

Template for Evidence(s) UI GreenMetric Questionnaire

University : Alexandria University
 Country : Egypt
 Web Address : <https://alexu.edu.eg/index.php/en/>

[3] Waste (WS)

[3.5] Organic Waste Treatment



Program for separation of Paper (blue), Plastic (yellow), aluminum cans and glass (green) and organic waste (red) in Campus (Alexandria University, Egypt)



Leaves and organic waste were treated for the vermi-compost to produce organic fertilizers to use in the Campus gardens (Alexandria University).



The Faculty of Agriculture recycles 100% of its organic waste (Alexandria University).



Waste reception hall in Nahdet Misr company for waste collection in Alexandria



Manual sorting hall in Nahdet Misr company for waste collection in Alexandria



Organic matter separation unit in Nahdet Misr company for wastes collection in Alexandria



Biomass Conversion and Biorefinery
<https://doi.org/10.1007/s11399-024-05327-5>

ORIGINAL ARTICLE

Nitrogen and sulfur-doped biochar supported magnetic CuZnFe₂O₄ as a sustainable adsorbent for efficient reactive black dye 5 removal from industrial wastewater

Ahmed M. Abdelfatah^{1,2} · Manal Favzy^{3,4} · Mohamed E. El-Khouly⁴ · Abdelazem S. Eltawil⁵

Received: 23 November 2023 / Revised: 25 December 2023 / Accepted: 12 January 2024
 © The Author(s) 2024

✉ Ahmed M. Abdelfatah
 ahmedmohammedsci@gmail.com

- 1 Environmental Sciences Department, Faculty of Science, Alexandria University, Alexandria 21511, Egypt
- 2 Green Technology Group, Faculty of Science, Alexandria University, Alexandria 21511, Egypt
- 3 National Biotechnology Network of Expertise (NBNE), Academy of Scientific Research and Technology (ASRT), Cairo, Egypt
- 4 Institute of Basic and Applied Sciences Egypt-Japan University of Science and Technology, New Borg El-Arab, Alexandria 2193, Egypt
- 5 Department of Chemistry, Faculty of Science, Alexandria University, Alexandria, Egypt

A training course titled "Current Methods and Future Trends in Water Treatment" was conducted at the Faculty of Science, Alexandria University, on September 4, 2024, as part of the USAID/STDF project No. 45888. This project focuses on sustainable agriculture and water treatment in Egypt, specifically targeting the recycling of organic dyes, heavy metals, and antibiotics, as well as the reuse of these materials in the Green Technologies Lab at Alexandria University.



الجمعية العربية لعلوم المواد
 بالاشتراك مع قسم علوم المواد بمعهد الدراسات العليا والبحوث - جامعة الإسكندرية
المؤتمر الثالث والعشرون لعلوم المواد
"علوم المواد وريادة الأعمال: خارطة طريق من أجل تنمية مستدامة"
 (١٤ - ١٦ أكتوبر ٢٠٢٣)
 الإسكندرية - مصر



The Arab Society of Materials Science (ASMS)
 in collaboration with the Materials Science Department
 Institute of Graduate Studies and Research (IGSR), Alexandria University
The 23rd Conference on Materials Science
"Materials Science and Entrepreneurship: A Roadmap for Sustainable Development"
 (14-16 October 2023)
 Alexandria - Egypt.

للإشتراك والاستفسار 01009698144
 ١٦٣ طريق الحرية الشاطيبي معهد الدراسات العليا والبحوث




