

SDG6

Water Management

I. Introduction:

Water is the secret of life. Beni-Suef University is seeking always excellence in teaching, research and partnerships concerning water to help solving water crisis, to teach water related courses.

All evidences from the last years are sustainable and repeated periodically either in faculties or out of campus

Every event is available for all attendance free of charge for awareness

II. Teaching

Many faculties at BSU teach courses related directly to water +SDG4

Faculty fees per year for undergraduate student is 1000 L.E.

1-Faculty of science

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

2-Faculty of earth science

http://www.earthsc.bsu.edu.eg/ContentSide.aspx?section_id=4023&cat_id=50

http://www.earthsc.bsu.edu.eg/Content.aspx?side_id=1611&cat_id=50

This is a unique undergraduate and postgraduate faculty at Beni-Suef University among all Egyptian universities

الأهداف الذهبية لقسم جيولوجيا المياه والبيئة – كلية علوم الارض

http://www.earthsc.bsu.edu.eg/Content.aspx?side_id=1612&cat_id=50

3-Faculty of Postgraduate studies for advanced sciences

This is a unique postgraduate faculty at Beni-Suef University among all Egyptian universities

Here are some of the courses related to water

#	Course	Program	Credit hrs
1	Clean Water Technology		1

2	Environmental chemistry and analysis	Diploma of Environmental Science and Industrial development	2+1
3	Water Reclamation Technology		1
4	Environmental Legislative Framework and Methods of Enforcement		1
5	Industrial wastewater technology		1
6	Monitoring and operation of wastewater treatment	Master of Environmental Science and Industrial development	1
7	Membrane science and technology		2
8	Basic hydraulics		2
9	Instrumental Techniques	Diploma and M.Sc. materials science and nanotechnology	2+1

Some examples of registered thesis related to water research

Master nano	Fabrication of nanofiber Composite membrane for industrial waste water treatment
	Preparation and Characterization of polymeric Nanofibers-Based Composites for Heavy metals Removal from Drinking and Ground water
	Synthesis and Characterization of depod TiO₂- Graphene nano Composites for H₂ Production from water
	spectroscopic investigation of semiconducting metal oxide nanoparticles in waste water treatment
	Nanocomposites for Arsenic Removal from Water
	The impact of Main Drains On Qarun Lake And Waste Water Treatment Using Polymer Nanocomposites
	Modified α-hematite nanostructures for photoelectrochemical water splitting

	Optical and Magnetic Properties of Metals Substituted Bismuth Iron Oxide Nanopowder for Water Treatment Application
	Synthesis and characterization of titanate nanotubes for heavy metals and organic pollutants removal from contaminated water
	Multifunctional perovskite nanomaterials for photoelectrochemical water splitting
Phd nano	municipal wastewater treatment using carbon nanotubes-cellulose nanocomposite
	application of nanotechnology for remediation of radioactive pollutants in water
	Developed Hybride Nanomaterials for Highly Efficient Catalytic Water Splitting

Phd environment	Modelling of the Impact of Socio-Economic and Environmental alterations on Surface Water Quality
	Assessment the risks and benefits of discharged alum drinking water treatment plants (DWTPs) sludge on water quality at Fayoum governorate, Egypt
Master environment	HEAVY METALS MONITORING IN WATER, SEDIMENT AND FISH FROM THE NILE RIVER AND THEIR HEALTH RISK ASSESSMENT ON HUMANS AT THE EAST REGION OF BENI-SUEF, EGYPT
	Wastewater purification using immobilized Nanophotocatalysts
	“Evaluation of drinking water quality using GIS: A case study in El Fayoum governorate-Egypt”
	Application of nanotechnology methods in industrial wastewater treatment as an environmentally friendly in industrial food sector
	Adress salinity wells and using the effluent for agriculture and live stock production

	Extracted oils from variant domestic wastewater microalgae communities as a source of biodiesel
	Using of algal free cells, treated and biofilms for Industrial waste water treatment
	study on the electrospinning of polyimide fibers and its performance in waste water
	Potentials of Nano - activated carbon prepared from agricultural Wastes for removal of heavy metals from waste water
	Dual Applications of Duckweed in Wastewater Treatment and Biofuel Production
	Investigation of some environmental impacts of anthropogenic pollutants on River Nile water quality
	Determination, monitoring and risk assessment of selected pesticides in agriculture drain and Nile River, Assiut governorate
	Assessment of the artificially condensed water from atmospheric air as an untraditional water resource: a novel approach for sustainable development of rural and isolated areas
Master biotechnology	Optimization of algal biomass recovery using nanoparticles

http://www.psas.bsu.edu.eg/ContentSide.aspx?section_id=11742&cat_id=18

http://www.psas.bsu.edu.eg/Content.aspx?section_id=5745&cat_id=18

اللوائح الدراسية والمقررات الدراسية لقسم علوم البيئة والتنمية الصناعية

http://www.psas.bsu.edu.eg/Content.aspx?section_id=9278&cat_id=141

4- Faculty of agriculture (with a special department of water and soil)

http://www.agri.bsu.edu.eg/Departments.aspx?cat_id=23

http://www.agri.bsu.edu.eg/Content.aspx?section_id=10067&cat_id=23

5- Faculty of navigation science and space technology

http://www.spacescienc.bsuegypt.edu.eg/Sector_Home.aspx?cat_id=285

This is a unique undergraduate and postgraduate faculty at Beni-Suef University among all Egyptian universities

6- Faculty of Engineering

http://www.eng.bsuegypt.edu.eg/Departments.aspx?cat_id=16

This year faculty of engineering will adopt the bylaws of Alexandria University and will open at the next year 2021 water engineering department

III. Research:

Separate report tracking research and projects concerning water is submitted yearly an example is appended

اللوائح الدراسية والمقررات الدراسية لقسم علوم البيئة والتنمية الصناعية

http://www.psas.bsuegypt.edu.eg/Content.aspx?section_id=9278&cat_id=141

IV. Outreach and stewardship:

Centre of excellence in water research in cooperation with 5 Egyptian universities and 5 US universities funded from USAID

This centre has 5 pillars namely:

Exchange and training, education, governance, sustainability, research

Beni-Suef University is the co-chair for the sustainability phase

http://www.bsuegypt.edu.eg/News.aspx?NID=95206&cat_id=1

<https://www.egyptcoewater.org/sustainability/> **+SDG17**

From the Government of Egypt, the project is supported by the Egyptian Ministry of Higher Education and Research, the Academy of Scientific Research and Technology, the Ministry of Water Resources and Irrigation, the Alexandria and Beni Sweif Governorates, the National Research Center, the Center for Metallurgical Research and Development Institute, the National Water Research Center, and the Water Desalination Alliance.

The Consortium of the project includes several prestigious US and Egyptian universities: University of California at Santa Cruz, Utah State University, Washington State University, Temple University, Ain Shams University, Aswan University, Beni Suef University and Zagazig University.

SDG17 +بروتوكول تعاون مع شركة مياه الشرب والصرف الصحي

http://www.bsu.edu.eg/Content.aspx?side_id=62&cat_id=1

SDG17+بروتوكول تعاون مع وزارة البيئة

http://www.bsu.edu.eg/Content.aspx?side_id=60&cat_id=1

مشاريع بحثية مع جامعة الأميرة نورة بنت عبدالرحمن بالمملكة العربية السعودية ممول بمبلغ قدره 171 ألف ريال سعودي أي ما يعادل 500 ألف جنيه مصري.

http://www.bsu.edu.eg/News.aspx?NID=26391&cat_id=1

وزير التعليم العالي ورئيس جامعة بني سويف والمحافظ يفتتحون البئر الاستكشافي للمساهمة في تنفيذ مشروعات زراعية بالجامعة

http://www.bsu.edu.eg/News.aspx?NID=64372&cat_id=1

http://www.bsu.edu.eg/News.aspx?NID=64327&cat_id=1

STDF funded project titled” Advanced removal of selected pharmaceutical residues from wastewater using nano-metal/organic frameworks (MOFs)”

اجتماع مجلس ادارة مركز الدراسات وابحات المياه رقم 3)

http://www.bsu.edu.eg/News.aspx?NID=73469&cat_id=1

علوم الملاحة وتكنولوجيا الفضاء في عيون الصحافة .. جريدة الوطن .. علوم الملاحة وتكنولوجيا الفضاء " تحسم جدل المياه الجوفية شرق النيل

http://www.bsu.edu.eg/News.aspx?NID=64425&cat_id=1

استاذ مساعد بعلم بني سويف يفوز بمشروع معالجة المياه ممول بمبلغ 595 ألف جنيه

http://www.bsu.edu.eg/News.aspx?NID=33805&cat_id=1

مجلس جامعة بني سويف يوافق على تبعية معهد تكنولوجيا المياه والبتترول لجامعة بني سويف

طلبة حاسبات بني سويف ينجحون في تصميم فكرة شريحة يتم تركيبها علي عدادات المياه لقياس معدل الاستهلاك

http://www.bsu.edu.eg/News.aspx?NID=1237&cat_id=1

http://www.bsu.edu.eg/News.aspx?NID=10938&cat_id=1

<http://www.earthsc.bsu.edu.eg/Backend/Uploads/PDF/%D9%85%D8%B7%D9%88%D9%8A%D9%87%20%D8%A7%D9%84%D9%85%D8%B1%D9%83%D8%B2-%D9%85%D8%AD%D9%88%D9%84.pdf>

كلية علوم الارض تفوز بمشروعين بحثيين بتمويل قدره 80 الف جنيه

http://www.bsu.edu.eg/News.aspx?NID=61019&cat_id=1

رئيس جامعة بنى سويف: فوز الجامعة بتمويل مشروع قدره مليون وستمائة وخمسين ألف جنيه من وزارة التعليم العالي

http://www.bsu.edu.eg/News.aspx?NID=60037&cat_id=1

رئيس جامعة بنى سويف: تمويل مشروع بحثي فى مجال معالجة المياه من أكاديمية البحث العلمي والتكنولوجيا

http://www.bsu.edu.eg/News.aspx?NID=60088&cat_id=1

رئيس جامعة بنى سويف فى زيارة لمشروع معالجة مياه الصرف الصحي بقرية البساتين بصحبة المحافظ والوفد الأمريكى

http://www.bsu.edu.eg/News.aspx?NID=59742&cat_id=1

جامعة بنى سويف تنفرد بتقديم مشروع بحثي متميز عن استخدام الخامات المصرية بدلاً من المستوردة فى مجال معالجة المياه

http://www.bsu.edu.eg/News.aspx?NID=56504&cat_id=1

رئيس جامعة بنى سويف : خطة لتوعية الطلاب بترشيد استهلاك المياه

http://www.bsu.edu.eg/News.aspx?NID=49313&cat_id=1

جامعة بنى سويف تطلق مبادرة " البيئة الخضراء " عن كيفية ترشيد المياه والمحافظة على البيئة

http://www.bsu.edu.eg/News.aspx?NID=60336&cat_id=1

SDG2+رئيس جامعة بنى سويف: ورش عمل عن استخدام تحلية المياه فى الاغراض الزراعية

http://www.bsu.edu.eg/News.aspx?NID=48763&cat_id=1

<https://www.elfagr.com/3095202>

<https://cutt.ly/Se4Xqzk>

<https://www.elbalad.news/3388882>

<https://www.elwatannews.com/news/details/3725821>

الأهداف الذهبية لقسم جيولوجيا المياه والبيئة – كلية علوم الارض

http://www.earthsc.bsu.edu.eg/Content.aspx?side_id=1612&cat_id=50

المشروعات الحالية لقسم جيولوجيا المياه والبيئة – كلية علوم الارض

http://www.earthsc.bsu.edu.eg/Content.aspx?side_id=1615&cat_id=50

مشروعات قسم علوم البيئة والتنمية الصناعية

http://www.psas.bsu.edu.eg/Content.aspx?section_id=420&cat_id=18

الابحاث لقسم علوم البيئة والتنمية الصناعية كلية الدراسات العليا للعلوم المتقدمة

http://www.psas.bsu.edu.eg/Content.aspx?section_id=5780&cat_id=18

SDG6+SDG7 مشروع تسخين المياه بالطاقة الشمسية

https://www.bsu.edu.eg/News.aspx?NID=6392&cat_id=1

رئيس جامعة بني سويف : انشاء مركز تطوير وسائل المحافظة على
SDG17 البيئة+

https://www.bsu.edu.eg/News.aspx?NID=96324&cat_id=1

Some of the written protocols

- المذكرة المعروضة من أ.د/ عميد كلية علوم الأرض بشأن مقترح بروتوكول التعاون المشترك بين الكلية وشركة الغربية لمياه الشرب والصرف الصحي وذلك في مجال الدعم الفني والبحث العلمي وذلك على النحو المعروض .
- - المذكرة المعروضة من أ.د/ عميد كلية علوم الأرض بشأن بروتوكول التعاون بين مركز التميز العلمي والتكنولوجي (وزارة الإنتاج الحربي) و كلية علوم الأرض (جامعة بني سويف) لتنقية المياه السطحية وتحلية مياه البحر ومعالجة مياه الصرف الصحي وإعادة استخدامها من المشروعات التنموية بالدولة .
- بروتوكول تعاون بين جهاز مدينة بني سويف الجديدة هيئة المجتمعات العمرانية الجديدة ووحدة الاستشارات والدعم الهندسي والتكنولوجي بكلية الهندسة بخصوص قيام وحدة الاستشارات والدعم الهندسي والتكنولوجي بالإشراف على أعمال تنفيذ بعض مشروعات المياه والصرف الصحي والطرق ومباني الإسكان والخدمات بالمدن الجديدة .

<https://www.era-learn.eu/network-information/networks/prima/section-2-call-2019-multi-topic/enhancing-diversity-in-mediterranean-cereal-farming-systems>

+SDG17+SDG2

Enhancing diversity in Mediterranean cereal farming systems

Home / Explore Partnerships / Partnerships / PRIMA / Section 2 Call 2019 - Multi-topic / Enhancing diversity in Mediterranean cereal farming systems / Beni-Suef University

Full name Beni-Suef University

Short name BSU

Type of organisation Public organisation

Partner Role Partner

Country Egypt

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Status Quo of the Egyptian Water Higher Education, Research and Capacity Building: The Center of Excellence for Water

Cairo Water Week

24. October 2019

Cairo

Lead Convener:

- The American university in Cairo – Center of Excellence for Water

Name of Contributing institutions:

- Alexandria University, Ain Shams University, **Beni-Suef University**, Zagazig University, Aswan University, Temple University, Utah State University, University of California at Santa Cruz, Washington State University

Chair: Prof. Hani Sewilam, Lead Scientist, Center of Excellence for Water

Co-Chair: Prof. Kirti Rajagopalan, Washington State University

Facilitator: Prof. Yasser Elshayeb, Chief of Party, Center of Excellence for water

Rapporteur: Prof. Walid El Barki, Associate Director, Center of Excellence for Water



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Brief description of the session:

- The Center of Excellence for Water aims at boosting Egyptian Higher Education, Research and Training, in the field of Water Sciences and Engineering. Since its start, the CoE partners (more than 20 partners from Government, Universities, Research Centers, Private Sectors and Foundations) have been working to study the status-quo and capacities of the Egyptian Higher Education and Research Institutions. An in depth needs assessment has been carried out by the CoE and its results reveals interesting facts, potentials, and needs for Higher Education curricula, Research Grants, and Training (Capacity Building).
- The workshop will be divided into two mains sessions, the status-quo of Higher Education, research and capacity building, and challenges in relation to the Egyptian Water Strategy within the Egyptian Strategy for Sustainable Development (3 hours), and the way forward for the Center of Excellence to address those challenges and filling the gaps (2 hours)
- Opening:
 - The opening session will start by two presentations from the Lead Scientist and Chief of Party of the Center Water of Excellence for Water on the water challenges in Egypt and the concept of the COE.
- Session I:
 - The second session is devoted to introducing the components of the COE and how the COE will be a platform of cooperation between university, industry, private and public sectors in research, education and capacity building. The session will include four presentations and open panel discussion.
 - Representative of the US universities
 - Acting Director of the COE
 - Two Egyptian university professors
- Session II:
 - The first session has the objective of highlighting the gaps between academia and industry in terms of research and education. This session will include four presentations and open panel discussion. The speakers are;
 - Representative of the private
 - Representative of the public sector
 - Two university professors



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Opening Session – Water Challenges and COE

Chair: Hani Sewilam, Lead Scientist, Center of Excellence for Water, AUC

Rapporteur: Waleed Elbarki, Associate Director, Center of Excellence for Water, Alexandria University

10:00	Prof. Hani Sewilam	AUC – COE Lead Scientist	Session Chair/Introduction to the Session and Water Challenges in Egypt
10:20	Prof. Yasser Elshayeb	AUC – COE Chief of Party	COP – Overview of the COE and its Partnerships
10:40	Prof. Hesham Gaber	Vice President of Alexandria University	The Vision of Alexandria for the COE
11:00	Dr. Iman Sayed	Head of planning Sector Ministry of Water Resources and Irrigation	Egyptian Water Strategy and Expected Role of Universities and Research Centers
11:20	Discussion		

11:40 – 12:00 Coffee Break

Session II – The Center of Excellence as a Platform for Education, Research and Capacity Building

Chair: Hani Sewilam, Lead Scientist, Center of Excellence for Water, AUC

Rapporteur: Waleed Elbarki, Associate Director, Center of Excellence for Water, Alexandria University

The session introduces the components of the COE and how it can perform as a water platform of cooperation between academia, industry, private and public sectors in education, research, and capacity building.

Main objectives of the session:

- Articulate the importance of a national focal multi-axial platform embracing water activities in Egypt
- Consider the needs and requirements for providing competent water engineers, in the national and regional water market
- Highlight the need for planned, strategic and long-term collaborative and interdisciplinary market-driven research
- Stress the importance of professional development and continuous education of personnel involved in water sector in Egypt

Main outcomes of the session:

- Clarify the specific importance and objective the COE
- Achieve a general framework of knowledge and skills required for a competent water engineer
- Emphasize the importance and the role of scientific research in developing the performance of the water sector, and maximizing the utilization of different water types
- Grasp the importance of raising the efficiency of personnel involved in the water sector in Egypt and the continuous development of their professional



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Questions for Panelists

- How can Education and Research contribute to solving Water Problems in Egypt?
- What is the role of Universities vs. Research Centers in solving Water challenges?
- How can a Center of Excellence contribute to achieving better management of Water Resources in Egypt
- Information vs. Education, what is the difference?

12:00 – 12:30 **Keynote: Kirti Rajagopalan**, Washington State University
Informing regional-scale water management: models and applications

12:30 – 13:20

Panel Discussion

Moderator: Yasser Elshayeb

Panelists:

Prof. Roushdy Zahran, Former President of Alexandria University

Prof. Hoda Soussa, Ain Shams University

Prof. Ahmed Farghaly, Dean of the Faculty of Postgraduate Studies and Research, Beni Suf University

Prof. Hesham Mostafa, Vice President of the National Water Research Center

13:20 Discussion

13:40 – 15:00 Lunch Break

Session III – Role of various stakeholders in Solving Water Challenges

Chair: Essam Shaban, Technical Advisor, Center of Excellence for Water, AUC

Rapporteur: Waleed Elbarki, Associate Director, Center of Excellence for Water, Alexandria University

The session discusses the role and contribution of stakeholders and private sector in building more inclusive model contributing to the Egyptian Water Sector.

Main objectives of the session:

- Highlight the importance of Public and Private sectors in solving National Challenges
- Stress the importance of PPP and Academia to Address water challenges
- Highlight the need for different qualifications/Skills of graduates

Main outcomes of the session:

- Clarify the role of various entities (public / private / academia) in solving water scarcity problems
- Propose sets of skills needed for the Water sector market

Questions for Panelists

- How can PPP happen in the field of Water sciences and Engineering?
- What are the lacking skills of current graduates?
- How can the CoE address concerns from the Private sector
- What is the exact role of public and private stakeholders in solving Egyptian Water Problems?
- Skills, Qualifications and knowledge. What is really needed in the market?

Keynote: Mohamed Eldemerdash, CEO Engazaat,
“The Water Challenge of Egypt as seen by the Private Sector”

15:00 – 16:00



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Panel Discussion

Moderator: Yasser Elshayeb

Panelists:

Prof. Hossam Shawky, DRC

Dr. Rasha Elkhoully, SEKEM Group, Vice President of Heliopolis University

Dr. Ashley Bae, University of California at Santa Cruz

Dr. Aly Elbahrawy, Ain Shams University

16:00 – 16:30	Discussions and Closing
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مركز الدراسات و بحوث المياه (وحدة ذات طابع خاص بكلية علوم الارض)



نشأه المركز : الدراسات و ابحاث المياه

وحدة ذات طابع خاص تتبع كلية علوم الارض – جامعة بنى سويف و يكون له الاستقلال فى ادارة شئونه المالية و الادارية و الفنية.

تعتبر هذه الوحدة من المراكز المتخصصة على مستوى الجامعات المصرية فى اجراء كافة الدراسات الخاصة بالادارة المستدامة لمصادر المياه (التقليدية و الغير تقليدية و المتجددة و الغير متجددة) من حيث الاستكشاف و التقييم والتنقية و المعالجة واعادة الاستخدام كذلك التحلية و رقابة و توكيد الجودة لكافة العمليات. هذا بالاضافة الى الدراسات الخاصة بالثروة المعدنية من ناحية الاستكشاف و التقييم والمعالجة مع تقديم الاستغلال الامثل لها بالاضافه الى



جامعة بنى سويف
كلية علوم الارض
مركز الدراسات وبحوث المياه



تخليق بعض المعادن الصناعيه الهامه من المواد الاوليه (معادن- مخلفات طبيعيه) واستخدامها فى التطبيقات الصناعيه والبيئيه المختلفه.

الرؤيه:

يسعى المركز ليكون محور متميزا للبحوث المتعلقة بالمياه على مستوى الجامعات المصريه من حيث التصميم والتنفيذ والتقييم والمتابعه الفنيه من خلال فريق عملى من داخل وخارج الجامعات المصريه لديه القدره على الرياده والابتكار وايضا فى مجالات استكشاف وإدارة الموارد المائية البترول والثروة المعدنيه والبيئيه لخدمه وتنميه المجتمع وتحقيق رغباته

الرساله:

تكوين فريق عمل يرنو الى الإبداع والتميز فى مجالات خدمه المجتمع وحل مشكلاته من خلال أنشطه المركز المختلفه

قيم المركز:

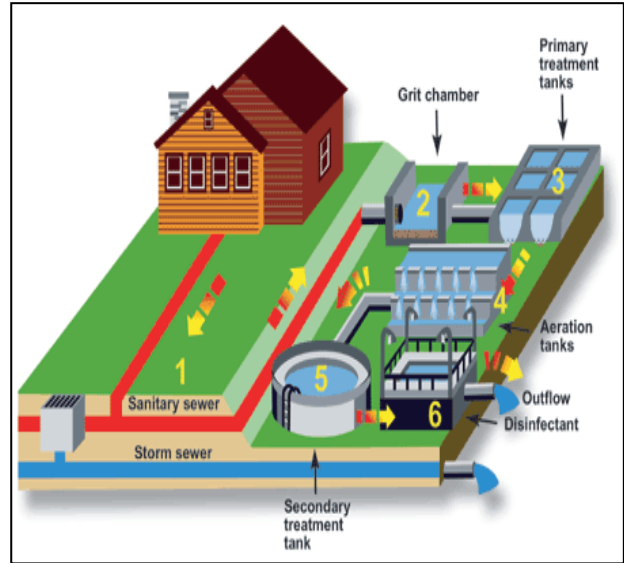
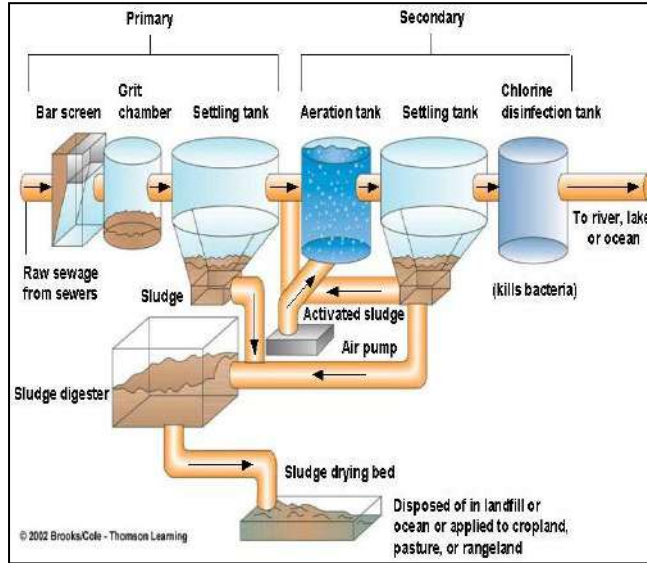
فريق عمل متميز ينتهج ثقافه عمل يسودها ميثاق الشرف الجامعي وتعتمد على :

- المعرفة المتميزه
- التطوير والتحسين المستمر
- الشفافيه
- المصداقيه
- إرضاء العميل الداخلي والخارجي
- الانتماء للجامعه
- احترام الآخرين
- التقييم الذاتى

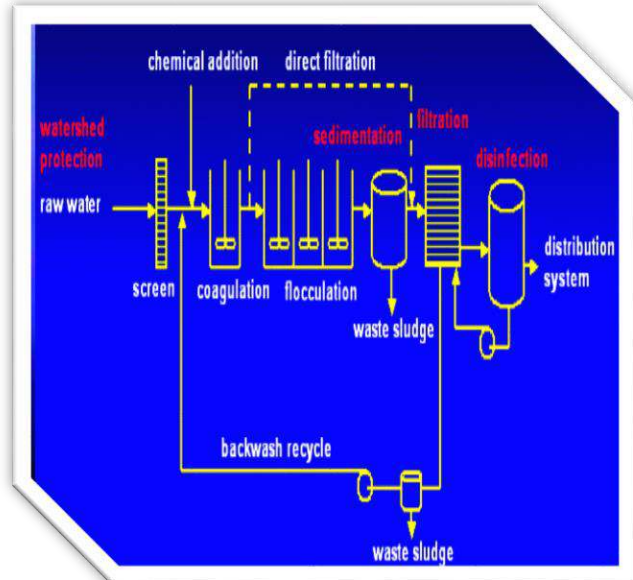
○ التطوير الذاتى

الاهداف الاستراتيجية للمركز

- تصميم وتنفيذ وحدات معالجة لجميع انواع مياه الصرف الصحى والزراعى والصناعى.



