields

The university is equipped with a diverse selection of laboratories spread across its interdisciplinary faculties. For instance, the **Faculty of Postgraduate Studies for Applied Sciences** includes several specialized labs, such as the Central Laboratory, Environmental Sciences and Industrial Development Laboratory, Materials Science and Nanotechnology Laboratory, Renewable Energy Science and Engineering Laboratory, and Biotechnology and Life Sciences Laboratory, along with the Department of Materials Science and Nanotechnology and Cement Chemistry and Technology Laboratory. All these labs are outfitted with the latest advanced devices and equipment.

Moreover, the **Faculty of Navigation Science and Space Technology** features various labs focused on satellite research, including those examining the impact of the space environment on satellites, small satellite collection, spacecraft structures and materials design, satellite imaging and tracking, as well as the development and programming of space missions and the design of electronic devices and sensors.

The **Research Institute of Medicinal and Aromatic Plants** also contains specialized labs, such as the Biotechnology Research Lab, Pharmaceutical Research Laboratory, and the Chemistry Department's Research Lab.

The **Laser Institute for Research and Application (LIRA)** is home to state-of-the-art laser labs, including a 2.5 Joule Nd-YAG Laser Laboratory, Quantum Optics Laboratory, Biological Laser Applications Laboratory, Laser Material Processing Laboratory, Optical Frequency Comb Laser Laboratory, Terawatt Laser Laboratory, Optical Communication Laboratory, Attosecond Laser Laboratory, Environmental Laser Applications Laboratory, and Microbiological Laser Applications Laboratory.

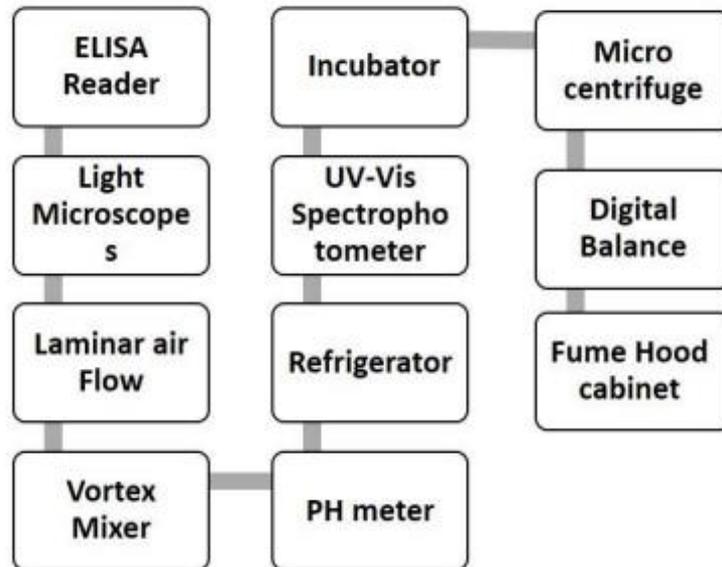
Finally, the **Faculty of Earth Science** boasts a variety of well-equipped laboratories that support various interdisciplinary research initiatives. Below is a list of some of the laboratories and equipment that contribute to this research.

- Biotechnology and Life Sciences Department at Faculty of Postgraduate Studies for Applied Sciences

# Biotech Lab



# Biomedical Chemistry Lab



➤ Environmental Sciences and Industrial Development Department at Faculty of Postgraduate



Studies for Applied Sciences

➤ Materials Science and Nanotechnology Department at Faculty of Postgraduate Studies for Applied Sciences