CHITOSAN EGYPT: REDEFINING WASTE2RESOURCE INNOVATION
 · KHALID WAEL | CHIEF TECHNICAL OFFICER CHITOSAN EGYPT

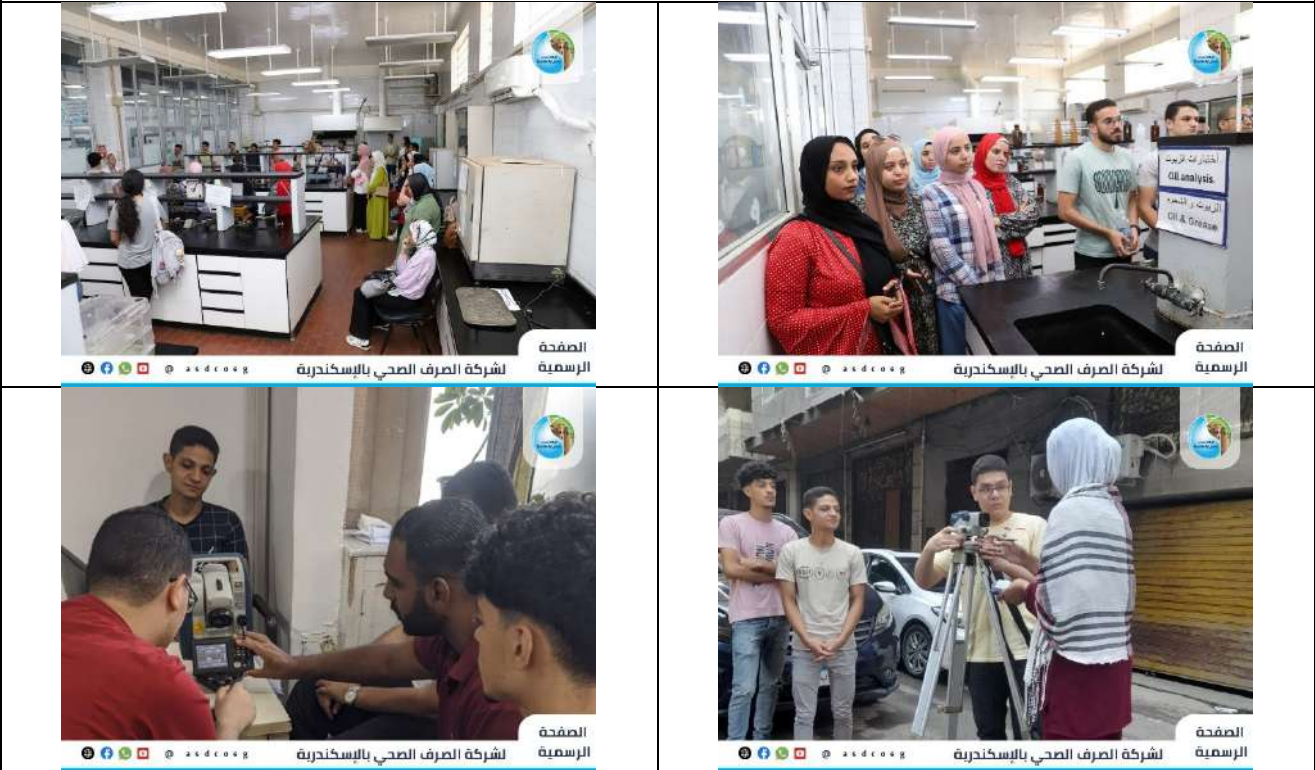
THE 23RD ARAB INTERNATIONAL CONFERENCE ON MATERIALS SCIENCE & ENTREPRENEURSHIP:
 A ROADMAP FOR SUSTAINABLE DEVELOPMENT | ASMS | 14-16 OCTOBER 2023

A workshop titled "Chitosan Egypt: Redefining Waste2resource Innovation" was delivered as part of The 23rd Conference on Materials Science Materials Science and Entrepreneurship: A road for sustainable development", held by the Institute of Graduate Studies and Research, Alexandria University (14-16 October 2023).