- اجراء الدراسات الخاصة بانشاء محطات معالجة مياه الصرف الصحى و اعادة تأهيل المحطات القائمة و رفع كفاءتها
- تحلية المياه (مياه البحر والمياه الجوفية)
- تنقية المياه السطحية و الجوفية



- اعداد الدراسات الخاصه بالادارة المستدامة لكافه مصادر المياه



جامعة بنى سويف
كلية علوم الارض
مركز الدراسات وبحوث المياه



- اجراء الدراسات الخاصة بارتفاع منسوب المياه الجوفية و تاثيراتها السلبية على البيئة المحيطة و البنية التحتية و كذلك جودة التربة الزراعية.
- اجراء الدراسات الخاصة بتقييم الوضع الجيولوجى و التركيبى و اعداد التقارير و الخرائط الجيوتقنية لمختلف المواقع الانشائية.
- اجراء الدراسات الخاصة باختيار المواقع المناسبة لانشاء المدافن الصحية للمخلفات الصلبة و كذلك التصميم و الانشاء.
- اجراء الدراسات الخاصة باعادة استخدام المخلفات الطبيعى والصناعى فى التطبيقات البيئية.
- اجراء الدراسات الخاصة بتقييم الخامات المختلفة وكيفية الاستفادة منها و رفع جودتها.
- اجراء الدراسات الحقلية و العملية لاستكشاف و تقييم جميع انواع المحاجر (رخام, طفلة, حجر جبرى, دولوميت, رمل, زلط, الخ).
- اجراء الدراسات الخاصة بتقييم الأثر البيئي لكافة الانشطه
- تقديم الدعم الفنى والاستشارات العلميه لكافة المنشآت الصناعيه
- عقد ورش العمل والدورات التدريبية المتعلقة بأنشطه المركز

رئيس مجلس اداره المركز

ا.د سيد عبد القادر

محمول:

ايميل:

مدير المركز د. فتحى ابو السعود

محمول : 01221326325 - 01148884443



جامعة بنى سويف
كلية علوم الارض
مركز الدراسات وبحوث المياه



ايميل: fathy732005@yahoo.com-fathy1973@esu.bsu.edu.eg



Beni-Suef University

Beni-Suef

Survey on Research
publications in Water

Example (yearly report submitted to University Council)

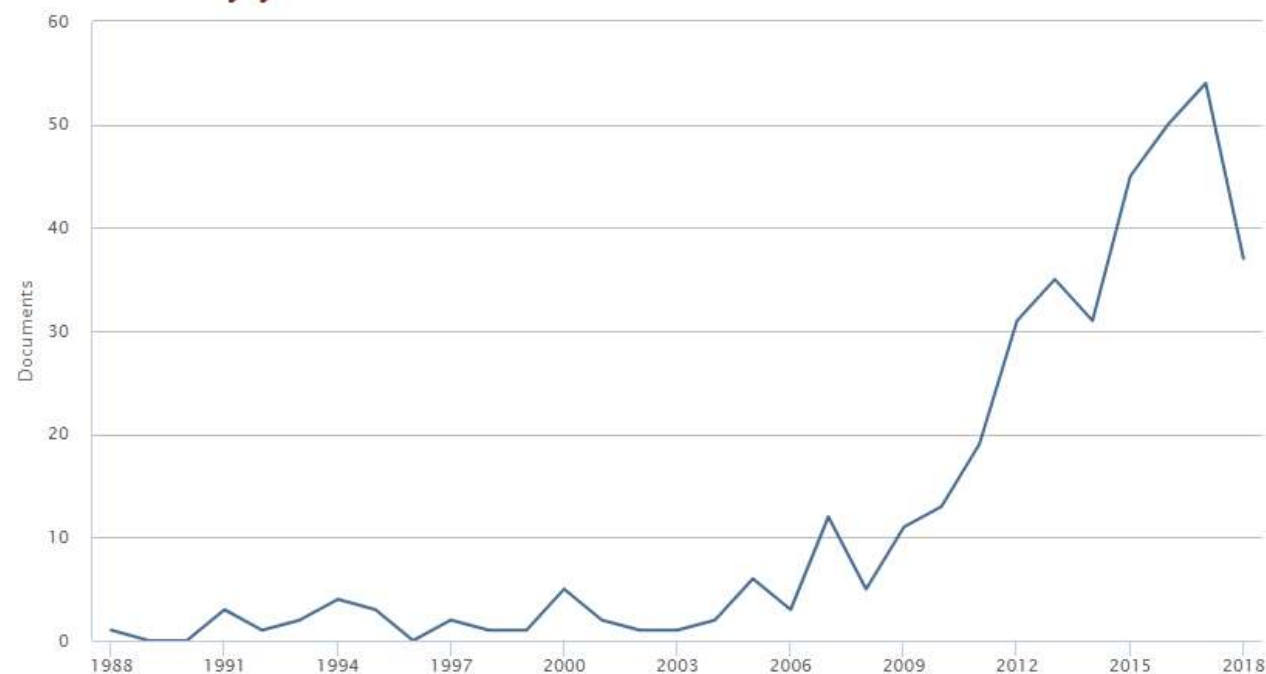
TITLE-ABS-KEY (water) AND (LIMIT-TO (AFFILCOUNTRY , "Egypt")) AND (LIMIT-TO (AF-ID , "Beni-Suef University" 60007948))

381 document results Select year range to analyze: 1988 to 2018 Analyze

Year	Source	Author	Affiliation	Country/Territory	Document type	Subject area
------	--------	--------	-------------	-------------------	---------------	--------------

Year	Documents
2018	37
2017	54
2016	50
2015	45
2014	31
2013	35
2012	31
2011	19
2010	13
2009	11
2008	5
2007	12
2006	3
2005	6
2004	2

Documents by year



07105gz4r.1103.y.https://www.scopus.com/mplbci.ekb.eg/term/analyzer.uri?sid=a01101aba400fdccd31e04c348e1d0d6&origin=resultslist&src=s&s=TITLE-ABS-KEY%28water%29&sort=plf-f&...

TITLE-ABS-KEY (water) AND (LIMIT-TO (AFFILCOUNTRY , "Egypt")) AND (LIMIT-TO (AF-ID , "Beni-Suef University" 60007948)) [Back to results](#)

381 document results Select year range to analyze: 1988 to 2018 [Analyze](#)

Year	Source	Author	Affiliation	Country/Territory	Document type	Subject area
------	--------	--------	-------------	-------------------	---------------	--------------

Author Documents

- ☒ Sayyah, S.M. 19
- ☒ Hassanien, M.M. 17
- ☒ Farghali, A.A. 14
- ☒ Seadawy, A.R. 14
- ☒ Ahmed, A. 11
- ☒ Abdel-Khalek, A.A. 10
- ☒ Abdelwahab, N.S. 10
- ☒ Abd-Elhady, M.S. 9
- ☒ Allam, A.A. 9
- ☒ Elroby, S.A. 9
- ☐ Abdelkawy, M. 8
- ☐ Hassanien, A.E. 8
- ☐ Khedr, M.H. 8
- ☐ Shaban, M. 8

Documents by author

Compare the document counts for up to 15 authors

Author	Documents
Sayyah, S.M.	19
Hassanien, M.M.	17
Farghali, A.A.	14
Seadawy, A.R.	14
Ahmed, A.	11
Abdel-Khalek, A.A.	10
Abdelwahab, N.S.	10
Abd-Elhady, M.S.	9
Allam, A.A.	9
Elroby, S.A.	9
Abdelkawy, M.	8
Hassanien, A.E.	8
Khedr, M.H.	8
Shaban, M.	8

07105gz4r.1103.y.https://www.scopus.com/mplbci.ekb.eg/term/analyzer.uri?sid=a01101aba400fdccd31e04c348e1d0d6&origin=resultslist&src=s&s=TITLE-ABS-KEY%28water%29&sort=plf-f&sdt=cl&sot=b&sl=20&count=381&analyzeResults=Analyze+r...

dr ahmed.docx dr.smaa.docx dr.ayman.docx List_of_authors.xls Publications_by_Su....xls [Show all](#)

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9:01 PM 5/21/2018

07105gz4r.1103.y.https://www.scopus.com/mplbci.ekb.eg/term/analyzer.uri?sid=a01101aba400fdccd31e04c348e1d0d6&origin=resultslist&src=s&s=TITLE-ABS-KEY%28water%29&sort=plf-f&...

TITLE-ABS-KEY (water) AND (LIMIT-TO (AFFILCOUNTRY , "Egypt")) AND (LIMIT-TO (AF-ID , "Beni-Suef University" 60007948)) [Back to results](#)

381 document results Select year range to analyze: 1988 to 2018 Analyze

Year	Source	Author	Affiliation	Country/Territory	Document type	Subject area
------	--------	--------	-------------	-------------------	---------------	--------------

Affiliation	Documents
<input checked="" type="checkbox"/> Beni-Suef University	381
<input checked="" type="checkbox"/> Cairo University	83
<input checked="" type="checkbox"/> King Saud University	24
<input checked="" type="checkbox"/> King Abdulaziz University	23
<input checked="" type="checkbox"/> Cairo University Faculty of Phar...	22
<input checked="" type="checkbox"/> National Research Centre	22
<input checked="" type="checkbox"/> Taibah University	17
<input checked="" type="checkbox"/> King Saud University College of...	16
<input checked="" type="checkbox"/> Minia University	16
<input checked="" type="checkbox"/> Mansoura University	16
<input type="checkbox"/> Ain Shams University	15
<input type="checkbox"/> Cairo University Faculty of Scie...	12
<input type="checkbox"/> Al Jouf University	12
<input type="checkbox"/> Suez Canal University	10

Documents by affiliation

Compare the document counts for up to 15 affiliations

Affiliation	Documents
Beni-Suef University	381
Cairo University	83
King Saud University	24
King Abdulaziz University	23
Cairo University Faculty of Pharmacy	22
National Research Centre	22
Taibah University	17
King Saud University College of Science	16
Minia University	16
Mansoura University	16
Ain Shams University	15
Cairo University Faculty of Science	12
Al Jouf University	12
Suez Canal University	10

07105gz4r.1103.y.https://www.scopus.com/mplbci.ekb.eg/term/analyzer.uri?sid=a01101aba400fdccd31e04c348e1d0d6&origin=resultslist&src=s&s=TITLE-ABS-KEY%28water%29&sort=plf-f&sdt=cl&sot=b&sl=20&count=381&analyzeResults=Analyze+r...

dr ahmed.docx

dr.smaa.docx

dr.ayman.docx

List_of_authors.xls

Publications_by_Su....xls

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Windows Taskbar Icons

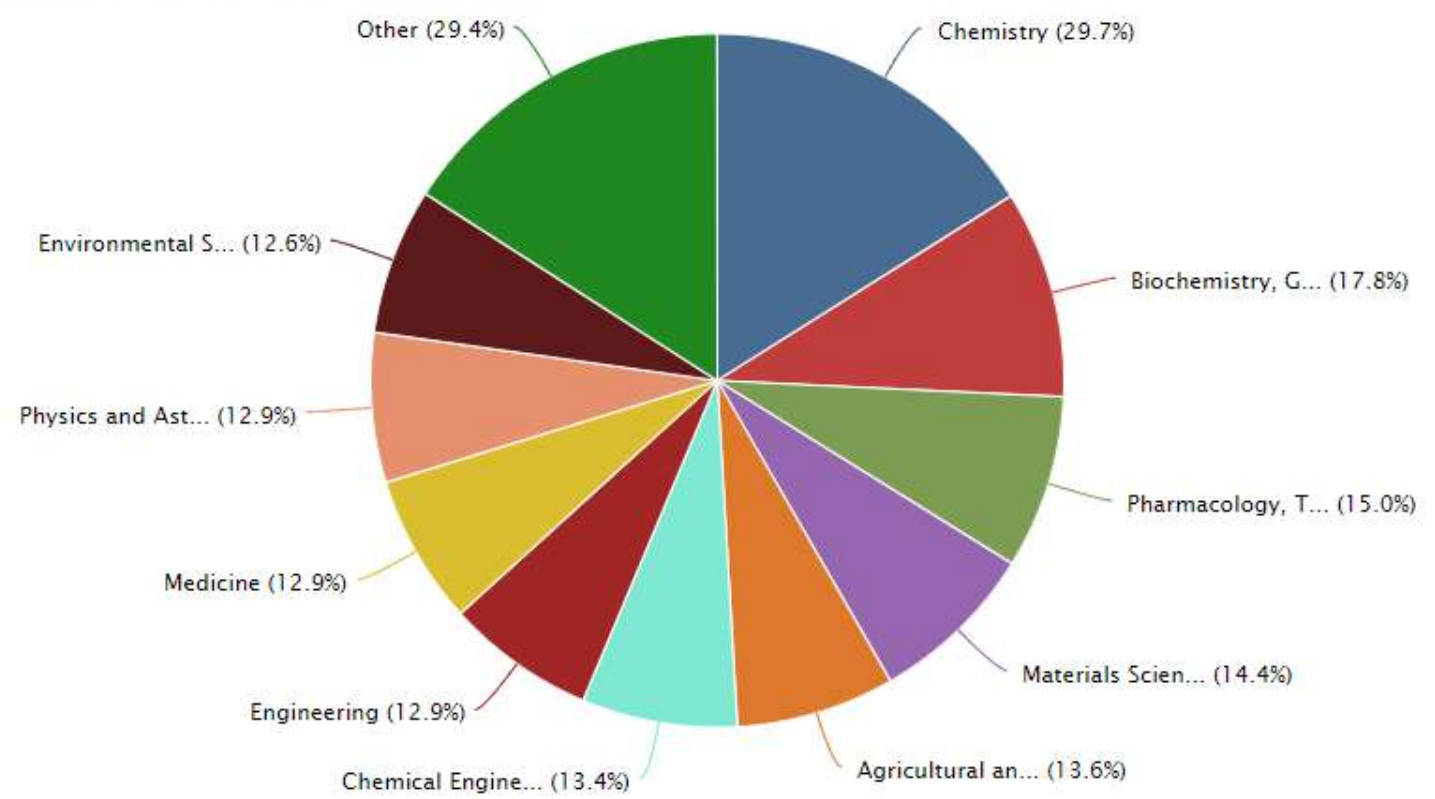
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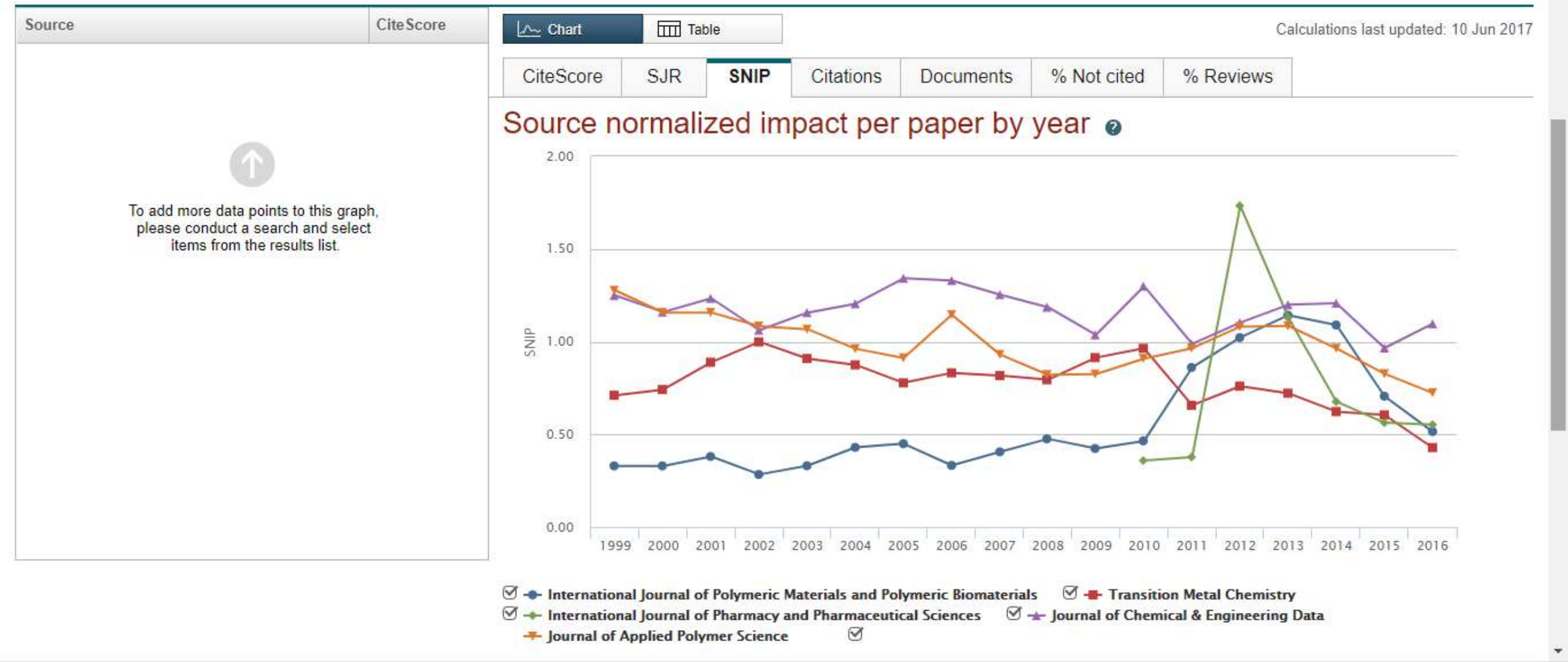
381 document results
 Select year range to analyze:
 1988 to 2018
 [Analyze](#)

Year	Source	Author	Affiliation	Country/Territory	Document type	Subject area
------	--------	--------	-------------	-------------------	---------------	--------------

Subject Area	Documents
Chemistry	113
Biochemistry, Genetics and Molecu...	68
Pharmacology, Toxicology and Pha...	57
Materials Science	55
Agricultural and Biological Sciences	52
Chemical Engineering	51
Engineering	49
Medicine	49
Physics and Astronomy	49
Environmental Science	48
Immunology and Microbiology	27
Earth and Planetary Sciences	25
Computer Science	12
Energy	12
Veterinary	10
Mathematics	9

Documents by subject area





Search on web of Sience by “Water “, Beni-Suef University, Egypt from 2005-2018



Results Analysis

[<<Back to previous page](#)

Web of Science Categories

Publication Years

Document Types

Organizations-Enhanced

Funding Agencies

Authors

Source Titles

Book Series Titles

Meeting Titles

Countries/Regions

Editors

Showing **313** records for TOPIC: (water)

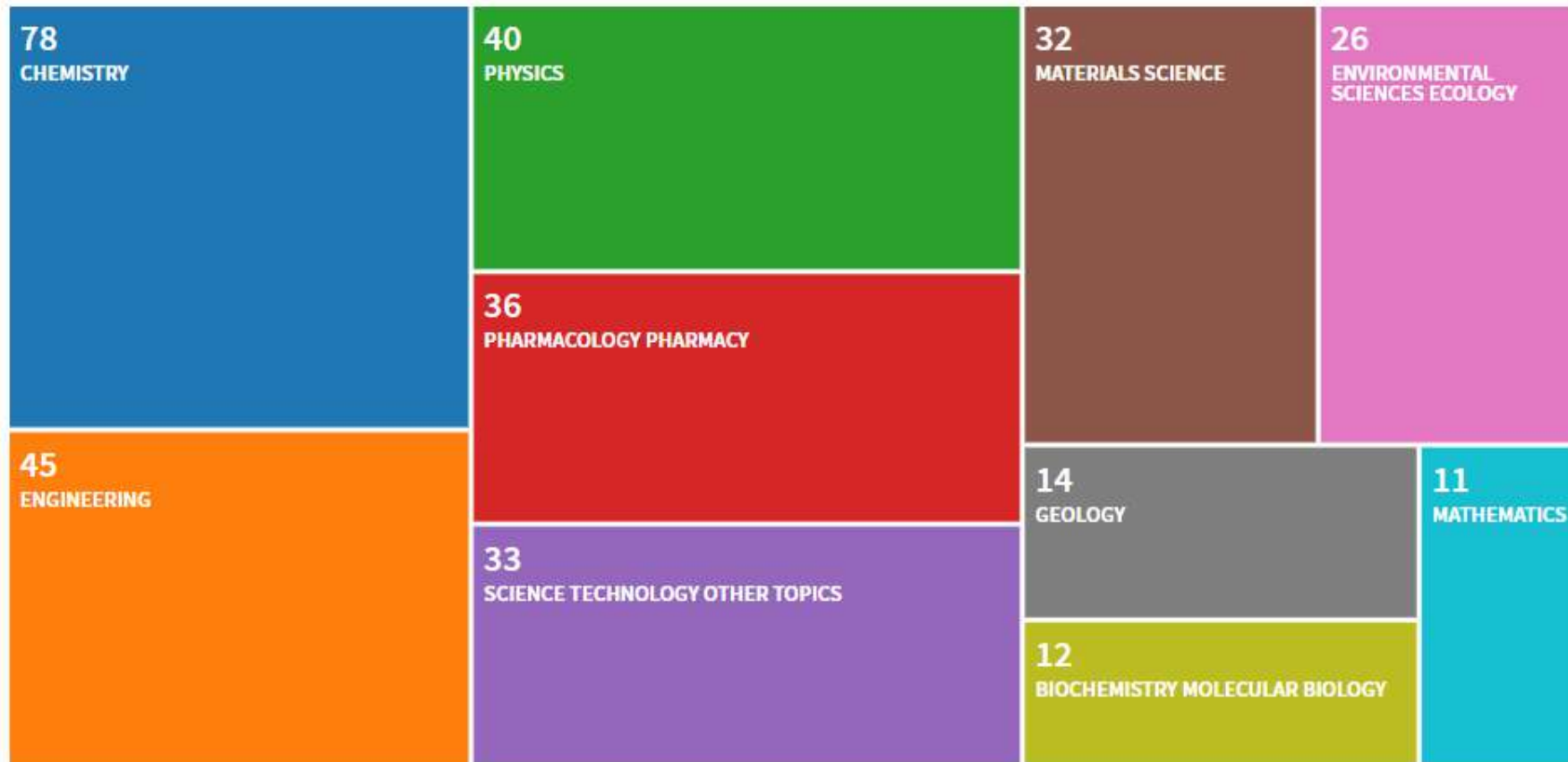
[...More](#)