**Autolab/PGSTAT302N Potentiostat,**



**Plasma enhanced CVD**



**DC sputtering (PH100RPV), Photon, Egvot: [Link](#)**



**Zetasizer Nano ZS90, Malvern, UK- [Link](#)**



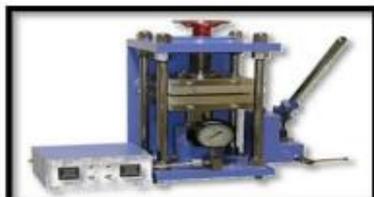
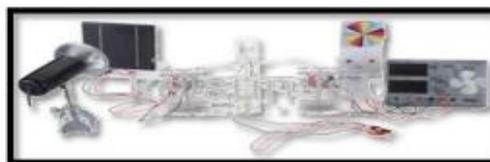
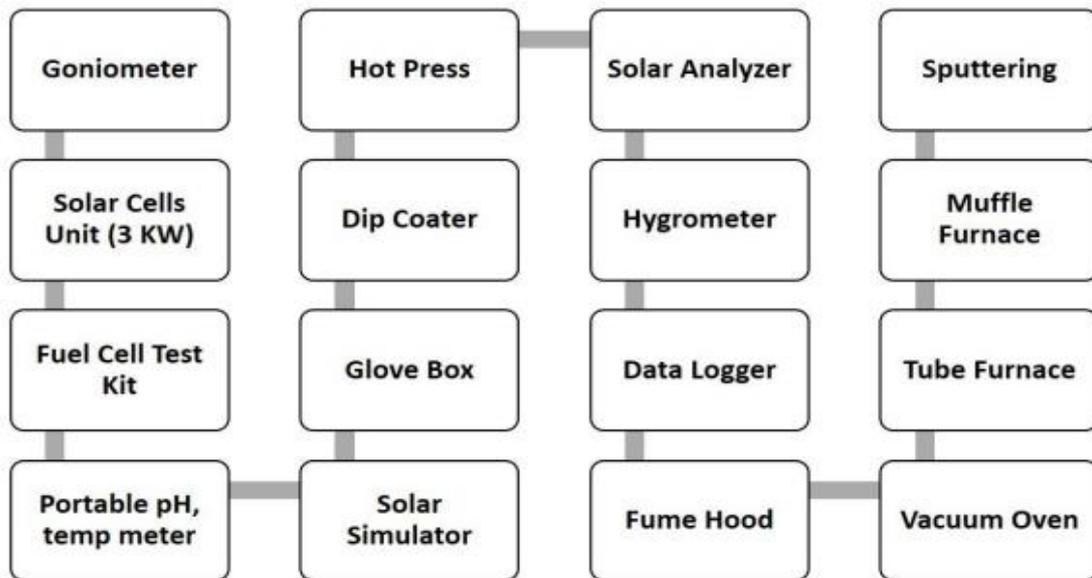
**Solar Simulation (94021A), Oriel inst., USA: [Link](#)**



**BET-Surface area analyzer Gemini VII 2390 Analyzers, Micromeritics, USA: [Link](#)**

- Renewable Energy Science and Engineering Department at Faculty of Postgraduate Studies for Applied Sciences

## Renewable energy lab



➤ **New equipment and machines for faculty of earth science laboratories**

The equipment includes Magnetic stirrer, Shaker, Electrical balance (4digits), Digital water bath, Ball mill, TOC analyzer, COD analyzer, BOD analyzer, DR 6000 UV-visible, Turbidity meter, Flue gases analyzer (high concentration), Flue gases ( analyzer low concentration), Smoke analyzer, PM 2.5 and PM10 analyzer, Noise analyzer, Luminance analyzer and Gravimeter.





Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

<http://www.psas.bsu.edu.eg/>

<http://www.earthsc.bsu.edu.eg/>

<http://www.specialneed.bsu.edu.eg/>

<https://www.olderinst.bsu.edu.eg/>

<http://www.laserinst.bsu.edu.eg/>

<https://www.spacescien.bsu.edu.eg/>

<https://www.medplants.bsu.edu.eg/>

<http://www.projectsinst.bsu.edu.eg/>

[faculty of PostGraduate Studies for Advanced Science \(bsu.edu.eg\)](#)

[Research Plan2020-2024.pdf \(bsu.edu.eg\)](#)

[الانجازات نهائي-محول.pdf \(bsu.edu.eg\)](#)