Visualization **Treemap**

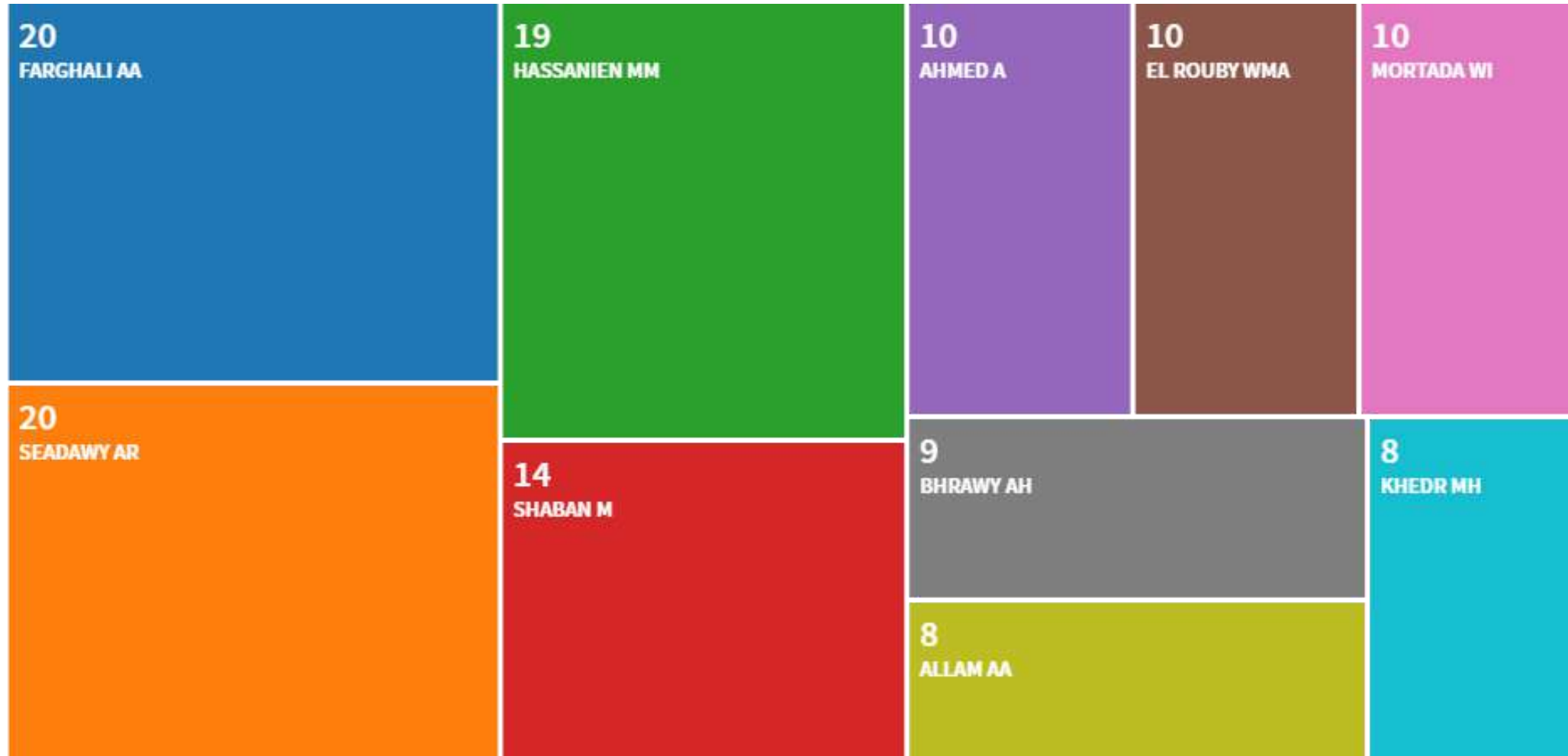
Number of results **10**

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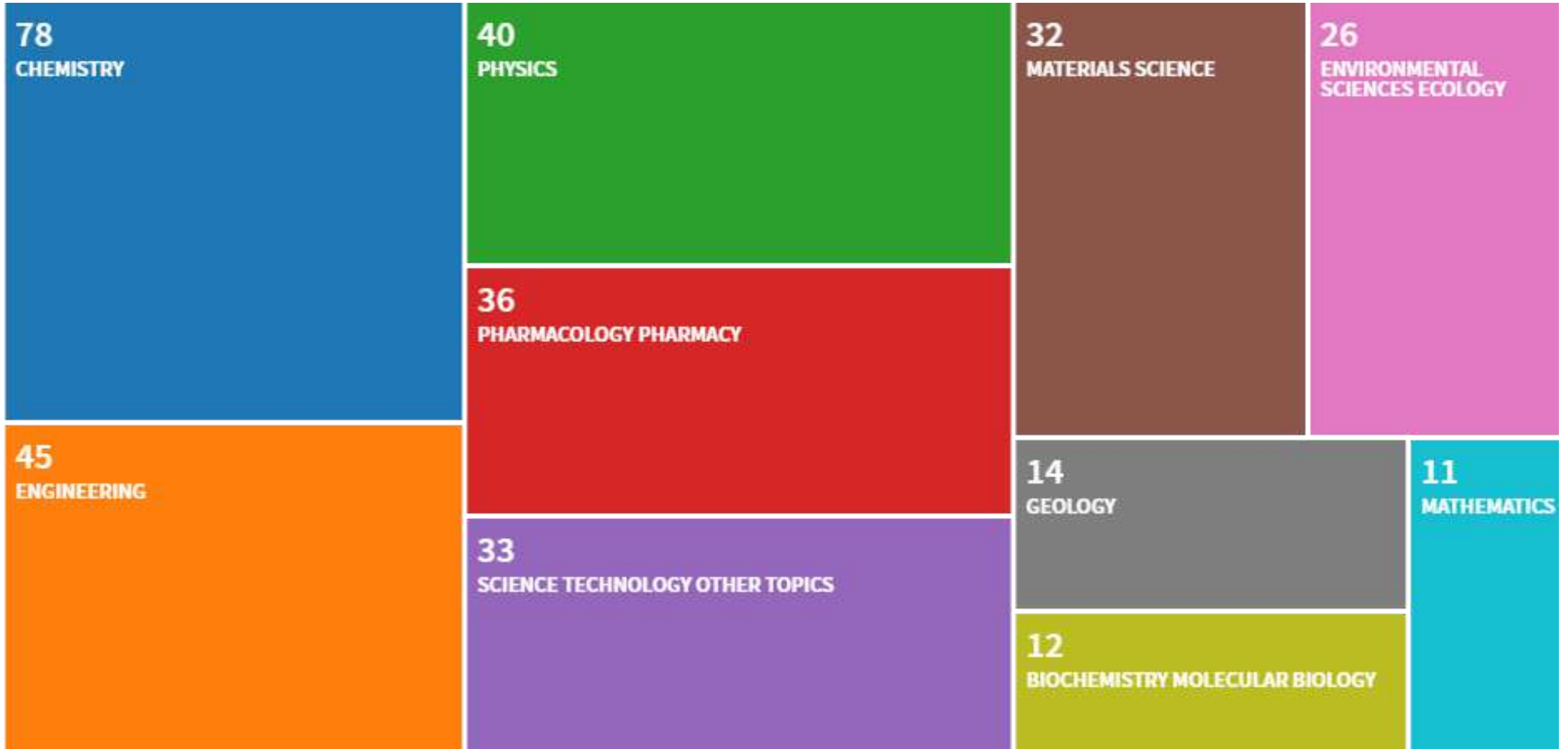
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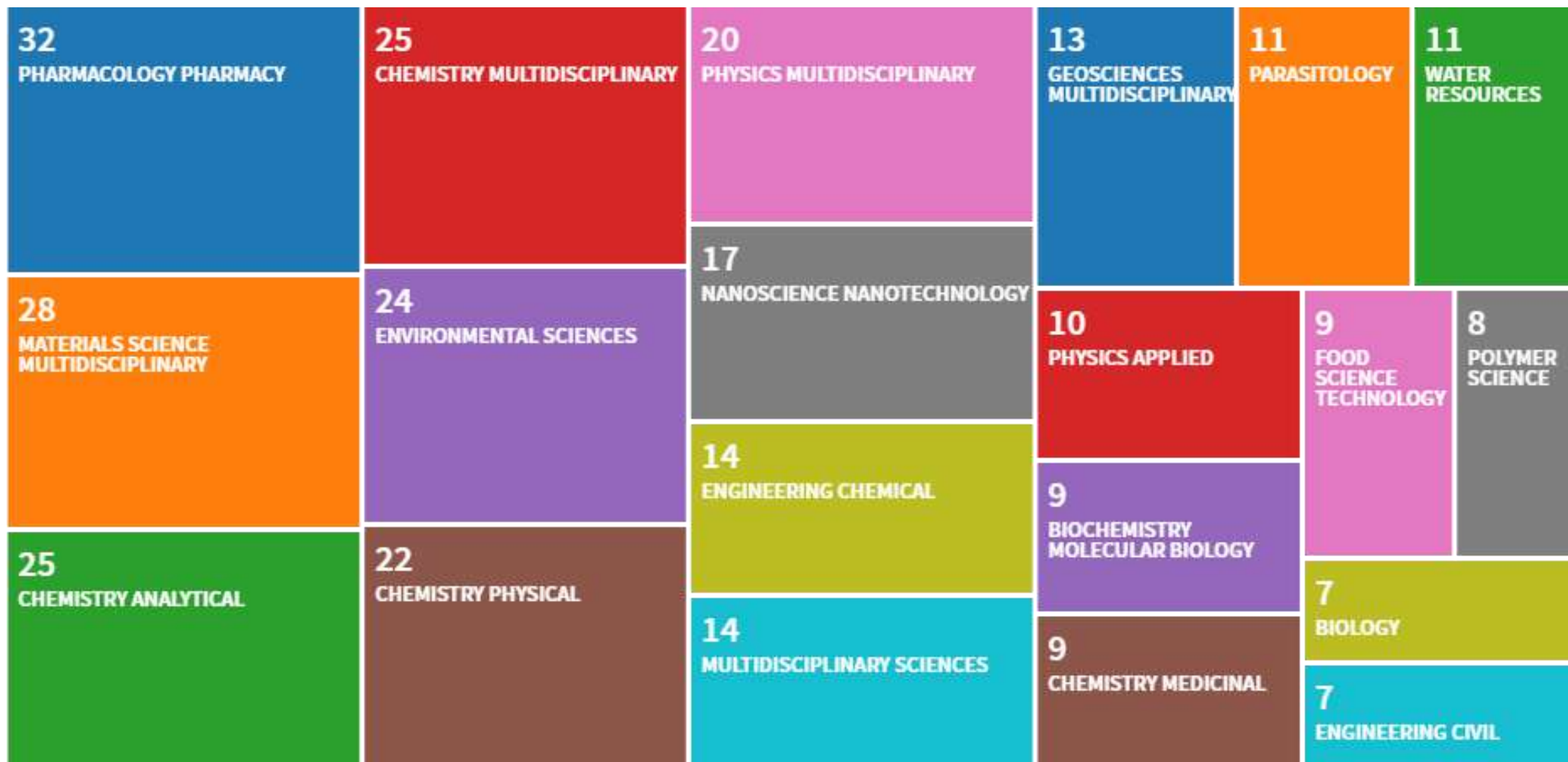
No of articles for the top 10 authors in this area



Research areas top 10



Research areas top 25



Collaborating countries



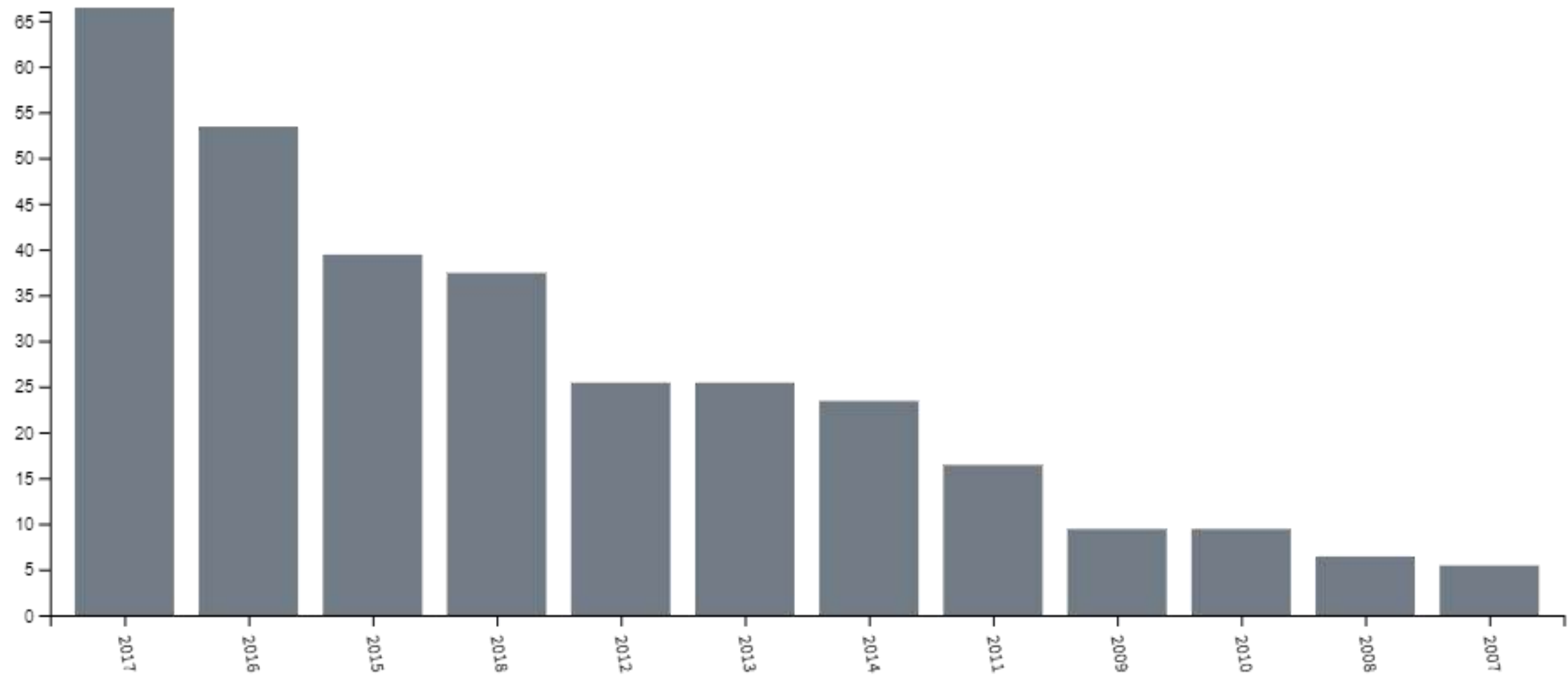
Collaborating Institutes



Funding Agencies



No of publications per year





USAID
FROM THE AMERICAN PEOPLE





Beni-Suef University

PSAS



Faculty of Postgraduate Studies for Advanced Sciences

PSAS: from interdisciplinary to cross disciplinary

Success Story





2020



Beni-Suef University
RANKED 601–800



www.thewur.com



Faculty of Postgraduate Studies for Advanced Sciences; PSAS, BSU

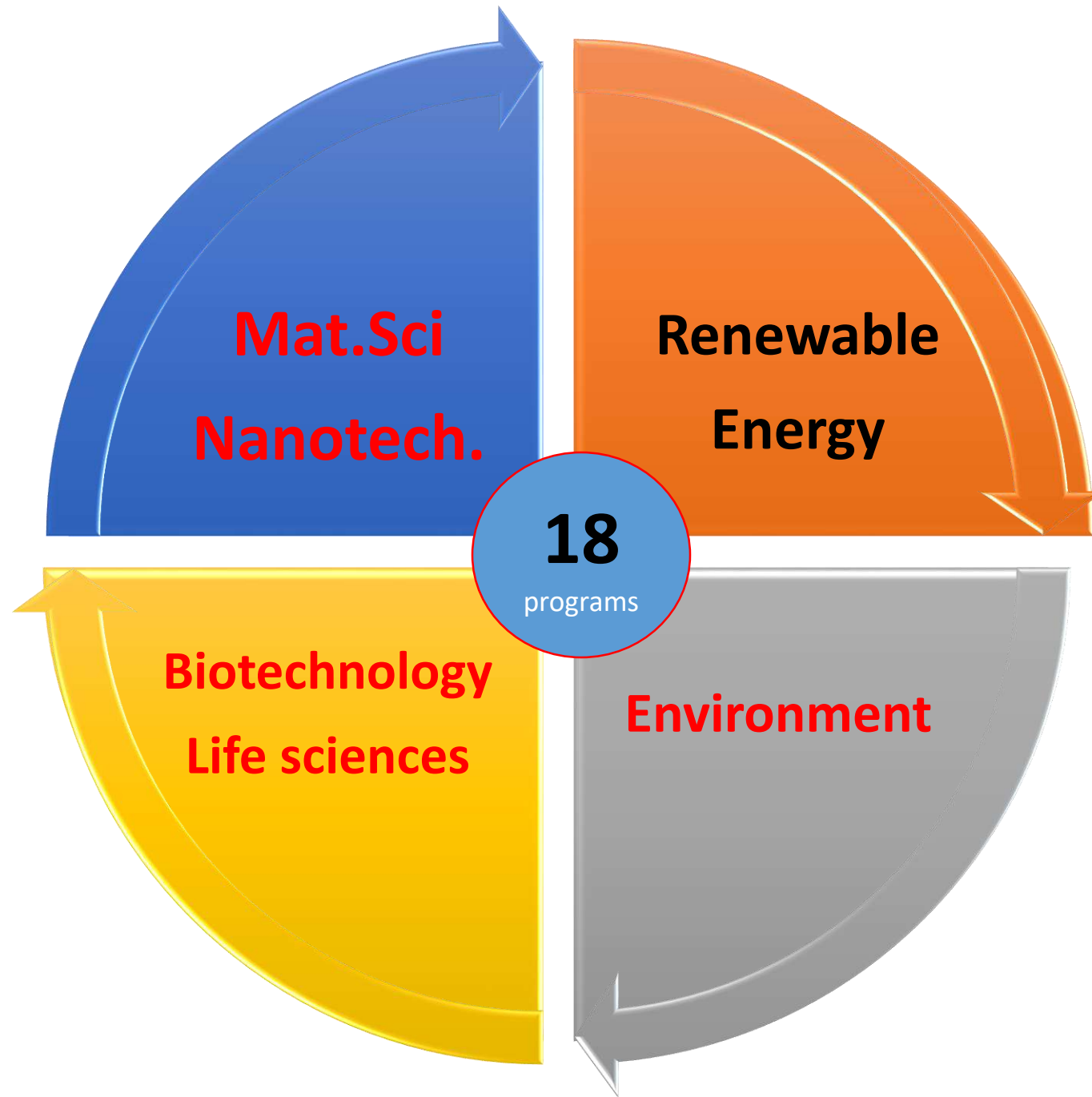
2015-2019

(25 Staff members)

PSAS-Our Story of Success



Be Proud- U R at Beni-Suef University- PSAS



Offered Degrees



Scientific Programs

1. *Materials science and nanotechnology*
2. *Biotechnology and life sciences*
3. *Biomedical Chemistry.*
4. *Environmental science and industrial development.*
5. *Cement Chemistry and Technology*
6. *Renewable Energy Science and Engineering*
7. *Quality Assurance*
8. *Occupational Health, Safety and Environment*

New Programs




Quality Control
(Prof.Master)



Environmental and
Human Heritage



Chemical Biology
and Drug Discovery

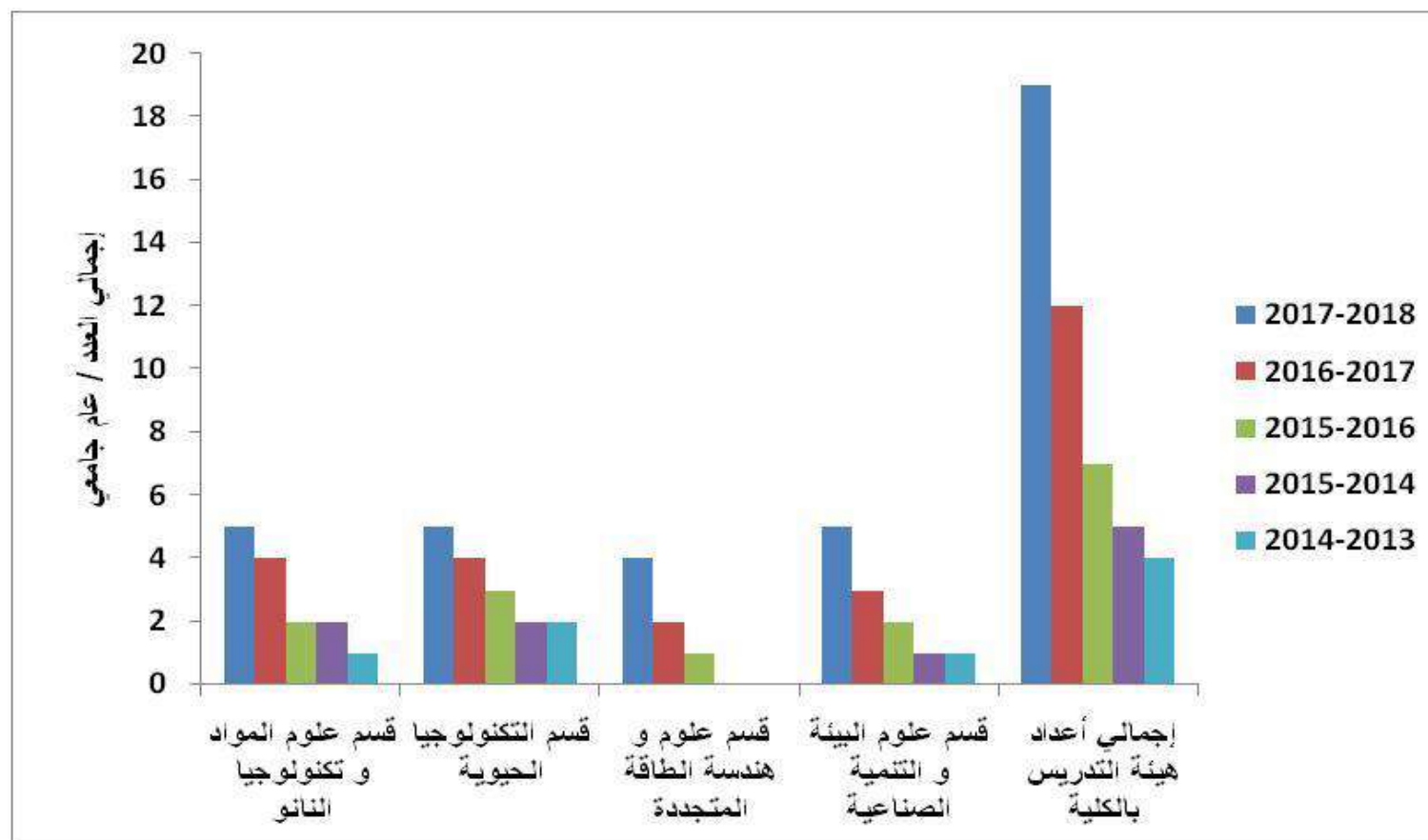


Environmental
Toxicology

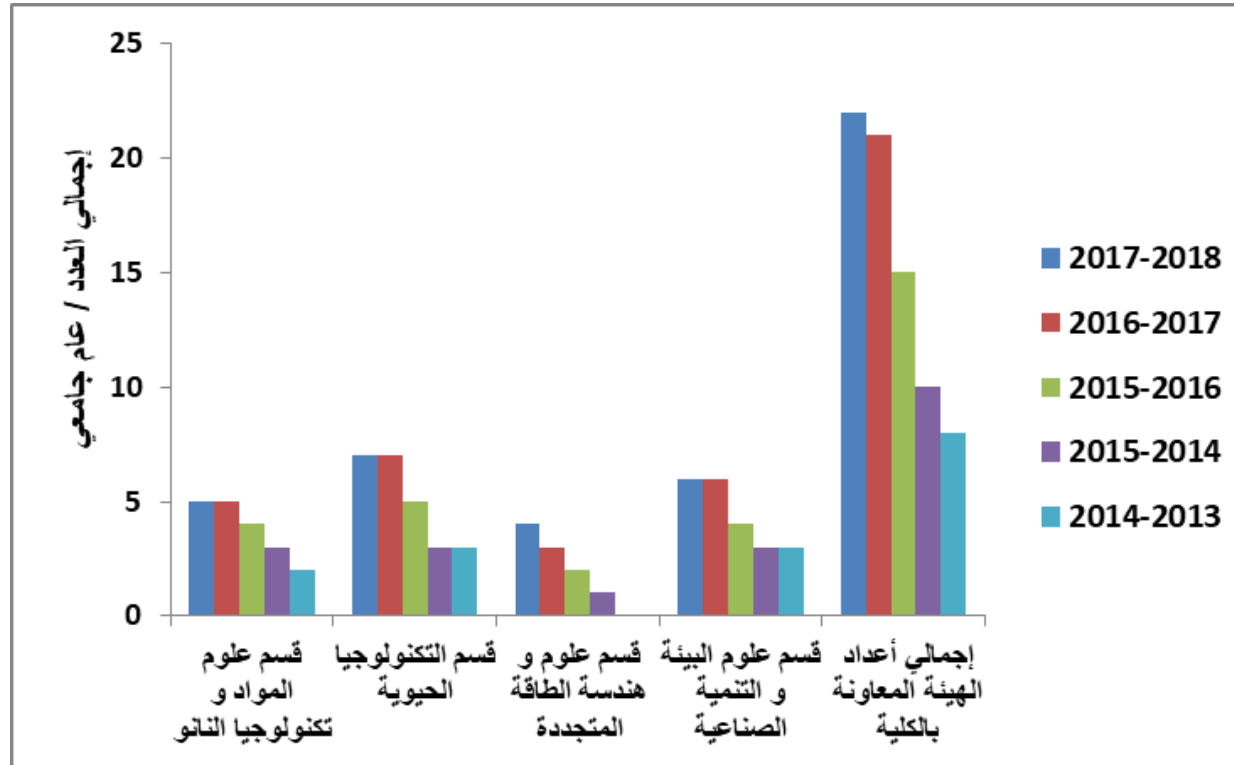


Stem Cell Biology

إجمالي أعداد أعضاء هيئة التدريس لكل عام جامعي						القسم
2013-2014	2014-2015	2016-2015	2017-2016	2018-2017	2019-2018	
1	3	4	5	6	7	Materials Science and Nanotech.
2	2	3	3	6	8	Biotechnology
----	---	1	2	4	4	Renewable Energy Science and eng.
1	2	2	4	6	6	Env. Science and Ind. Devolp.
4	6	10	14	22	25	Total

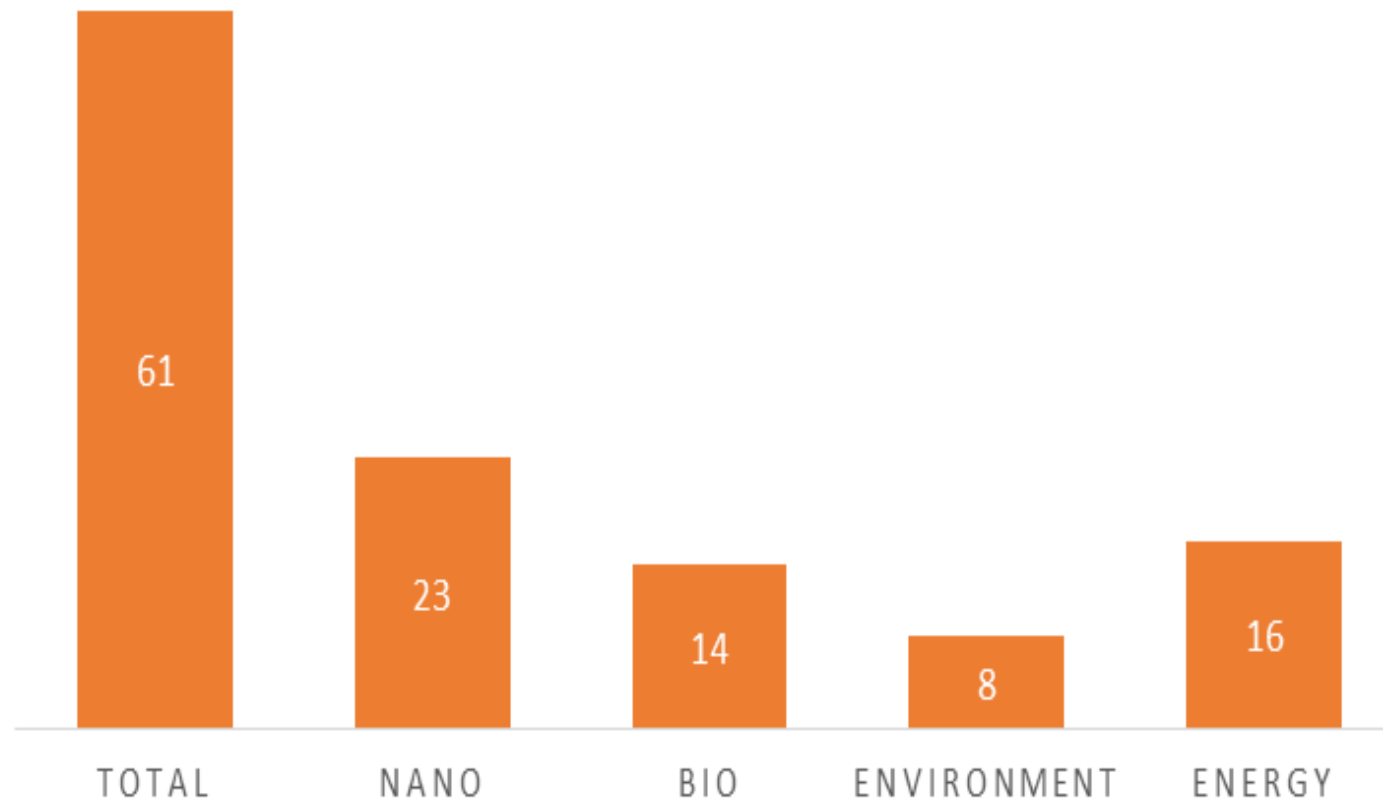


أعداد الهيئة المعاونة لكل عام جامعي						القسم
2013-2014	2014-2015	2016-2015	2017-2016	2018-2017	2019-2018	
2	2	3	4	3	3	Materials Science and Nanotech.
3	5	5	7	5	4	Biotechnology
---	1	2	3	4	3	Renewable Energy Science and eng.
3	3	3	5	5	5	Env. Science and Ind. Devolp.
8	11	14	21	22	15	Total



2017/2018	2016/2017	2015/2016	2014/2015	2013/2014	Diplomes
16	20	8	15	23	Materials Science and Nanotech.
25	12	15	24	23	Biotechnology
2	9	6	5	5	Env.Scien and Ind.Dev
8	5	10	5		Renewable Energy Science and eng
193	69	37	14	-	Medicinal Chem
-	5	4	4	-	Cement chem and technology
18	-	-	-	-	Quality Control

PROJECTS (2014-2018)



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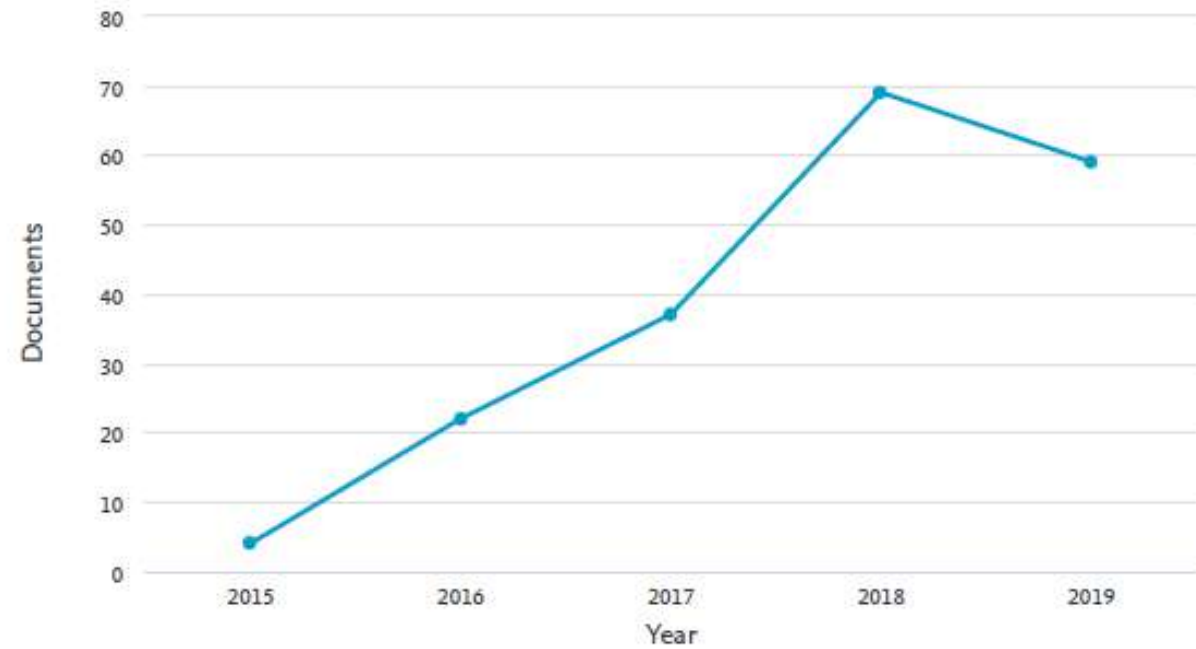
ALL (faculty AND of AND postgraduate AND studies AND for AND advanced AND sciences, AND beni-suef AND university)

191 document results

Select year range to analyze: 2015 to 2019 [Analyze](#)

Year ↓	Documents ↑
2019	59
2018	69
2017	37
2016	22
2015	4

Documents by year



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ALL (faculty AND of AND postgraduate AND studies AND for AND advanced AND sciences, AND beni-suef AND university)

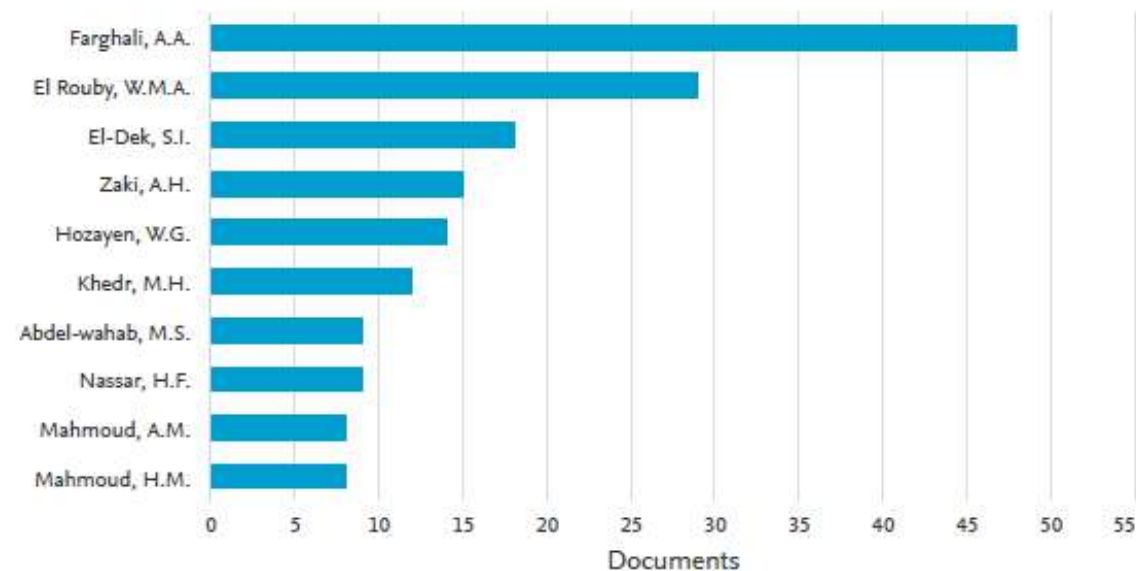
191 document results

Select year range to analyze: 2015 to 2019 [Analyze](#)

Author ↑	Documents ↓
<input type="checkbox"/> Farghali, A.A.	48
<input type="checkbox"/> El Rouby, W.M.A.	29
<input type="checkbox"/> El-Dek, S.I.	18
<input type="checkbox"/> Zaki, A.H.	15
<input type="checkbox"/> Hozayen, W.G.	14
<input type="checkbox"/> Khedr, M.H.	12
<input type="checkbox"/> Abdel-wahab, M.S.	9
<input type="checkbox"/> Nassar, H.F.	9
<input type="checkbox"/> Mahmoud, A.M.	8

Documents by author

Compare the document counts for up to 15 authors.



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191 document results

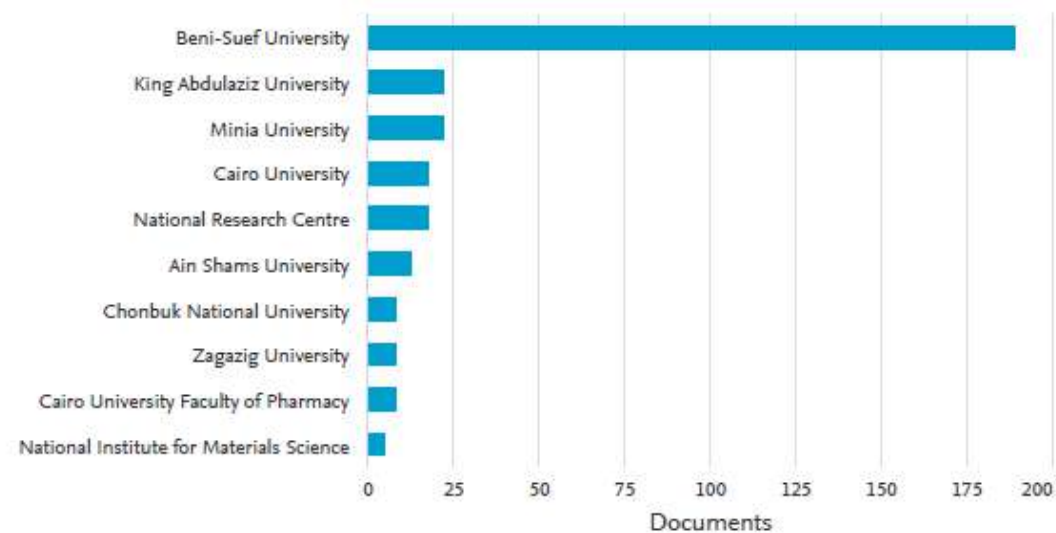
Select year range to analyze: 2015 to 2019 Analyze

Affiliation ↑ Documents ↓

<input type="checkbox"/>	Beni-Suef University	189
<input type="checkbox"/>	King Abdulaziz University	22
<input type="checkbox"/>	Minia University	22
<input type="checkbox"/>	Cairo University	18
<input type="checkbox"/>	National Research Centre	18
<input type="checkbox"/>	Ain Shams University	13
<input type="checkbox"/>	Chonbuk National University	8
<input type="checkbox"/>	Zagazig University	8
<input type="checkbox"/>	Cairo University Faculty of Pharmacy	8

Documents by affiliation

Compare the document counts for up to 15 affiliations.

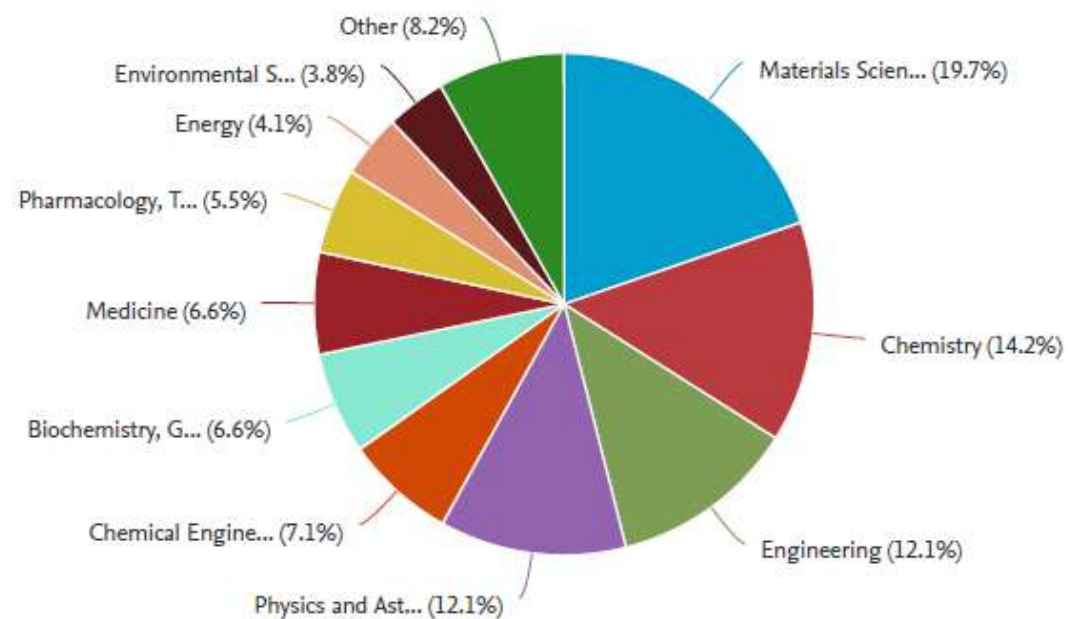


191 document results

Select year range to analyze: 2015 to 2019 [Analyze](#)

Subject area ↓	Documents ↓
Materials Science	72
Chemistry	52
Engineering	44
Physics and Astronomy	44
Chemical Engineering	26
Biochemistry, Genetics and Molecular Biology	24
Medicine	24
Pharmacology, Toxicology and Pharmaceutics	20
Energy	15

Documents by subject area



191 document results

Select year range to analyze: 2015 to 2019

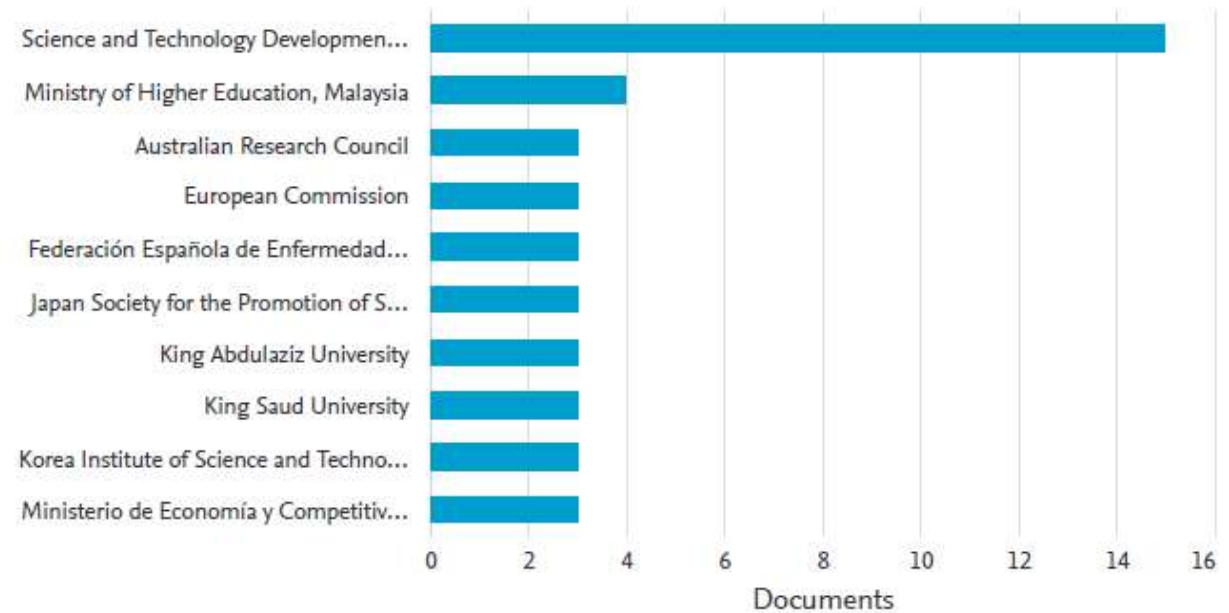
Analyze

Funding sponsor ↓ Documents ↓

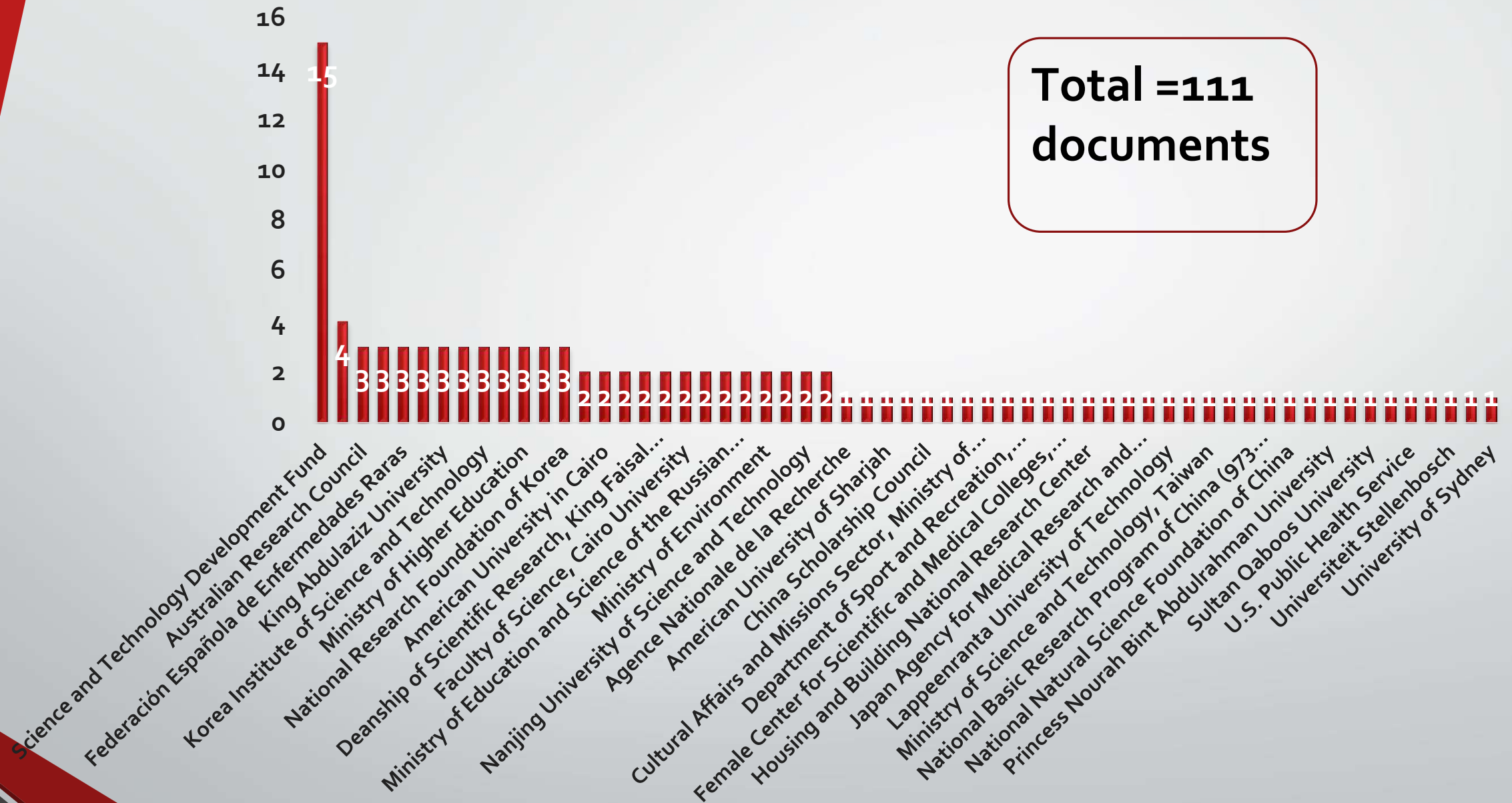
<input checked="" type="checkbox"/> Program of China (973 Program)	
<input type="checkbox"/> National Institute of Allergy and Infectious Diseases	1
<input type="checkbox"/> National Natural Science Foundation of China	1
<input type="checkbox"/> Natural Science Foundation of Jiangsu Province	1
<input type="checkbox"/> Princess Nourah Bint Abdulrahman University	1

Documents by funding sponsor

Compare the document counts for up to 15 funding sponsors.



No of published documents from different funds



No of published documents vs collaborating institute

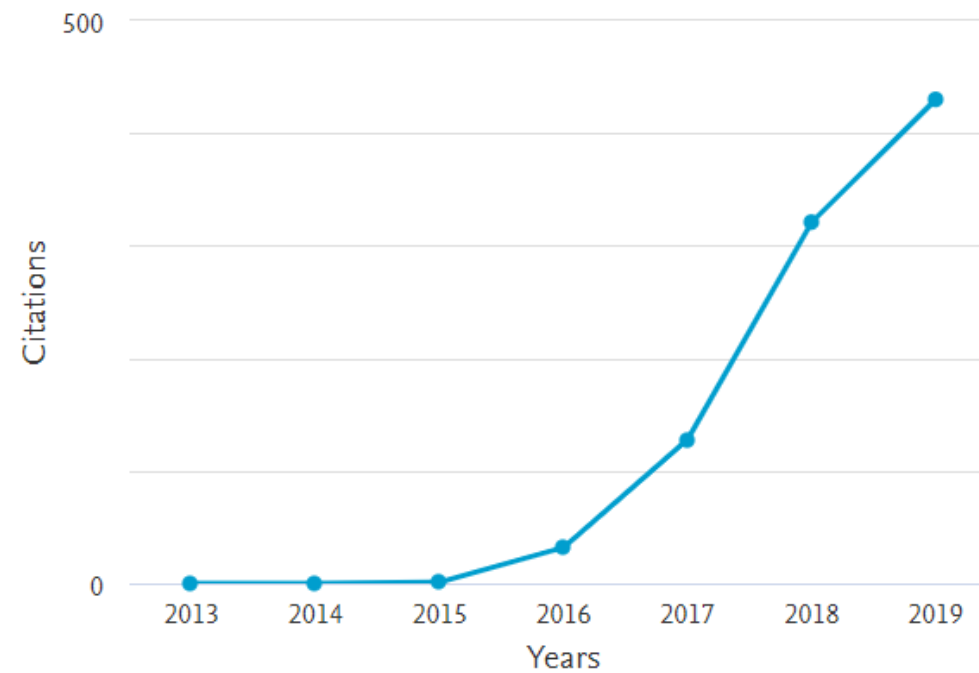


This is an overview of citations for the documents you've selected.

191 cited documents [+ Add to list](#)

Document *h*-index : 16 [View *h*-graph ?](#)

Date range: 2013 [▼](#) to 2019 [▼](#) ☐ Exclude self citations of all authors ☐ Exclude citations from books [Update](#)





Materials Science and Nanotechnology Team (since 2013)



Vice President for Education and Students
Affairs, Beni-Suef University.

Research Group Leader
PhD Physical Chemistry, Cairo University,
EGYPT.

E-mail: dkheddr@yahoo.com

ORCID: 000-0002-5051-9885

Prof. Dr. Mohamed H. Khedr



Dean of PSAS

Research Group Co-leader
PhD Physical Chemistry, Beni-Suef University,
Egypt.

E-mail: ahmedfarghali74@yahoo.com

ORCID: 0000-0002-9270-9855

Prof. Ahmed A. Farghali



Vice Dean

PhD Physics, Cairo University, Egypt.

E-mail: didi5550000@gmail.com

ORCID: 0000-0003-4564-9455

Assoc. Prof. Samaa I. El-Dek



Head of the Department

PhD Physical Chemistry, Beni-Suef University,
Egypt.

E-mail: waleedmohamedali@psas.bsu.edu.eg

ORCID: 0000-0003-0754-7562

Assoc. Prof. Waleed M. A. El Rouby



Materials Science and Nanotechnology Team



Dr. Ayman H. Zaki, Lecturer

PhD Physical Chemistry,
Beni-Suef University, Egypt.
E-mail: ayman_h_zaki@yahoo.com
ORCID: 0000-0001-5186-160X



Dr. Ahmed Elshahawy, Lecturer

PhD Medical Applied Physics Cairo
University, Egypt.
E-mail: ahmedelshahawy382@yahoo.com
ORCID: 0000-0002-4237-4268



Dr. Mohamed Taha, Lecturer

PhD Chemical Engineering,
NTUST, Taiwan.
E-mail: mtahag78@yahoo.com
ORCID: 0000-0002-5367-2009



Dr. Abdalla Abdelwahab, Lecturer

PhD Chemistry, Granada University,
Spain.
E-mail: abdalla.abdelwahab85@gmail.com
ORCID: 0000-0003-3822-2752



Mr. Mohamed Esmat, Ass. Lecturer

MSc Materials Science and Nanotechnology,
PSAS, Beni-Suef University, Egypt.
E-mail: m.esmat@psas.bsu.edu.eg
ORCID: 0000-0003-1465-0955



Mr. Essam M. Dief, Ass. Lecturer

MSc Materials Science and
Nanotechnology, PSAS, Beni-Suef
University, Egypt.
E-mail: essam.dief@gmail.com
ORCID: 0000-0002-6941-9315



Eng. Yasser GadelHak, Demonstrator

MSc. Chemical Engineering, King
Abdul Aziz University, Saudi Arabia.
E-mail: yasser191919@gmail.com
ORCID:

Facilities

Preparations

Ball mill



Ultrasonic probe



Thermal evaporator



Microwave



Tube furnace



Cooling centrifuge



Characterization and applications

Soon ---- STEM, Zeiss



Zetasizer Malvern



UV- double beam



Surface area analyzer
Micromeritics



Potentiostat



Solar simulator



Awarded Projects- Nano team

NO.	Project title	Funding Agency	Total Fund
1	Synthesis and Characterization of TiO ₂ Nanotubes (TiO ₂ NTs) Filled with Highly Efficient Nanoalloys	STDF	1 million LE
2	a new 3 way catalyst for car exhaust	Swedish –Egypt grant	1/2 million Swedish Corona
3	core shell nanoparticles for dyes removal in river water	Cairo University	200,000 LE
4	Plasma assisted preparation of nano metal oxides	US- Egypt Fund (STDF)	200,000USD
5	Controlling size and shape of nano CuO for environmental problems	STDF	100,000 LE
6	Photodegradation of some food dyes and bacterial inhibition of some bacteria that present in industrial waste-water and designing a treatment reactor prototype	Beni-Suef University	15,000 EGP
7	Chemical Routes to Nanostructured Materials for Solar Cell Applications	ASRT	200,000LE
8	Conversion of plastic to oil	Beni-Suef Uni.	65000 LE
9	Design, Implementation and Performance of 10kW Rooftop Grid Connected PV System: PSAS Faculty : as a Case Study	Beni-Suef Uni.	300,000 LE
10	Doped TiO ₂ /graphene nano composites for large scale H ₂ production from waste water	STDF	100,000 LE
11	Enhanced recovery and valorization of algal-bacterial biomass from wastewater treatment plants using layered double hydroxide nanoparticles	STDF	100,000 LE
12	Nanocomposites, a novel approach to optimize, purify and enhance the antibacterial activity of a potent bacteriocin (Enterocin OS13)	Beni-Suef Uni.	65,000 LE
13	Formulation and Evaluation of Topical Formulations Containing U.V. Shielding Nano-Metallic components	Beni-Suef Uni.	65,000 LE

14	Scaling up of fully solar powered photochemical - biological wastewater treatment using photosynthetic oxygenation	ASRT	400,000 LE
15	preparation and characterization of nanoparticles for free radical scavenging	STDF	100,000 LE
16	Synthesis of innovative hollow fibers polymer nanocomposite for selective removal of arsenic from drinking and ground water	STDF	100,000 LE
17	Titanate Nanostructures for removal of heavy metals from drinking water and In-vitro evaluation of cytotoxic effect on human normal cell lines (liver and Kidney)	Princess Nawara bint AbdulRahman University	171,600 SR
18	Carbon quantum dots size control using electrochemical method and their application in supercapacitors as a powerful tool for energy storage	STDF	661500 LE
19	Electro-catalytic conversion of CO ₂ into hydrocarbons using carbon aerogels based electrodes	STDF	243000 LE
20	Center of Excellence (economic production of nanomaterials)	STDF	8.0 MLE
21	Bimetal oxides doped carbon quantum dots as a novel materials towards Nano-fluids applications	STDF	100,000 LE
22	Construction of novel Nanocomposites with enhanced photocatalytic properties for photoelectrochemical (PEC) water splitting	STDF	200,000 LE



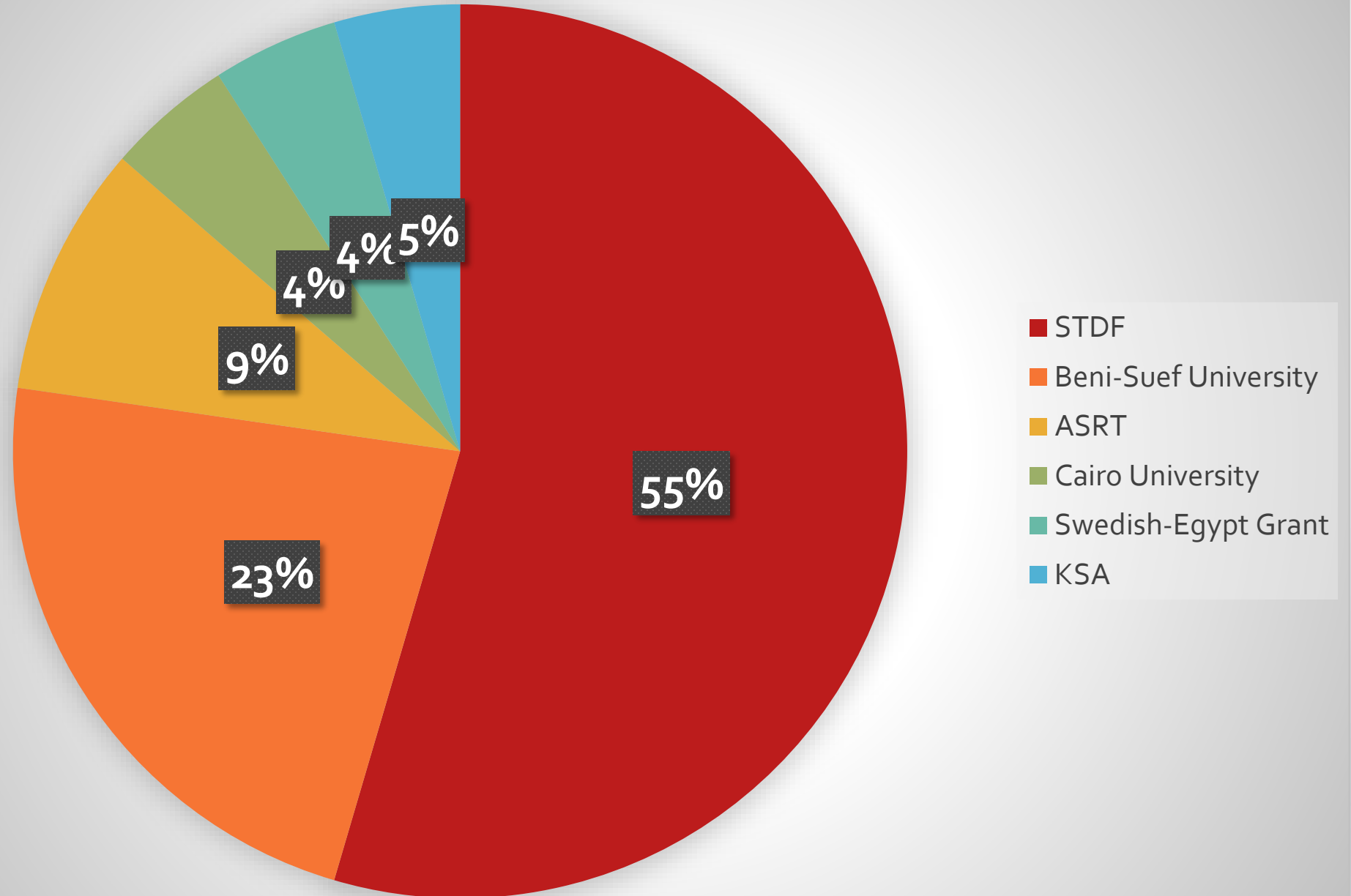
COE

Economic commercial production of
nanomaterials for local market needs

SCE 31305

8M EGP-STDF-Egypt

No. of projects/ Funding agency



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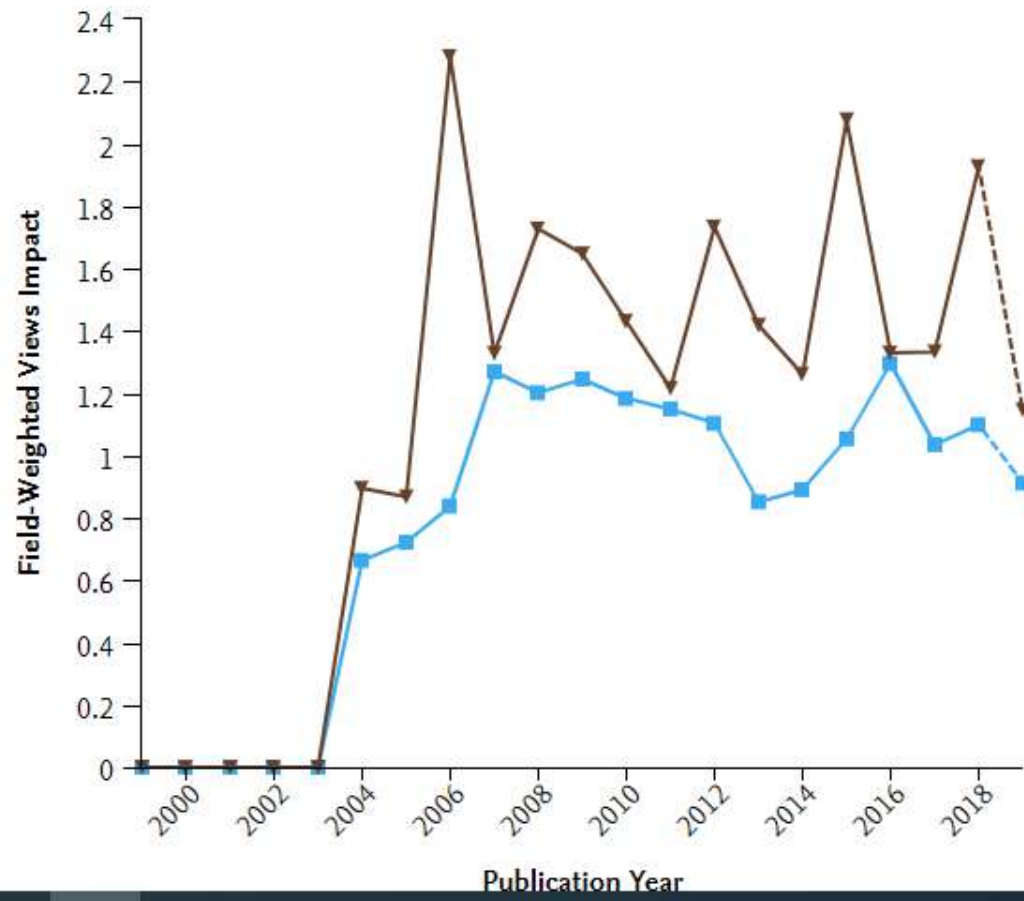
1999 to 2019 no filter selected

Researchers and Groups

- ☒ Nano-PSAS
- ☐ Abdelwahab, Abdalla
- ☐ El Rouby, Waleed M.A.
- ☐ El-Dek, S. I.
- ☐ El-Shahawy, Ahmed A.G.
- ☐ Esmat, Mohamed
- ☐ Farghali, Ahmed Ali Ahmed
- ☐ GadelHak, Yasser M.
- ☐ Khedr, Mohamed Hamdy
- ☐ Taha, Mohamed
- ☐ Zaki, A. H.

+ Add Researchers and Groups
X Remove all entities from this section

Impact



Institutions and Groups

- ☒ Beni-Suef University
- ☐ Kafrelsheikh University
- ☐ Suez Canal University
- ☐ Suez University

Researchers and Groups

- ☒ Nano-PSAS

View list of Scopus Sources for the selected Researchers and Groups

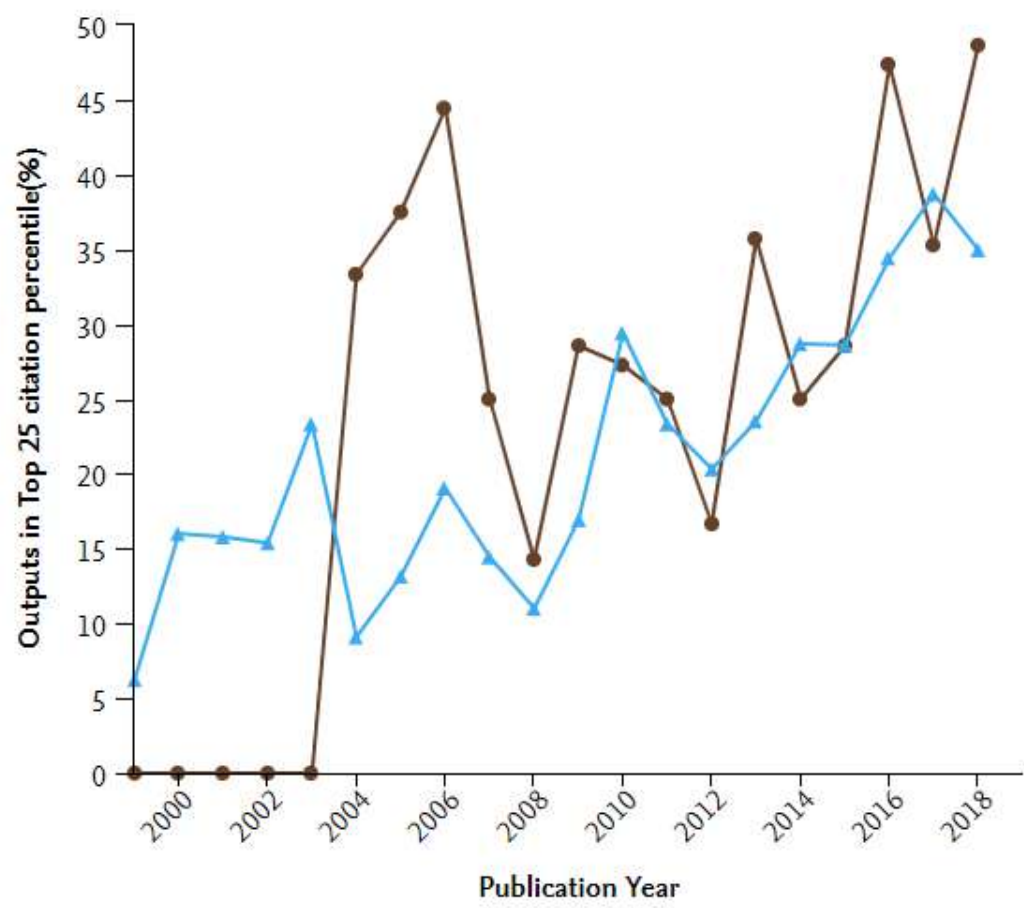
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1999 to 2019 no filter selected

Researchers and Groups

- ☒ Nano-PSAS
- ☐ Abdelwahab, Abdalla
- ☐ El Rouby, Waleed M.A.
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- ☐ Taha, Mohamed
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+ Add Researchers and Groups
X Remove all entities from this section



Institutions and Groups

- ▲ Beni-Suef University
- Kafrelsheikh University
- ◆ Suez Canal University
- ▼ Suez University

Researchers and Groups

- Nano-PSAS

View list of Scopus Sources for the selected Researchers and Groups

Metrics details

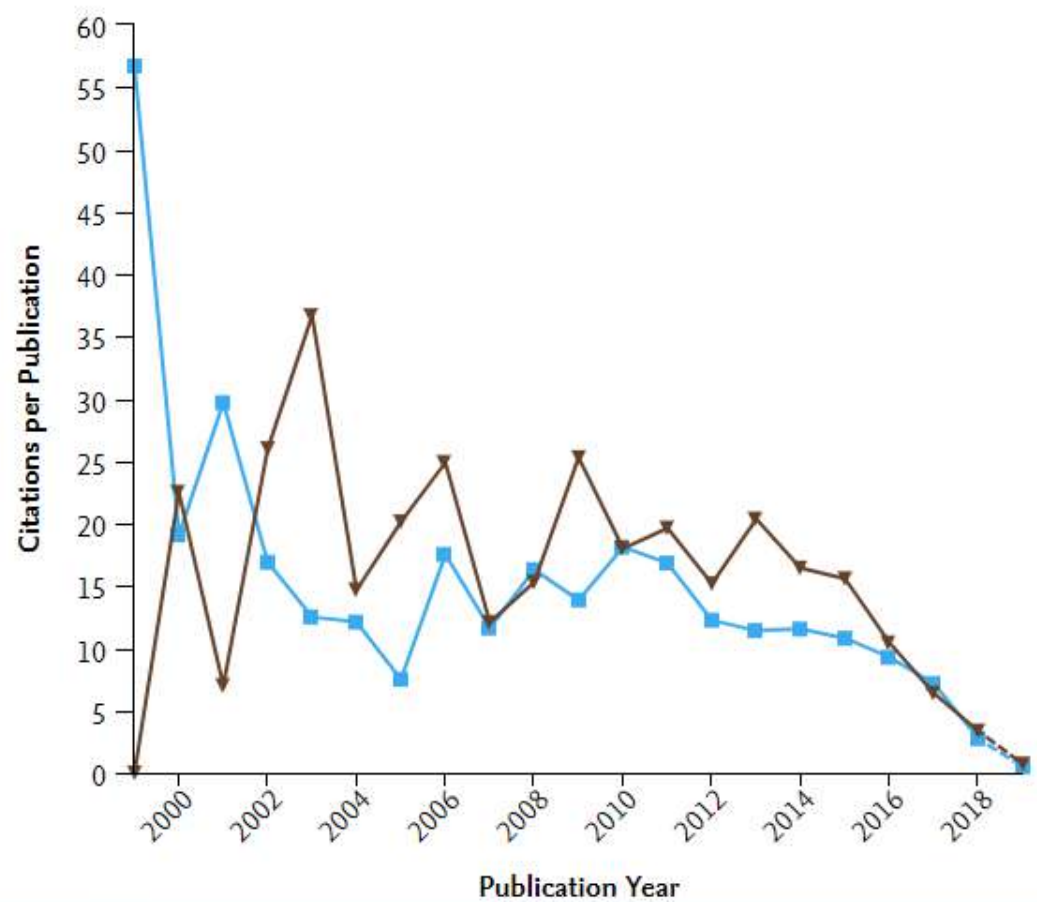
> Deselect all Hide tags X

1999 to 2019 no subject area filter selected

Researchers and Groups

- ☒ Nano-PSAS
- ☐ Abdelwahab, Abdalla
- ☐ El Rouby, Waleed M.A.
- ☐ El-Dek, S. I.
- ☐ El-Shahawy, Ahmed A.G.
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- ☐ Farghali, Ahmed Ali Ahmed
- ☐ GadelHak, Yasser M.
- ☐ Khedr, Mohamed Hamdy
- ☐ Taha, Mohamed
- ☐ Zaki, A. H.

+ Add Researchers and Groups
X Remove all entities from this section



- ### Institutions and Groups
- ☒ Beni-Suef University
 - ☐ Kafrelsheikh University
 - ☐ Suez Canal University
 - ☐ Suez University

- ### Researchers and Groups
- ☒ Nano-PSAS

View list of Scopus Sources for the selected Researchers and Groups



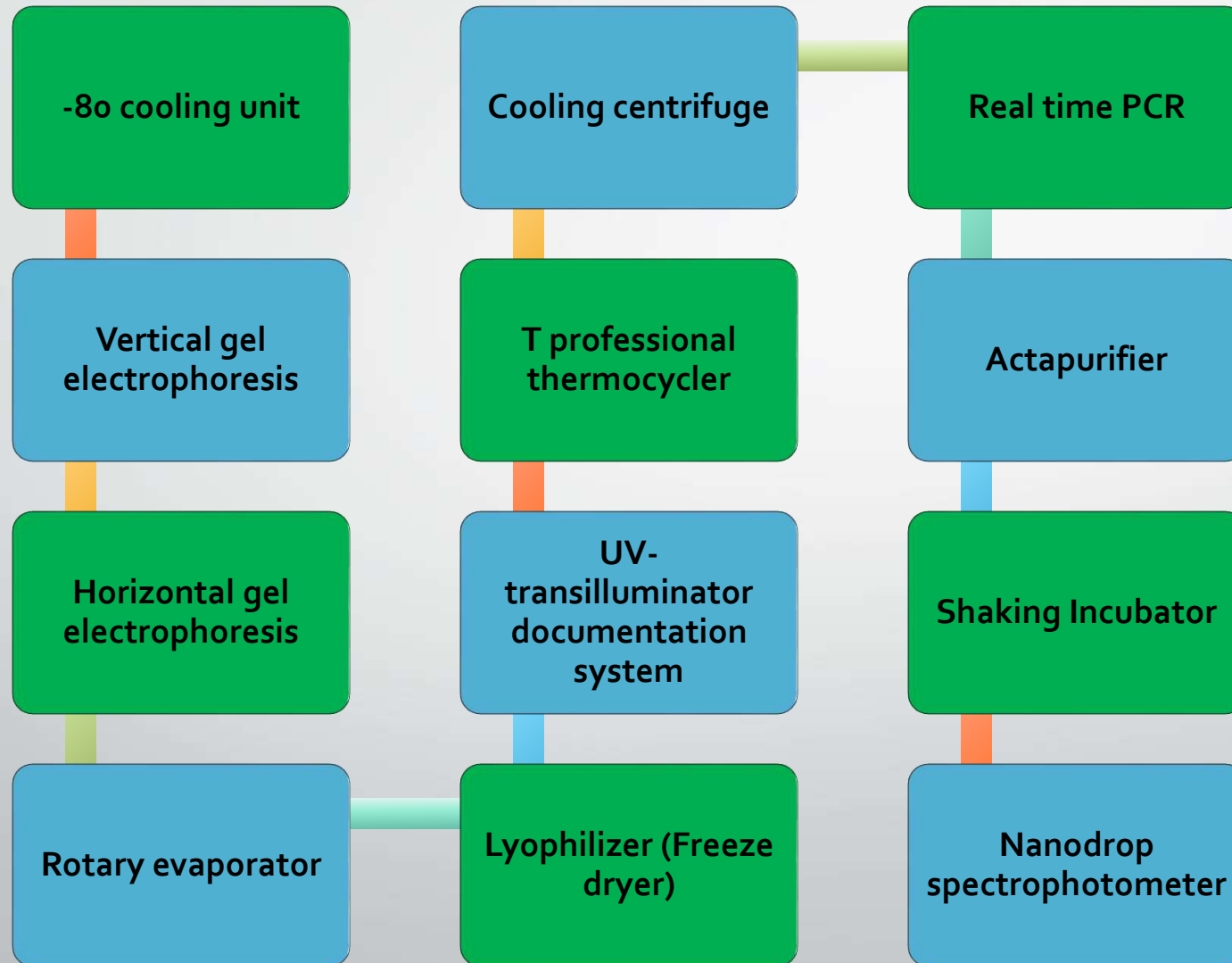
Biotechnology Department

Mission:

- To provide a quality education in pursuit of knowledge, that establishes a strong foundation for understanding developments in the rapidly advancing field of biotechnology with the development of new biochemical technologies and therapies through research and education

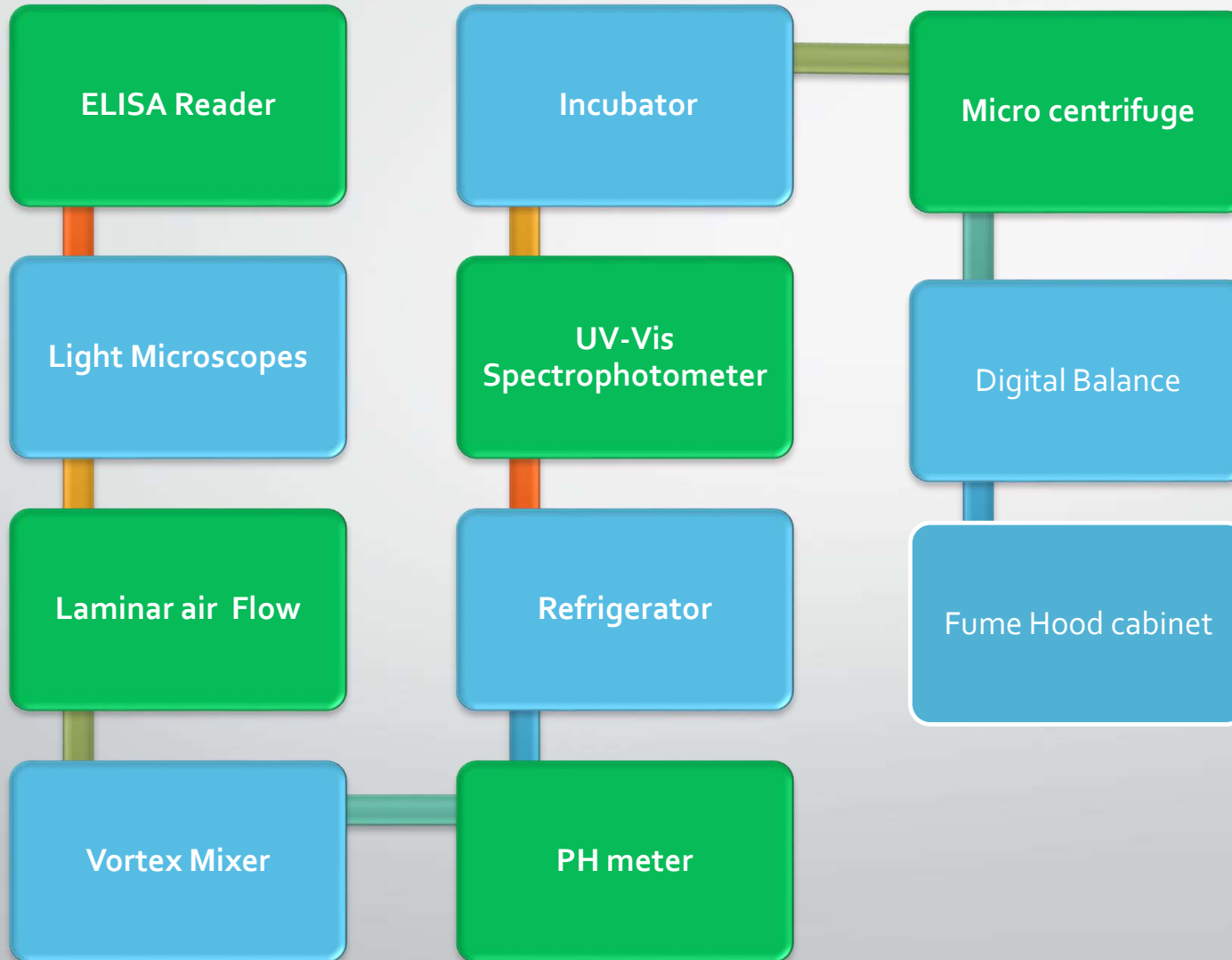


Biotech Lab





Biomedical Chemistry Lab





New Labs.

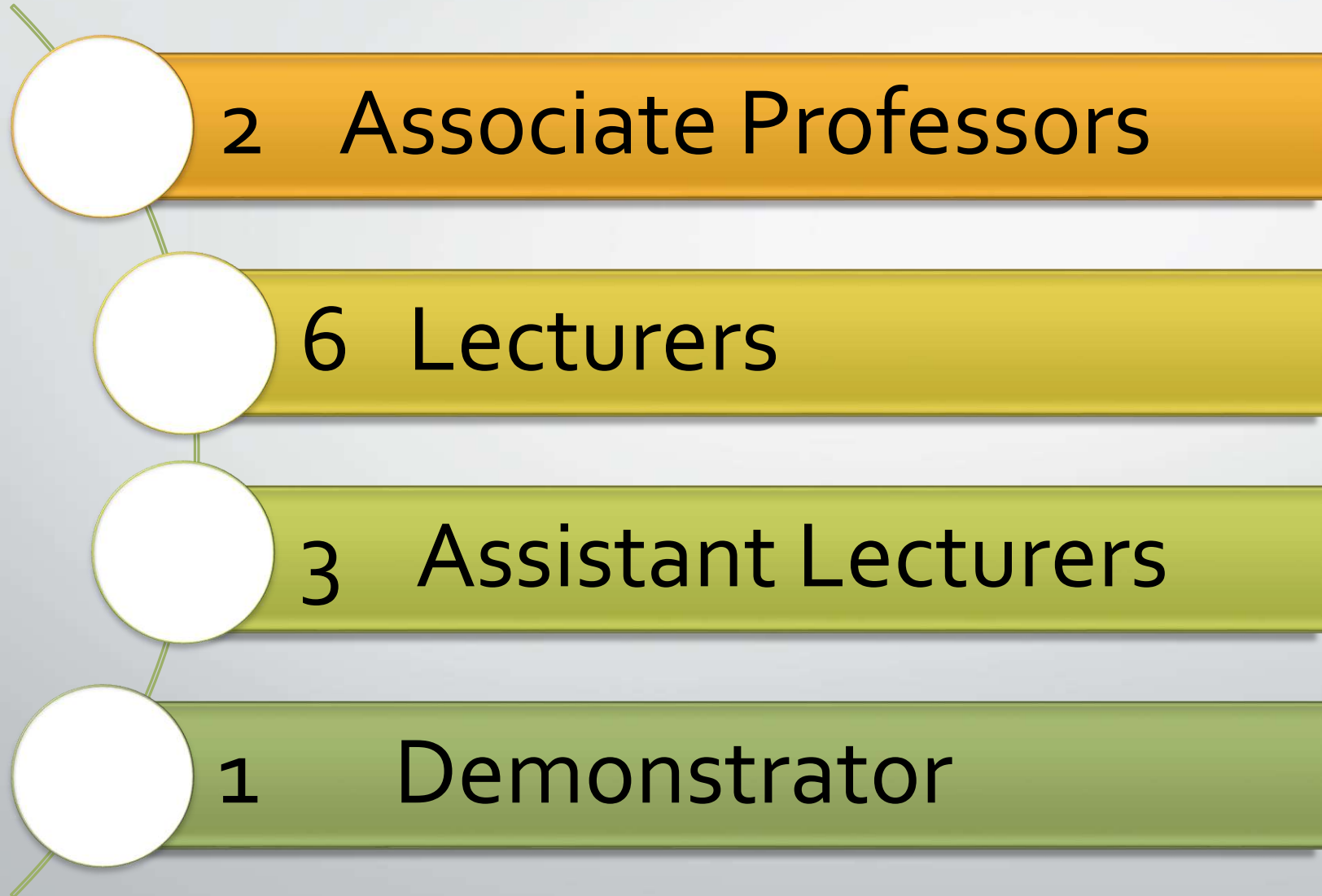


Animal House



Cell culture& stem cells

Biotech Academic Staff



Biotech Dep Projects

No.	Title	Funding Agency	Total Fund
1	Target Nano dosage form For treatment of chronic Bacterial Prostatitis	BSU	50,000 EGP
2	Unraveling the diversity and important functional attributes of endophytes associated with selected medicinal crops from South Africa and Egypt	Egypt (STDF)- South Africa (NRF) Scientific Cooperation	240,000 EGP
3	Anti-Hepatitis C Viral activities of Natural Phenolic Compounds	BSU	40,000 EGP
4	Optimization and Scale up of Microbial Synthesis Of Nanoparticles	BSU	40,000 EGP
5	Identification of MicroRNA Panel in Breast Cancer Diagnosis with Relation to their Targeted Gene	STDF	600,000 EGP

Biotech Dep Projects

No.	Title	Funding Agency	Total Fund
6	Enhanced recovery and valorization of algal-bacterial biomass from waste water treatment plants using layered double hydroxide nanoparticles	STDF	100,000 EGP
7	Mutations in the host factor double stranded RNA activated protein kinase on the interferon response of HCV infection in Egyptian patients (genotype 4)	BSU	40,000 EGP
9	Production and characterization of vaccine candidate for Enterohemorrhagic E. coli by using reverse vaccinology approach	BSU	50,000 EGP
10	Possible Involvement of Peroxisome Proliferator Activated Receptor- γ in Nanoparticles-Induced Organ Damage	BSU	100,000 EGP
Total fund @Biotechnology Department			1,260,000





Environmental Science and Industrial Development

Dr.
Asmaa Hamouda



Ass. Prof
Rehab Khaled



Dr.
Hossam Nassar



Dr.
Nabila Shehata



Mohamed Abuelsoud



Mahmoud Nady

Dr.
Amal Zaher



Moustafa Shawkey



Esraa Mansour



Heba Younis



Goals

- Supporting industry with innovative new research methods
- Description of environmental structure and processes
- Monitoring and treatments of pollution
- Environmental legislative framework and methods of enforcement



A- Environmental Sciences

Current Research Themes:

1. Environmental Engineering.
2. Application of GIS in Environmental Studies.
3. Marine biology.
4. Design of wastewater Treatment plant.
5. Environmental risk assessment.
6. Improving final product quality.
7. Alternative Fuels from Wastes.
8. Ecotoxicology and public health.



A- Environmental Sciences

Future Research Themes:

1. Toxicological effects of organic residues and their health risk assessment.
2. Design of new advanced wastewater treatment units based on bio and nanotechnology techniques.
3. Impacts of environmental conditions on the stability of organic components.
4. Bioremediation of contaminated soils.
5. Ecology of Infectious diseases.
6. Biodiversity mapping and remote sensing.
7. Air Pollution Control and Risk Assessment.



B- Cement Chemistry and Technology

Current Research Themes:

1. Cement Quality Control.
2. Enviro-Cement.
3. Alternative Fuel.

Future Research Themes:

1. Blending cement.
2. Grinding aids for the mills.
3. Alternative cement "geo-Polymers".
4. Nano-cement chemistry.
5. Recycling of by-products in cement manufacturing.
7. Raw materials behavior and its effect on dust emission.



Environmental Science Lab



Spectro-
photometer

Viscometer

Portable
Density
meter

Centrifuge

Tension
meter

pH meter

Conductivity
meter

Portable
Pastel UV



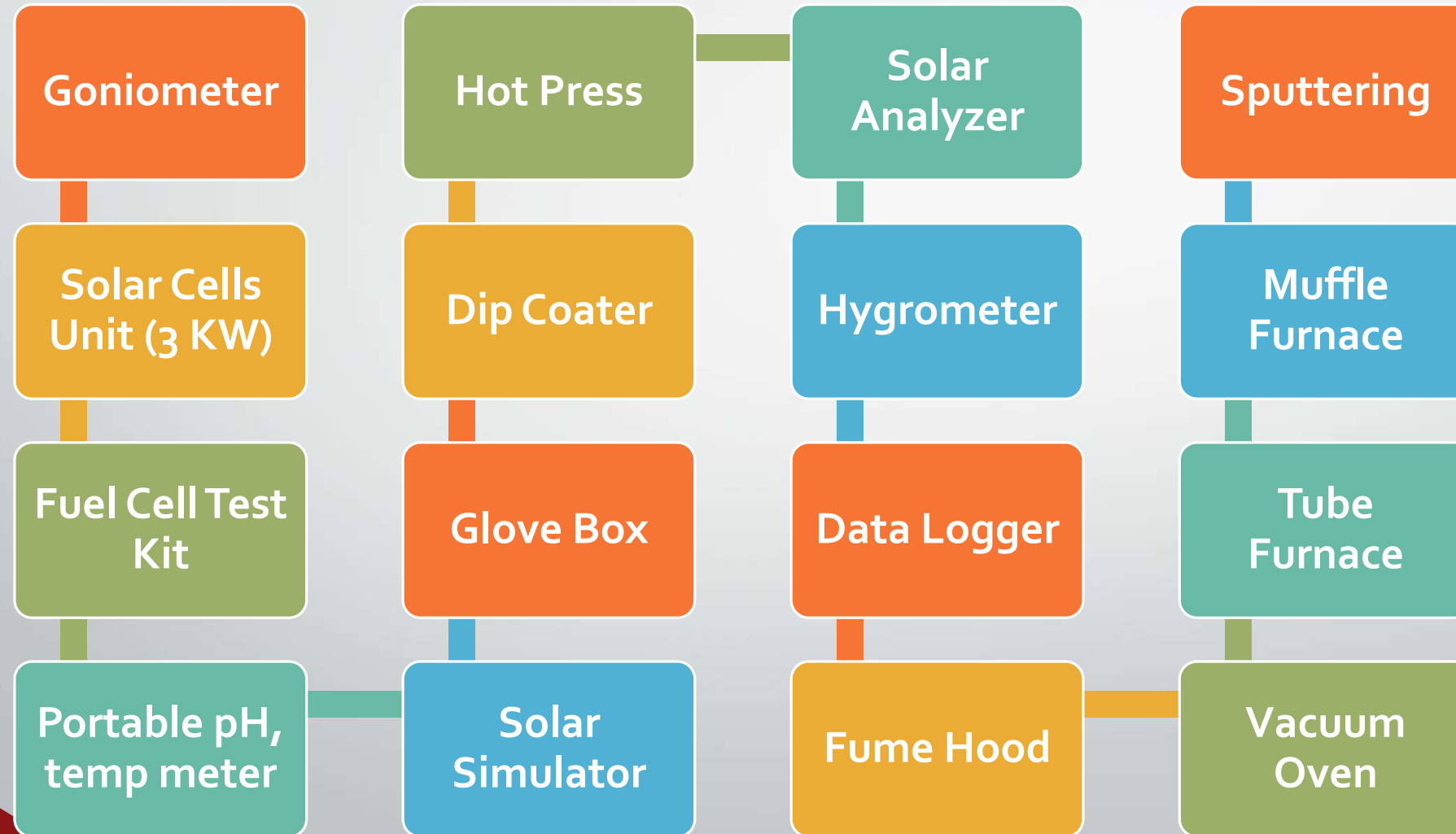




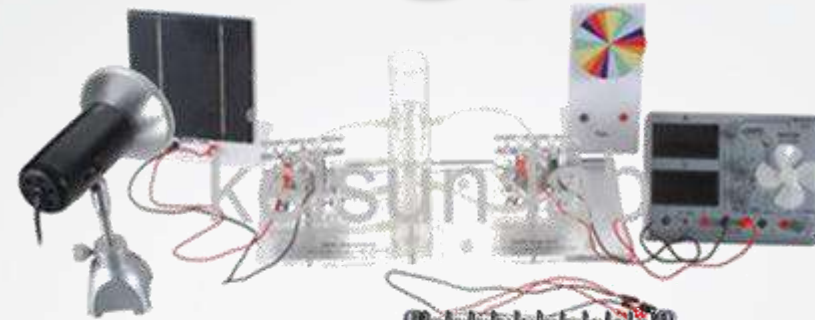


Renewable Energy Science & Engineering

Renewable Energy Lab



Renewable Energy Lab



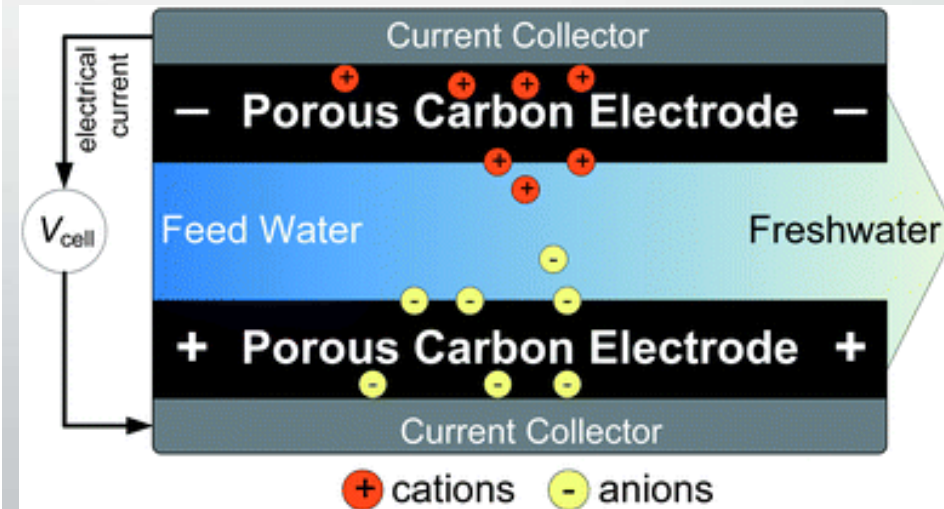
Projects

Title	Funding Agency	Total Fund
Design, Implementation and Performance of 5 kW Rooftop Grid Connected PV System: Faculty of Post graduates for Advanced Science: as a Case Study	BSU	270,000 EGP

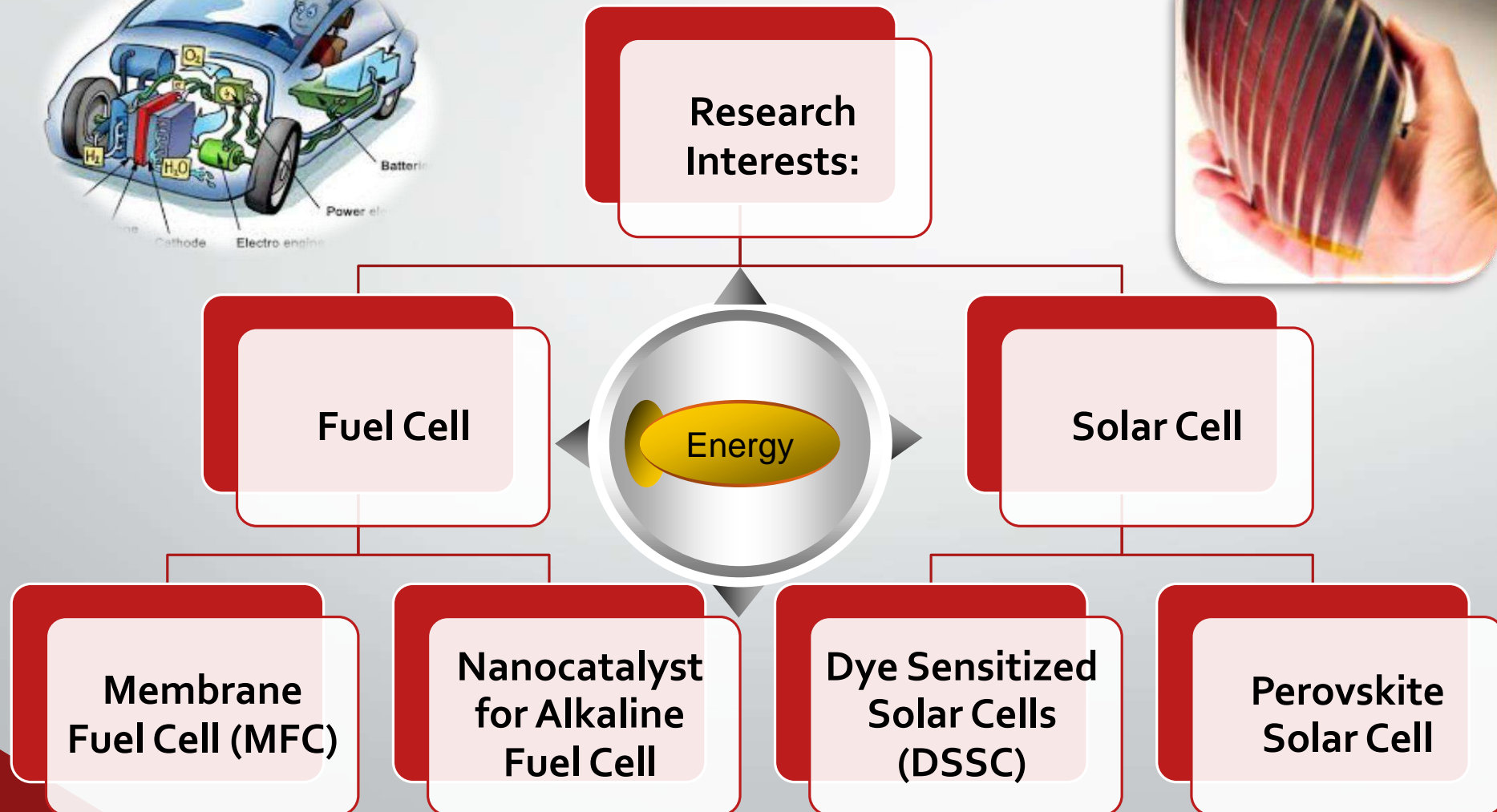
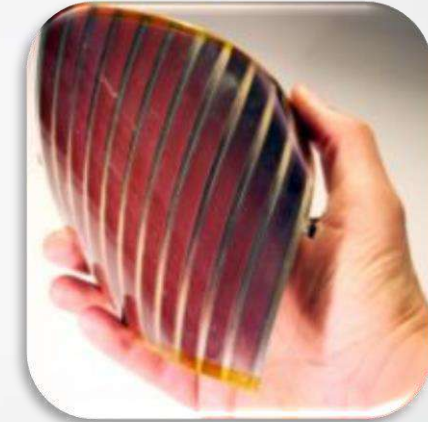
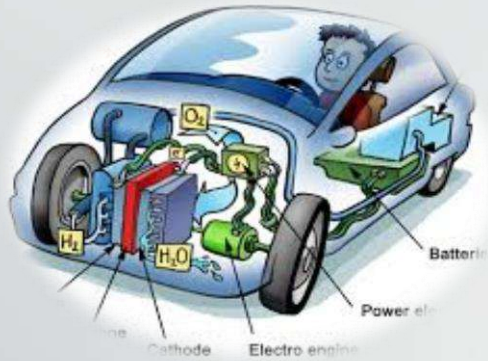


Projects under review

Title	Funding Agency	Total Fund
Development and Application of Nano-Enhanced Phase Change Materials for Cooling of Photovoltaic modules	STDF	999,440 EGP
Nanohybrid Graphene as an Effective Electrode for Ground Water Desalination via Capacitive Deionization Technology	BSU	50,000 EGP



Research Interests



Research Interests

Fuel Cells
Polymer membranes
Proton conductivity
Positron Annihilation
characterization
Technique

Solar Energy
Physics of
Buildings
Energy &
Environment


Nanomaterials
Graphene
Hydrogen
Storage
Membranes




Hydrogen
production
materials
Catalysis

**Surface
patterning
Wetting
properties
2D
nanomaterial
AFM**

Some courses offered at the Department



PV systems technology	<ul style="list-style-type: none">▪ The electrical power engineering basics▪ PV modules fundamentals▪ PV performance analysis
Design and application of PV systems	<ul style="list-style-type: none">▪ Basic design of (off grid and on grid) system▪ The use of advanced software programs
Renewable hybrid systems	<ul style="list-style-type: none">▪ Application of renewable hybrid systems in Rural electrification▪ Design of renewable hybrid systems
Hydropower system	<ul style="list-style-type: none">▪ Introduction to hydropower▪ Status of large and small hydropower development in the MENA region and the world in terms of capacity and energy production
Fuel Cells	<ul style="list-style-type: none">▪ Introduction to fuel cell▪ Fuel cell electrode based material▪ Fuel cell design and configuration



Energy Economics and Policies	<ul style="list-style-type: none"> ▪ Energy policies development ▪ Incentives and taxes ▪ Climate mitigation policies and renewable energy
Renewable energy and society	<ul style="list-style-type: none"> ▪ Awareness on renewable energy and its environment and social impact on society
Renewable energy market and Commercialization	<ul style="list-style-type: none"> ▪ The concepts of marketing and sales and how to use them in marketing and selling renewable energy technology.
Energy policy and planning	<ul style="list-style-type: none"> ▪ Global and local trends and developments in renewable energy technology and energy efficiency
Energy and environment	<ul style="list-style-type: none"> ▪ Introduction to Life Cycle Assessment of energy technology ▪ Introduction to carbon markets and clean development mechanism



PSAS- CENTRAL LAB

Currently in 1st phase of accreditation
1.8 MEGP



Fadwa



Nashaat



Eslam



Hossam



Doaa



Esraa



Sara

CL- Instrumentations

- Environmental analysis
- Water analysis
- Chemical analysis
- Physical analysis
- Biological analysis
- Etc.....

GC-Mass



GC-MS is used for separation and analysis of the compounds that can be vaporized without decomposition.

It is combined with mass spectroscopy to identify different substances within a sample.

HPLC-MS



- **HPLC-MS** used for separation of compounds that are thermally unstable and exhibit high polarity.
- It is combined with mass spectroscopy to identify different components within a sample.

Atomic Absorption (Flame & Graphite)



- It is used to identify the accurate concentration of substances by analyzing the spectrum produced when a substance is vaporized and absorbs certain frequencies of light eg. **Heavy metals**.

XRD (X-ray diffraction)



- **XRD** is used for phase identification along with phase quantification and crystallite size for all powdered samples.

FT-IR and FT-Raman



- **FT-IR** is used for identifying of certain function groups in a molecule.
- **Raman** is a complementary to IR used to measure the compounds that are inactive IR such as inorganics which have no dipole moments.

UV-VIS Spectrophotometer



- It is used for the quantitative determination of different analytes such as:
- transition metal ions, conjugated organic compounds and biological macromolecules.

Nano-Drop UV-Vis Spectrophotometer



- Measure the concentration and purity of DNA, RNA or protein samples using only 1 μL , we can obtain the results in less than 15 seconds.

Zeta-sizer



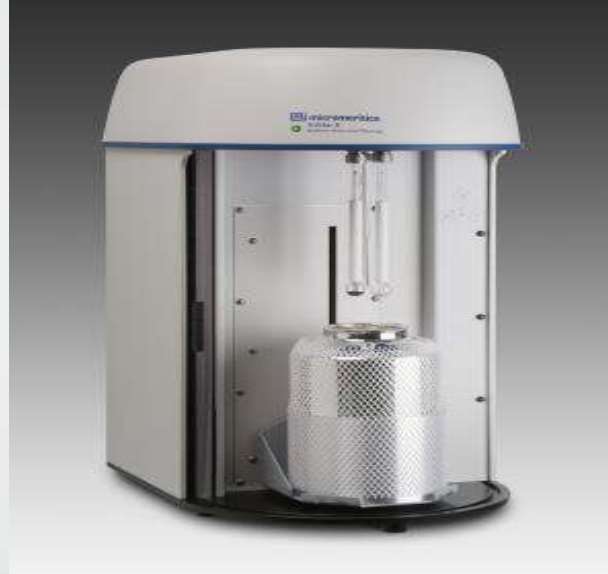
It is used for the measurement of the hydrodynamic size, electrophoretic mobility of proteins and zeta potential of colloids and nanoparticles.

PCR (Polymerase Chain Reaction)



- It is designed to amplify DNA to generate numerous copies of a specific DNA sequence to produce enough DNA for adequate testing.

BET surface area analyser



- It is a fully automated, three-station, surface area and porosity analyzer that delivers high-quality data

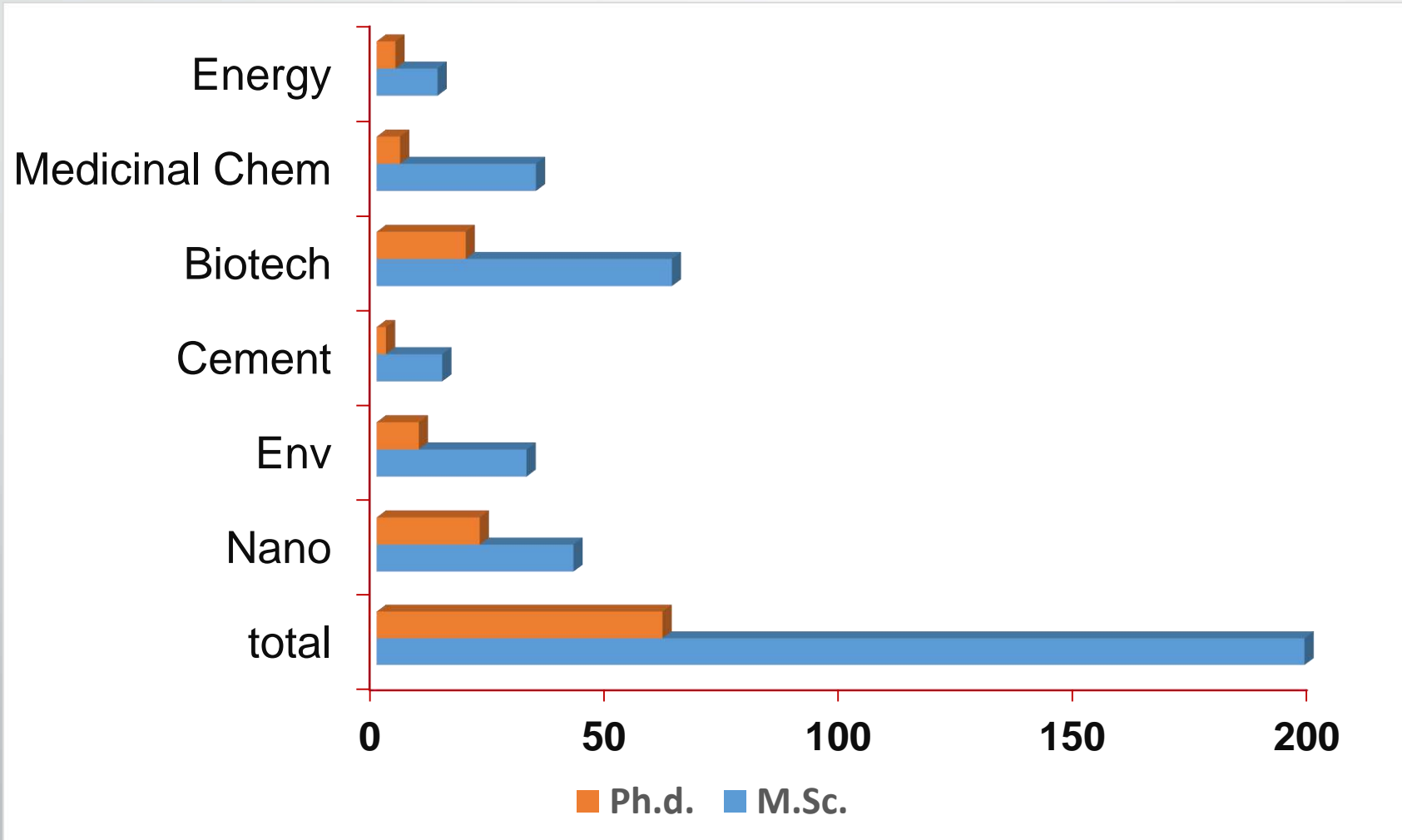


WATER

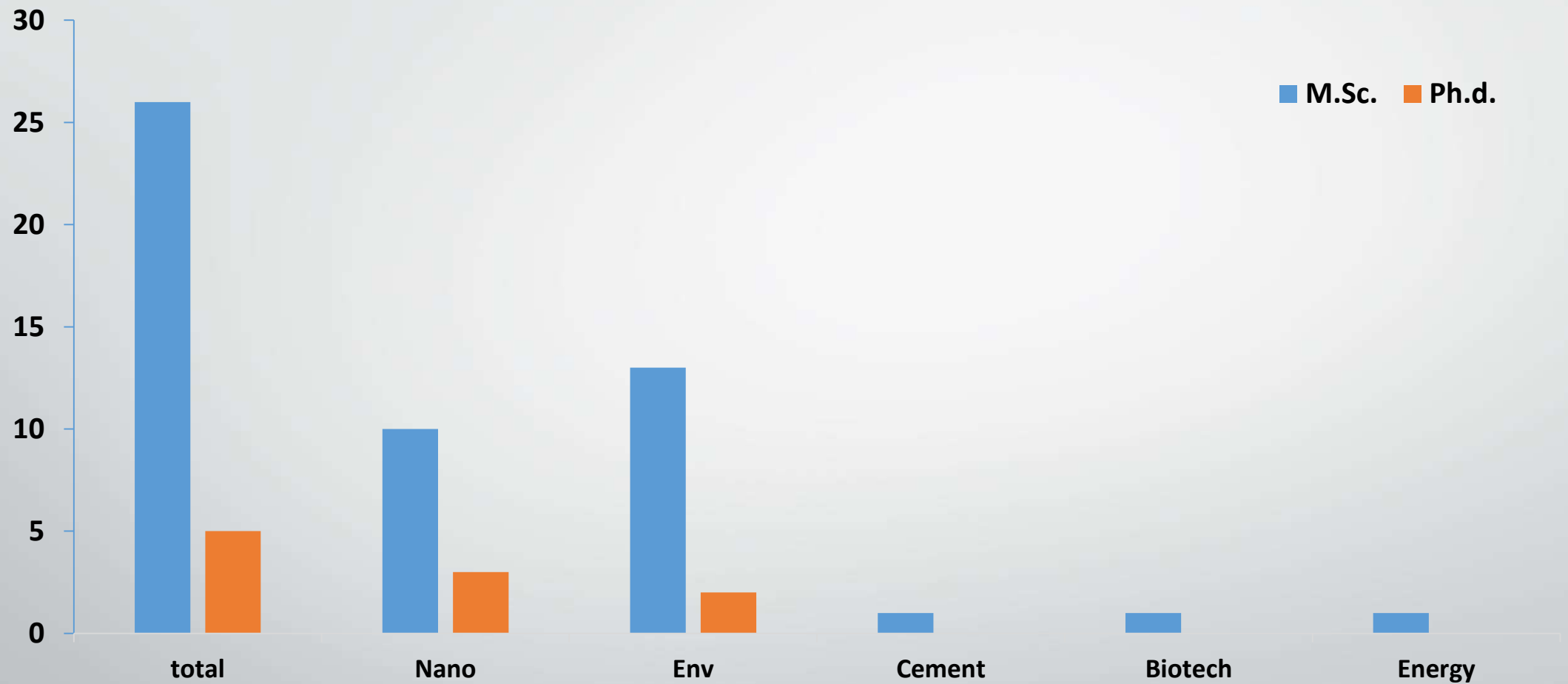
#	Course	Program	Credit hrs
1	Clean Water Technology	Diploma of Environmental Science and Industrial development	1
2	Environmental chemistry and analysis		2+1
3	Water Reclamation Technology		1
4	Environmental Legislative Framework and Methods of Enforcement		1
5	Industrial wastewater technology		1
6	Monitoring and operation of wastewater treatment	Master of Environmental Science and Industrial development	1
7	Membrane science and technology		2
8	Basic hydraulics		2
9	Instrumental Techniques	Diploma and M.Sc. materials science and nanotechnology	2+1

No of Master and Ph.D. thesis registered at the faculty PSAS

	total	Nano	Env	Cement	Biotech	Medicinal Chem	Energy
M.Sc.	198	42	32	14	63	34	13
Ph.d.	61	22	9	2	19	5	4



No of registered Thesis "water"



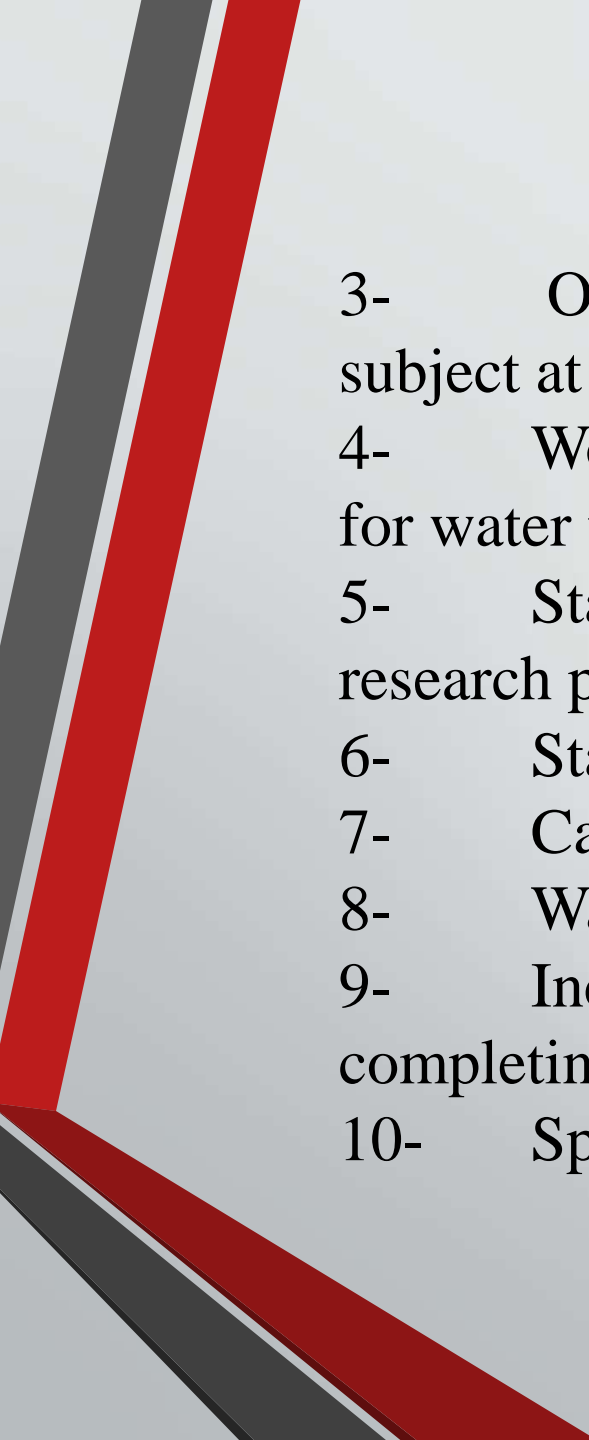
Master nano	Fabrication of nanofiber Composite membrane for industrial waste water treatment	10
	Preparation and Characterization of polymeric Nanofibers-Based Composites for Heavy metals Removal from Drinking and Ground water	
	Synthesis and Characterization of depod TiO ₂ - Graphene nano Composites for H ₂ Production from water	
	spectroscopic investigation of semiconducting metal oxide nanoparticles in waste water treatment	
	Nanocomposites for Arsenic Removal from Water	
	The impact of Main Drains On Qarun Lake And Waste Water Treatment Using Polymer Nanocomposites	
	Modified α -hematite nanostructures for photoelectrochemical water splitting	
	Optical and Magnetic Properties of Metals Substituted Bismuth Iron Oxide Nanopowder for Water Treatment Application	
	Synthesis and characterization of titanate nanotubes for heavy metals and organic pollutants removal from contaminated water	
	Multifunctional perovskite nanomaterials for photoelectrochemical water splitting	
Phd nano	municipal wastewater treatment using carbon nanotubes-cellulose nanocomposite	3
	application of nanotechnology for remediation of radioactive pollutants in water	
	Developed Hybride Nanomaterials for Highly Efficient Catalytic Water Splitting	

Phd environment	Modelling of the Impact of Socio-Economic and Environmental alterations on Surface Water Quality	2
	Assessment the risks and benefits of discharged alum drinking water treatment plants (DWTPs) sludge on water quality at Fayoum governorate, Egypt	
Master environment	HEAVY METALS MONITORING IN WATER, SEDIMENT AND FISH FROM THE NILE RIVER AND THEIR HEALTH RISK ASSESSMENT ON HUMANS AT THE EAST REGION OF BENI-SUEF, EGYPT	13
	Wastewater purification using immobilized Nanophotocatalysts	
	“Evaluation of drinking water quality using GIS: A case study in El Fayoum governorate- Egypt”	
	Application of nanotechnology methods in industrial wastewater treatment as an environmentally friendly in industrial food sector	
	Adress salinity wells and using the effluent for agriculture and live stock production	
	Extracted oils from variant domestic wastewater microalgae communities as a source of biodiesel	
	Using of algal free cells, treated and biofilms for Industrial waste water treatment	
	study on the electrospinning of polyimide fibers and its performance in waste water	
	Potentials of Nano - activated carboon prepared from agricultural Wastes for removal of heavy metals from waste water	
	Dual Applications of Duckweed in Wastewater Treatment and Biofuel Production	
	Investigation of some environmental impacts of anthropogenic pollutants on River Nile water quality	
	Determination, monitoring and risk assessment of selected pesticides in agriculture drain and Nile River, Assiut governorate	
	Assessment of the artificially condensed water from atmospheric air as an untraditional water resource: a novel approach for sustainable development of rural and isolated areas	
Master biotechnology	Optimization of algal biomass recovery using nanoparticles	1

Need Assessment

We aimed to achieve the sustainability in the project starting from the initial phase
Centre of Excellence for Water research

- 1- **On the undergraduate level** needs
 - The possibility of syllabus modification to meet the criteria of US universities
 - Addition of some practical experiments or a separate lab for water
 - Joint Degree (faculty of earth science- hydrogeology and environment program) , fund for undergraduate fees
 - Student exchange in the different programs (min one semester)
- 2- **On the postgraduate level** we could offer a topic based certificate or joint degree (professional water certificate or professional master degree) in water science and technology for all interested candidates graduates B.Sc. from any science, engineering, industrial education, agriculture, vet.medicine faculties

- 
- 3- Open access fees for some papers to be published on the “water” subject at our ICAS5
 - 4- Workshop with the ministry of water irrigation and the holding company for water to assess water problems and to allow research
 - 5- Statistics on assessment of water quality + analytical report –for research purposes
 - 6- Staff exchange upon a call
 - 7- Call for proposals “water”- ASRT and/or STDF
 - 8- Water prize: criteria on papers, patents and prototyping
 - 9- Incorporation of funds for TICO offices in the Egyptian universities for completing the prototypes
 - 10- Special issue to be edited in water in an impacted journal





دبلوم العلوم البيئية والتنمية الصناعية Diploma of Environmental Science and Industrial Development

دبلومة الدراسات البيئية والتنمية الصناعية هي دبلومة مصممة لتحقيق المعرفه البيئية المطلوبه للعاملين بمجالات مختلفه. الدبلومه تتكون من عدة محتويات مختلفه لتغطية المعرفة المطلوبه فى مجال البيئه. الدبلومه تمنح الدارسين البيئه التنافسيه العاليه ما بين محتويات دراسيه متنوعه و مهارات عمليه مختلفه لتخريج دارس ذو خلفيه جيده فى مجال البيئه وتطبيقاتها سواء الطبيعيه او التكنولوجيه فى مجال الصناعه.

الأهداف ومخرجات التعلم المقصودة:

1. جذب أصحاب التخصصات المختلفه الى تنميه المعرفه البيئيه.
2. تأهيل الدارسين بالمعلومات الاساسيه والمهارات المطلوبه فى مجال علوم البيئه وتطبيقاتها.
3. تغطيه عدة جوانب مختلفه لتتطابق مع الخلفيه العلميه للدارسين.
4. تأهيل الدارس لتطبيق ما تعلمه من علوم البيئه فى مجال عمله.
5. تأهيل الدارسين الى دراسات أكثر تخصصا فى مجالات علوم البيئه المختلفه.



Program Courses

1. Compulsory Courses:

First Semester							
Course code	Course title		Total Credit Hours	Lecture Credit Hours	Lab Credit Hours	Exam Duration (hour)	Final grades out of
	English	Arabic					
EN501	Environmental chemistry and analysis	التحليل الكيميائي والبيئي	3	2	1	2	150
EN502	Ecology	علم البيئة	3	2	1	2	150
EN503	Fundamentals of Air Pollution Control	أساسيات التحكم فى تلوث الهواء	3	2	1	2	150
EN504	Environmental Economics	اقتصاد بيئي	1	1	0	1	50
EN505	Clean Water Technology	تكنولوجيا المياه النظيفة	1	1	0	1	50
EN506	Solid and Hazardous Waste Management	ادارة المخلفات الصلبة والخطرة	2	2	0	2	100
EN507	Plant design	تصميم مصنع	1	1	0	1	50
Second Semester							
Course code	Course title		Total Credit Hours	Lecture Credit Hours	Lab Credit Hours	Exam Duration (hour)	Final grades out of
	English	Arabic					
EN511	Water Reclamation Technology	تكنولوجيا تجميع المياه	1	1	0	1	50
EN512	Environmental Legislative Framework and Methods of Enforcement	أساسيات التشريعات البيئية وطرق العقوبات	1	1	0	1	50
EN513	Workplace safety and health	السلامة و الصحة المهنية	1	1	0	1	50
EN514	Fundamentals of Oilfield Processing	أساسيات تجهيز حقول النفط	2	2	0	2	100
EN515	Environmental management system	نظام الادارة البيئية	1	1	0	1	50
EN516	Industrial wastewater technology	تكنولوجيا مياه الصرف الصناعي	1	1	0	1	50



جامعة بنى سويف
كلية الدراسات العليا للعلوم المتقدمة
قسم علوم البيئة و التنمية الصناعية



EN517	Practical environmental analysis	مقرر عملى تحليل بيئى	3	2	1	2	150
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2. Elective courses:

Elective Courses							
Course code	Course title		Total Credit Hours	Lecture Credit Hours	Lab Credit Hours	Exam Duration (hour)	Final grades out of
	English	Arabic					
EN508	Membrane science and technology	علوم وتكنولوجيا الأغشية	2	2	0	2	100
EN509	Basic hydraulic	الهيدروليكية الأساسية	2	2	0	2	100
EN510	Risk Management	ادارة المخاطر	2	2	0	2	100
EN518	Basics of Nano technology	أساسيات علم النانو	2	2	0	2	100
EN519	Energy conservation management	ادارة الحفاظ على الطاقة	2	2	0	2	100
EN520	Process instrumentation and control	الاجهزة العملية والتحكم	2	2	0	2	100

For graduation you should complete total credit hours = 28

[Compulsory Courses (24 credit hours) + Elective Courses (4 credit hours)]



Course Specifications

EN501 Environmental Chemistry and Analysis

This course introduces graduates to the field of environmental chemistry and provides a foundation for applications in pollution control and water & wastewater technology. Graduates will study the practical aspects of environmental chemistry, quantitative measurements, and analysis of air, water, and wastewater. Principles of measurement, instrumentation, and analysis are emphasized using an application-oriented approach.

EN502 Ecology

Ecology is the study of living things in their natural environment. This module focuses on the significance and function of natural ecosystems, and how humans have affected these systems over time. It concentrates on the interaction between human activities, resources, and the environment. As the human population grows and technology advances, pressures on earth's natural systems are becoming increasingly intense and complex. This module aims to promote greater environmental awareness and nurture social responsibility towards the environment.

EN503 Fundamentals of Air Pollution Control

Introduction to air pollution. Chemistry of air pollution. Effects of air pollution. Air pollutants from industrial processes. Transport of air pollutants. Indoor air pollution. Air pollution measurements and analytical techniques. Air pollution laws and regulations, and the emission standards. Air pollutant concentration models. Air pollution control. Future of air pollution.

EN504 Environmental Economics

This course aims at equipping students with economic methods and tools to analyze basic environmental issues while strengthening group work skills. This course combines theoretical analysis with discussions on specific environmental policies as applied to water,



air pollution, energy, climate change, and human health issues. Within these examples, particular topics that will be covered are the concepts of sustainability, microeconomic analysis of environmental regulation, the problem of social cost, policy instrument choice, and estimating costs and benefits of environmental improvements via revealed preferences (hedonic analysis, travel cost method, household production) or stated preferences.

EN505 Clean Water Technology

This module introduces the processes for treating raw water from various surface water sources to produce potable water. Graduates will study raw water quality parameters, treatment techniques, and the monitoring and operation of water treatment systems. The focus is on conventional water treatment technologies emphasizing on chemical coagulation and flocculation processes for removal of suspended and colloidal solids in raw water. Topics covered include pre-treatment of raw water, sedimentation, coagulation, flocculation, filtration, and disinfection techniques.

EN506 Solid and Hazardous Waste Management

Graduates will examine how solid and hazardous waste is generated; the pollution problems related to waste disposal; and methods of collection, handling, treatment, and disposal of waste. Concepts of waste minimization such as recycling, reusing, reducing, and waste exchange will be highlighted as effective tools in waste management. Issues in biomedical waste generation, collection, and treatment will be addressed. Local legislation for solid and hazardous waste will be explained in relation to the overall waste management practice.

EN507 Plant Design

A study of the engineering aspects involved in the development of an industrial plant. Capital and manufacturing cost estimates. Safety in design. Feasibility survey. Equipment design and specification. Plant layout and location. Students will work in small groups to produce a process design and economic evaluation of a complete industrial plant. The



students will learn:

- Plant layout fundamentals and work flow procedures
- Terminology and symbols used in plant layout
- Fundamental principles of chemical process technology
- Process flow diagrams (PFDs)
- Equipment used in process plants
- Instrument symbols and abbreviations
- Piping and instrumentation diagrams (P&IDs)
- Piping design and engineering principles
- Terminology, symbols and abbreviations used in piping design
- Piping specifications and piping codes
- Components of piping systems - fittings, flanges and valves
- Piping isometrics and bill of materials.

EN508 Membrane Science and Technology

This module aims to equip graduates with fundamental knowledge of membrane science and membrane applications in environmental engineering. Topics covered in this module include the types of membranes and membrane modules, the basic principles of membrane fabrication, general theory of membrane transport, membrane separation process, membrane fouling, liquid membranes, and facilitated transport. Membrane applications in water reclamation recycling and reuse will also be covered.

EN509 Basic Hydraulic

Graduates will examine the basic hydraulic principles and fundamental concepts that are essential for the study of water and wastewater technologies. Topics covered include the properties of fluid, manometry, hydrostatics, and fundamental principles of fluid flow. Head loss in pipeline, design of pipeline, flow measurements, and pipe network analysis will also be covered. Graduates will also learn about open channel flow and the design of surface water drainage system.



EN510 Risk Management

What is risk management? Why accidents occur. How to avoid accidents. The consequences. Personnel health and safety. Process safety analysis. Loss prevention. Process safety in design and operations. Defining and quantifying risk. Checklists. Hazard and operability analysis (HAZOP) studies. Hazard analysis (HAZAN) techniques. Human factors. Linking HAZOP, process control, instrumentation and alarm systems. Cost of plant safety. Environmental impact. Case studies of serious plant accidents.

EN511 Water Reclamation Technology

Graduates will explore the fundamentals of collection systems for wastewater from domestic premises, wastewater treatment techniques, monitoring and operation of wastewater treatment systems, and the code of practice relevant to sewerage and sewage treatment. The design of sewer collection systems will also be covered in detail. Emerging technologies in water reclamation and water recycling will be emphasized in this module

EN512 Environmental Legislative Framework and Methods of Enforcement

Structural: Bridges roads towers power pylons -Transportation: Roads traffic control airports -Water: Dams pipelines purification works reservoirs -Geotechnical: Foundations excavations and fills-Urban: Municipal services development and maintenance of towns -recreational facilities -Construction: Construction management-Environmental: Impact studies social and natural environments harmonising affected elements and resources.

EN513 Workplace Safety and Health

This module focuses on the study of various aspects that are critical to the provision of a safe working environment. Topics covered include toxicology, clean air and ventilation, control of temperature and humidity, industrial hygiene and industrial diseases.



EN514 Fundamentals of Oilfield Processing

Introduction to Oilfield Processing. Measurement. Instrumentation. Relief systems. Storage. Multiphase flow calculations in pipe lines. Separator design and sizing of flow lines. Pumps and Hydraulic Turbines. Hydrate formation and remedial options. Prime mover for mechanical drive. Hydrocarbon Recovery. Utilities in upstream processing. Dehydration and hydrocarbon treating. Compressors, Expanders and Refrigerators. Utilities in upstream processing. Dehydration and hydrocarbon treating.

EN515 Environmental Management System

In this course, graduates will learn the application of concepts and principles in environmental management. Topics covered include the fundamentals of environmental impact assessment (EIA), environmental baseline studies (EBS), risk assessment, environmental management systems (EMS), ISO 14001, OSHA 18001 and environmental auditing.

EN516 Industrial Wastewater Technology

Different industrial processes result in unique type and characteristics of industrial wastewater. Considering specific pollutants and toxic substances, treatment methodology applicable for conventional domestic wastewater is not all together applicable for industrial wastewater. This module introduces graduates to specific industrial wastewater problems and addresses possible unit processes applicable to industrial wastewater treatment. These unit processes, along with conventional water pollution treatment techniques, can then be applied as a complete treatment flow for different industrial wastewater types. The module will cover basic physical, chemical, and biological treatment technologies and also highlight specific industrial wastewater treatment methods and anaerobic treatment applications.

EN517 Practical environmental analysis



- Classical analysis
- Water analysis
- Cement analysis
- Instrumental analysis

EN518 Basics of Nano technology

Introduction to nanoscience – definition of nanomaterials and nanoscale – preparation methods – characterization and application.

EN519 Energy conservation management

Energy consumption is at an all-time high, and it is uncertain how high energy costs will go. This module will teach graduates energy conservation efforts and innovative programs to help people, including businesses, get in the habit of using energy more efficiently, thereby saving money, energy and the environment.

EN520 Process instrumentation and control

Graduates will study the principles and applications of process instruments and the fundamentals of automatic process control systems, which include the basic concepts of analogue and digital control, principles of feedback and loop stability. The module includes a site visit to a control plant to enhance student learning.

ماجستير العلوم في العلوم البيئية والتنمية الصناعية Master of Science in Environmental Science and Industrial Development

ماجستير الدراسات البيئية والتنمية الصناعية هو برنامج يتكون من محتويات دراسية متعددة ومختلفة بالإضافة الى بحث متخصص فى احدى مجالات البيئة. الماجستير يقوم على التناغم بين العلوم البيئية المختلفة لتخدم الدراسين فى تقديم حلول مبتكرة لمشاكل البيئة وعلاقتها بالمجتمع, الصناعة, الاقتصاد والتنمية الشاملة .

الأهداف ومخرجات التعلم المقصودة:

1. إمداد الباحث بمعرفة متخصصة فى مجالات البيئة
2. تجهيز الباحثين بالمهارات البحثية والتطبيقية والتحليلية المختلفة لإجراء البحوث فى مجالات البيئة
3. جذب المتخصصين فى مجالات البيئة الى تقديم أبحاث نافعة للمجتمع
4. تقديم رسالات بحثية عالية الجودة من خلال اشراف دقيق وعمل على أعلى المستويات
5. خدمة المجتمعات الصناعية خاصة و الحضريه وغيرها من خلال تقديم حلول للمشاكل التى تضر البيئة بها
6. خدمة المجتمعات والحكومات والجهات المختلفة بالمشاركة فى تحقيق التنمية الشاملة
7. جذب أصحاب التخصصات المختلفة الى تنمية المعرفة.

تكون الدراسة علي مرحلتين

المرحلة الاولى: دراسة نظرية لمدة عام أكاديمي Pre-master courses

المرحلة الثانية: تسجيل النقطة البحثية وإجراء الأبحاث المعملية و نشر بحث دولي واحد علي الأقل و كتابة الرسالة العلمية. و تمنح الدرجة بعد تحكيم الرسالة.



Pre-master Courses

1. Compulsory Courses:

First Semester							
Course code	Course title		Total Credit Hours	Lecture Credit Hours	Lab Credit Hours	Exam Duration (hour)	Final grades out of
	English	Arabic					
EN601	Principles of Environmental Risk Management	أساسيات ادارة المخاطر البيئية	2	2	0	2	100
EN602	Environmental law and legislatives	القوانين والتشريعات البيئية	1	1	0	1	50
EN603	Fundamentals of Air Pollution Control	أساسيات التحكم فى تلوث الهواء	2	2	0	2	100
EN604	Ecology	علم البيئة	2	2	0	2	100
EN605	Instrumental Analysis	التحليل الالى	1	1	0	1	50
EN606	Environmental civil engineering	الهندسة المدنية البيئية	2	2	0	2	100
GC601	Scientific thinking and writing	التفكير والكتابة العلمية	1	1	0	1	50
Second Semester							
Course code	Course title		Total Credit Hours	Lecture Credit Hours	Lab Credit Hours	Exam Duration (hour)	Final grades out of
	English	Arabic					
EN611	Monitoring and operation of wastewater treatment	رصد وتشغيل عملية معالجة مياه الصرف	1	1	0	1	50
EN612	Cement and Environmental effect	الاسمنت والتأثير البيئى	2	2	0	2	100
EN613	Fundamentals of Oilfield Processing	أساسيات تجهيز حقول البترول	2	2	0	2	100
EN614	Environmental Chemical Analysis	التحليل الكيمائى البيئى	1	1	0	1	50
EN615	Environmental management system	نظام الادارة البيئية	1	1	0	1	50
EN616	Industrial biotechnology	علم التقنيه الحيويه الصناعية	2	2	0	2	100



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قسم علوم البيئة و التنمية الصناعية



EN617	Solids and hazardous waste management	ادارة المخلفات الصلبة والخطرة	2	2	0	2	100
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2. Elective courses:

Elective Courses							
Course code	Course title		Total Credit Hours	Lecture Credit Hours	Lab Credit Hours	Exam Duration (hour)	Final grades out of
	English	Arabic					
EN608	Membrane science and technology	علوم وتكنولوجيا الأغشية	2	2	0	2	100
EN609	Basic hydraulic	الهيدروليكا الاساسية	2	2	0	2	100
EN610	Petroleum Processing	تكرير البترول	2	2	0	2	100
EN618	Fundamental of Nano science	أساسيات علم النانو	2	2	0	2	100
EN619	Environmental statistics	الاحصاءات البيئية	2	2	0	2	100
EN620	Energy conservation management	ادارة الحفاظ على الطاقة	2	2	0	2	100
EN621	Process instrumentation and control	الاجهزة العملية و التحكم	2	2	0	2	100

To complete the pre-requisite courses (pre-master courses) you should finish total
credit hours = 26

[Compulsory Courses (22 credit hours) + Elective Courses (4 credit hours)]



Course Specifications

EN601 Principles of Environmental Risk Management

Concepts and principles underpinning Environmental Risk Assessment and Management, including aspects such as Hazard, Harm, Risk, Pollution, etc., in the context of the principles of Sustainability.-Understanding what ‘a risk-averse and cautious approach’ entails-Tools and Guidelines for Risk Assessment-Multi-Criteria Decision Making and Risk Management Planning-Practical Case Study – Risk Assessment for Mine Closure- Risk assessment provides a systematic procedure for predicting potential risks to human health or the environment. The aim of a chemical risk assessment is to investigate if a chemical is being used or can be used as intended without causing detrimental effects to human health.

EN602 Environmental law and legislative

Civil liability resulting from environmental damage: an international and comparative law overview- Technical and scientific co-operation. National substantive law: overview of the principal judicial means for obtaining reparation for damage resulting from environmental pollution in common law and in civil law. The conflict of laws in the field of environmental liability- Legislative cooperation. The environmental disaster: a mass tort litigation.

EN603 Fundamentals of Air Pollution Control

Air pollutants. - Effects on human’s beings and environ. Sources of air pollutants- Pollutant concentration and emission –measurements- Chemistry in the atmosphere. Dispersion of pollutants in the atmosphere- Regulations and laws- General Ideas in Air Pollution Control- A better process design- After-treatment processes- Alternative approaches- Control mechanisms. Size Distributions -Wall collection devices- Dividing collection devices- Gas control – Incineration- Regional and Global Issues- Global



warming- Stratospheric ozone depletion. Acid rain. - Long-range transport- Hazardous air pollution- Urban smog- Indoor air pollution.

EN604 Ecology

This module introduces graduates to the field of environmental microbiology, parasitology and epidemiology, and provides a foundation for further studies and applications in water & wastewater treatment, environmental health and environmental management. Graduates will also be taught selected topics on human biology and food-borne diseases.

EN605 Instrumental Analysis

Introduction to Instrumental analysis-Radiation and Bioradiation-IR, UV, NMR, MS, and electronic microscope (Scanning and transmittance) –electrophoresis –spectrophotometer and HPLC devices.

EN606 Environmental Civil Engineering

Structural: Bridges roads towers power pylons -Transportation: Roads traffic control airports -Water: Dams pipelines purification works reservoirs -Geotechnical: Foundations excavations and fills-Urban: Municipal services development and maintenance of towns - recreational facilities -Construction: Construction management-Environmental: Impact studies social and natural environments harmonising affected elements and resources.

GC601 Scientific Thinking and Writing

Scientific Planning – How to use a research engine - How to write a proposal – How to write a paper – Research ethics – Publication – social media.

EN608 Membrane Science and Technology

This module aims to equip graduates with fundamental knowledge of membrane science and membrane applications in environmental engineering. Topics covered in this module



include the types of membranes and membrane modules, the basic principles of membrane fabrication, general theory of membrane transport, membrane separation process, membrane fouling, liquid membranes, and facilitated transport. Membrane applications in water reclamation recycling and reuse will also be covered.

EN609 Basic Hydraulic

Graduates will examine the basic hydraulic principles and fundamental concepts that are essential for the study of water and wastewater technologies. Topics covered include the properties of fluid, manometry, hydrostatics and fundamental principles of fluid flow. Head loss in pipeline, design of pipeline, flow measurements and pipe network analysis will also be covered. Graduates will also learn about open channel flow and the design of surface water drainage system.

EN610 Petroleum Processing

Formation of petroleum. Exploration and identification of petroleum-bearing structures and their evaluation. Drilling operations and their control. Design, operation and control of production wells. Technologies for enhancing oil production from existing wells. Testing and evaluation of reservoirs. Reservoir management.

EN611 Monitoring and Operation of Wastewater Treatment

Wastewater treatment techniques, monitoring and operation of wastewater treatment systems, and the code of practice relevant to sewerage and sewage treatment. The design of sewer collection systems will also be covered in detail. Emerging technologies in water reclamation and water recycling will be emphasized in this module

EN612 Cement and Environmental Effect

Description of the cement industry- Pressures on the environment- Resource use- Emissions to air- Discharges to water- Waste production and management- Transport- Pollution incidents and prosecutions- Noise, vibration, odor and aesthetics- Standards of



environmental management- Environmental Impacts.

EN613 Fundamentals of Oilfield Processing

Introduction to Oilfield Processing. Measurement. Instrumentation. Relief systems. Storage. Multiphase flow calculations in pipe lines. Separator design and sizing of flow lines. Pumps and Hydraulic Turbines. Hydrate formation and remedial options. Prime mover for mechanical drive. Hydrocarbon Recovery. Utilities in upstream processing. Dehydration and hydrocarbon treating. Compressors, Expanders and Refrigerators. Utilities in upstream processing. Dehydration and hydrocarbon treating.

EN614 Environmental Chemical Analysis

This course introduces graduates to the field of environmental chemistry and provides a foundation for applications in pollution control and water & wastewater technology. Graduates will study the practical aspects of environmental chemistry, quantitative measurements and analysis of air, water and wastewater. Principles of measurement, instrumentation and analysis are emphasized using an application-oriented approach.

EN615 Environmental Management System

In this course, graduates will learn the application of concepts and principles in environmental management. Topics covered include the fundamentals of environmental impact assessment (EIA), environmental baseline studies (EBS), risk assessment, environmental management systems (EMS), ISO 14001, OSHA 18001 and environmental auditing.

EN616 Industrial Biotechnology

The influence and application of biotechnology in aspects relating to the environment. Graduates will study five major areas: treatment of waste, treatment of already polluted sites and waterways, prevention of pollution, monitoring of pollution, and



biotechnological innovations in environmental management.

EN618 Basics of Nanoscience

Introduction to nanoscience – definition of nanomaterials and nanoscale – preparation methods – characterization and application

EN619 Environmental Statistics

Applications of statistics in environmental pollution studies involving air, water, or soil monitoring; sampling designs; trend analysis; censored data. Proper sampling design and collection, analysis, and presentation of environmental data will lead to defensible interpretation and conclusions for any environmentally-based problem.

EN620 Energy Conservation Management

Energy consumption is at an all-time high, and it is uncertain how high energy costs will go. This module will teach graduates energy conservation efforts and innovative programs to help people, including businesses, get in the habit of using energy more efficiently, thereby saving money, energy and the environment.

EN621 Process Instrumentation and Control

Graduates will study the principles and applications of process instruments and the fundamentals of automatic process control systems, which include the basic concepts of analogue and digital control, principles of feedback and loop stability. The module includes a site visit to a control plant to enhance student learning.

دبلوم كيمياء وتكنولوجيا صناعة الأسمنت Diploma of Cement Chemistry and Technology

تم تصميم برنامج دبلوم كيمياء وتكنولوجيا صناعة الأسمنت بشكل يفيد الطالب بوسائل المعرفة المتطورة ومهارات الابتكار و التصميم الفكري مما سيكون له عائد مباشر وغير مباشر على صناعة الأسمنت والبيئة في مصر والشرق الأوسط. كما يهدف البرنامج لدعم التحديث والخبرات المطلوبة لفرص عمل في مجالات واسعة بما فيها صناعة الأسمنت والتنمية البيئية.

الأهداف ومخرجات التعلم المقصودة:

1. أن يصبح الخريج ملماً بالمعارف والمفاهيم العلمية والعملية الأساسية الخاصة بصناعة الأسمنت والتنمية البيئية.
2. أن يكون الخريج قادراً على التعامل مع تقنيات صناعة الأسمنت واستخدام الأجهزة الخاصة لهذا الغرض.
3. أن يقدم خريجاً قادراً على التميز في سوق العمل وبخاصة في مجال كيمياء وتكنولوجيا صناعة الأسمنت والمراكز المهمة بذلك.
4. ترسيخ قواعد الممارسات الامنة داخل المعامل والإهتمام بالصحة والسلامة المهنية.
5. تأهيل كفاءات قيادية، فنية وأكاديمية، في مجال الصناعة تسهم في نشر الوعي البيئي بين أفراد المجتمع.
6. تطبيق أساليب ادارة الجودة الشاملة في التصنيع والانتاج لصناعة الاسمنت.
7. تأهيل الدارسين المتميزين بالمضي قدما في مجال البحث العلمي والحصول على الشهادات العليا في هذا المجال.
8. أن يتمتع الخريج بالقيم والمعتقدات التي تتناسب مع أخلاقيات مجتمعنا العربى ومتمشياً مع قوانينه النافذة.



Program Courses

1. Compulsory Courses:

First Semester							
Course code	Course title		Total Credit Hours	Lecture Credit Hours	Lab Credit Hours	Exam Duration (hour)	Final grades out of
	English	Arabic					
CT501	Environmental Impact Assessment of Cement Industrial	تقييم الأثر البيئي لصناعة الاسمنت	2	2	0	2	100
CT502	Health, Safety & Environmental Management	الصحة والسلامة و الإدارة البيئية	2	2	0	2	100
CT503	Fundamentals of Air Pollution Control	أساسيات التحكم في تلوث الهواء	3	2	1	2	150
CT504	Instrumental Analysis	تحليل أجهزة	3	2	1	2	100
CT505	Kiln Process Operation and Control	التشغيل والتحكم فى الفرن	2	2	0	2	100
CT506	Chemistry and Production of Cement	كيمياء وانتاج الاسمنت	1	1	0	1	50
CT507	Industrial waste	مخلفات صناعية	1	1	0	1	50
Second Semester							
Course code	Course title		Total Credit Hours	Lecture Credit Hours	Lab Credit Hours	Exam Duration (hour)	Final grades out of
	English	Arabic					
CT511	Cement Plant Instrumentation and control	أجهزة وتحكم مصنع الأسمنت	1	1	0	1	50
CT512	Cement and Environmental effect	الاسمنت و الأثر البيئي	3	2	1	2	1500
CT513	Dedusting Equipment and cement standards	أجهزة إزالة الغبار و معايير الاسمنت	1	1	0	1	50
CT514	Environmental Legislative Framework and Methods of Enforcement	الإطار التشريعي البيئي وطرق تنفيذ	1	1	0	1	50



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CT515	Mining, Mineral Processing and Cement	المعادن تعدين ومعالجة والاسمنت	2	2	0	2	100
CT516	Principles of Environmental Risk Management	اساسيات إدارة المخاطر البيئية	2	2	0	2	100

2. Elective courses:

Elective Courses							
Course code	Course title		Total Credit Hours	Lecture Credit Hours	Lab Credit Hours	Exam Duration (hour)	Final grades out of
	English	Arabic					
CT508	Civil Liability in Relation to Environmental Pollution	المسؤولية المدنية الخاصة بالتلوث البيئي	2	2	0	2	100
CT509	Environmental civil engineering	الهندسة المدنية البيئية	2	2	0	2	100
CT510	Economic of cement	اقتصاد الاسمنت	2	2	0	2	100
CT517	Energy conservation management	إدارة توفير الطاقة	2	2	0	2	100
CT518	Monitoring and operation of wastewater treatment	رصد وعملية معالجة مياه الصرف	2	2	0	2	100

For graduation you should complete total credit hours = 28

[Compulsory Courses (24 credit hours) + Elective Courses (4 credit hours)]



Course Specifications

CT501 Environmental Impact Assessment of Cement Industrial

The EIA process should proceed through a number of steps:

- Description of the project: What type of projects, its size, components, and processes expected, all stages of implementation?
- Screening: is an EIA required?
- Scoping, or identification of potential environmental impacts: What has to be covered in the formal EIA and in what detail?
- Baseline: What are the existing environmental conditions? - Prediction: What environmental impacts will the project have? - Evaluation: How will these impacts affect people and resources, and how significant are the resulting effects?
- Mitigation: Can significant negative effects be avoided or made acceptable? Can benefits be enhanced?

CT502 Health, Safety & Environmental Management

Criteria for evaluating the significance of impacts, Health, Safety & Environmental Management, and their effects should be set in advance. They should be based on local standards wherever possible. Where these are not available, acceptable international standards should be used (e.g. WHO, US EPA, etc. guidelines).

CT503 Fundamentals of Air Pollution Control

Air pollutants. -Effects on human beings and environ. Sources of air pollutants - Pollutant concentration and emission – measurements - Chemistry in the atmosphere. Dispersion of pollutants in the atmosphere - Regulations and laws - General Ideas in Air Pollution Control-A better process design-After-treatment processes - Alternative approaches - Control mechanisms. Size distributions - Wall collection devices - Dividing collection



devices - Gas control –Incineration-Regional and Global Issues-Global warming - Stratospheric ozone depletion. Acid rain.-Long-range transport-Hazardous air pollution-Urban smog-Indoor air pollution.

CT504 Instrumental Analysis

Introduction to Instrumental analysis-Radiation and Bioradiation-IR, UV, NMR, MS, and electronic microscope (Scanning and transmittance) –electrophoresis –spectrophotometer and HPLC devices

CT505 Kiln Process Operation and Control

The Course contents: Process and kiln system, Basic principles of operation. Chemical Reactions in the Kiln. Kiln Zones, Raw Material characteristics. Liquid Phase and importance of Iron and Aluminum content, Fuel types and their characteristics, Combustion Theory, Calcliner Operation, Calcliner Fuels, Heat Balances. Heat Balance work session, Optimization of heat consumption, Behavior of volatile matter. Volatile matter work session, Clinker coolers, Operations, and optimization of clinker coolers, Emissions of NO_x and SO_x from cement kilns. New emission standards, Starting, and Stopping the kiln.

CT506 Chemistry and Production of Cement

The production of cement takes place with several steps:

- Quarrying of limestone and shale
- Dredging the ocean floor for shells
- Digging for clay and marl
- Grinding, Blending of components
- Fine grinding, Burning, Finish grinding, Packaging and/or shipping.



CT507 Industrial waste

The aim of the course is to study wastes from industries, characterization of waste stream, management of industrial wastewater, source reduction, treatment and disposal of solid wastes, methods for treating air discharges and the technologies for waste treatment. Provide the student with the skills required for management of industrial waste.

CT508 Civil Liability in Relation to Environmental Pollution

Civil liability resulting from environmental damage: an international and comparative law overview- Technical and scientific co-operation -National substantive law: overview of the principal judicial means for obtaining reparation for damage resulting from environmental pollution in common law and in civil law -The conflict of laws in the field of environmental liability- Legislative cooperation -The environmental disaster: a mass tort litigation.

CT509 Environmental civil engineering

Structural: Bridges roads towers power pylons-Transportation: Roads traffic control airports-Water: Dams pipelines purification works reservoirs-Geotechnical: Foundations excavations and fills-Urban: Municipal services development and maintenance of towns -recreational facilities-Construction: Construction management-Environmental: Impact studies social and natural environments harmonising affected elements and resources.

CT510 Economic of Cement

Feasibility studies, cash flow, balance sheet, return on investment, decision making, opportunity cost, interest rate to review the future money value, currency exchange

CT511 Cement Plant Instrumentation and Control

Graduates will study the principles and applications of process instruments and introduction to Instrumental Analysis-Radiation and Bioradiation-IR, UV, NMR, MS, and



electronic microscope (Scanning and transmittance) –electrophoresis –spectrophotometer and HPLC devices. Software control, control room operation, auto pilot (expert optimizer, other simulation programs) flow meters, weight feeders calibration, belt scales.

CT512 Cement and Environmental Effect

Description of the cement industry- Pressures on the environment- Resource use- Emissions to air- Discharges to water- Waste production and management- Transport- Pollution incidents and prosecutions- Noise, vibration, odor and aesthetics- Standards of environmental management- Environmental Impacts.

CT513Dedusting Equipment and Cement Standards

The main sources of dust emissions in the cement industry. Sources of emissions in particular disorganized emissions also include all sorts of feeding devices, packaging installations and silos. Type of technological installation, types of equipment used for dedusting in the cement industry. Electro filters and, Bag (fabric) filters. Cement standards according to (Egyptian standards 1-4756/2007).

CT514 Environmental Legislative Framework and Methods of Enforcement

Principles of health and safety management. Loss causation and incident investigation. Identifying hazards. Assessing and evaluating risk. Risk control and emergency planning. Organizational factors. Human factors. Principles of health and safety law. Criminal law. Civil law. Measuring health and safety performance. General aspects of occupational health and hygiene. Principles of toxicology and epidemiology. Evaluating risk from chemical agents. Preventive and protective measures concerning hazardous substances.



CT515 Mining, Mineral Processing and Cement

Mine-Wide Optimization: Extraction ,Transportation and Conveyance, -Crushing and grinding, -Different quarries with simple geological basis knowledge and quarry managements

CT516 Principles of Environmental Risk Management

Concepts and principles underpinning Environmental Risk Assessment and Management, including aspects such as Hazard, Harm, Risk, Pollution, etc., in the context of the principles of Sustainability.-Understanding what ‘a risk-averse and cautious approach’ entails-Tools and Guidelines for Risk Assessment-Multi-Criteria Decision Making and Risk Management Planning-Practical Case Study – Risk Assessment for Mine Closure-Risk assessment provides a systematic procedure for predicting potential risks to human health or the environment.

CT517 Energy Conservation Management

Energy consumption is at an all-time high, and it is uncertain how high energy costs will go. This module will teach graduates energy conservation efforts and innovative programs to help people, including businesses, get in the habit of using energy more efficiently, thereby saving money, energy and the environment.

CT518 Monitoring and Operation of Wastewater Treatment

Wastewater treatment techniques, monitoring and operation of wastewater treatment systems, and the code of practice relevant to sewerage and sewage treatment. The design of sewer collection systems will also be covered in detail. Emerging technologies in water reclamation and water recycling will be emphasized in this module.