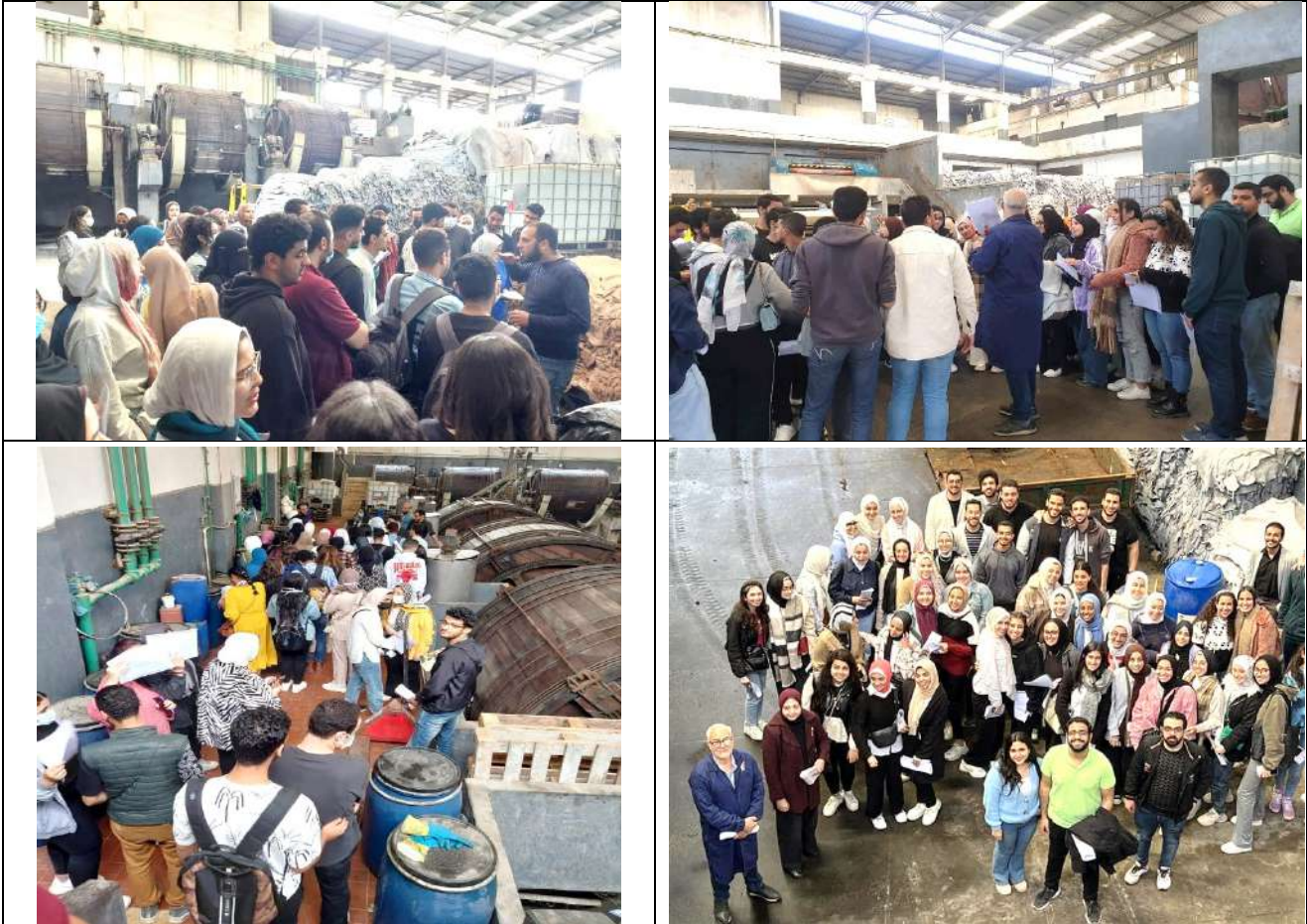


The screenshot shows the article page on Taylor & Francis Online. The article title is "Investigation of using municipal solid waste incineration fly ash as alternative aggregates replacement in hot mix asphalt". The authors listed are Rouba A. Joumblat, Zaher Al Basiouni Al Masri, Joseph Absi, and Adel ElKordi. A red box highlights Adel ElKordi's affiliation: "Engineering, Department of Civil Engineering, Alexandria University, Alexandria, Egypt". The page also shows the journal name "Road Materials and Pavement Design", volume 24, issue 5, and a search bar.

Researchers at Alexandria University are investigating the use of municipal solid waste incineration fly ash as an alternative aggregate replacement in hot mix asphalt as part of efforts to recycle waste materials and develop more sustainable construction practices



Raising awareness among Alexandria University students about wastewater treatment was achieved through summer training activities conducted at Alexandria Sewerage for students from various faculties, including Science, Engineering (Civil, Mechanical, and Mechatronics), Commerce, Arts (Surveying, Mapping, and GIS), and Fine Arts (Architecture), September 2024.



The Industrial Microbiology and Applied Chemistry (IMAC) Program organized a scientific visit to El-Shafei Leather Tannery in the Al-Max area of Alexandria on March 26 and April 30, 2024. As part of the "Bioremediation of Pollutants" course, students toured the facility and learned about the various stages of natural leather production, and managing waste from the leather industry. (Faculty Science of Alexandria University).

Description:

Alexandria University Program for Treatment of Organic Waste

- Managing organic waste involves a range of activities aimed at reducing its negative environmental impact while extracting its potential value to turn organic waste into nutrient-rich soil. The process involves piling up organic waste and allowing it to decompose under controlled conditions. The preparation process takes place in 45 to 60 days through stirring, purification, evaporation and filtration to obtain 58 tons (25%) organic fertilizer.
- Separation of Paper in blue containers, Plastic in yellow containers, aluminum cans and glass in green containers and organic waste in red containers in Campus (Alexandria University, Egypt).
- The separated organic waste is mainly food waste, manure, green waste arises from landscaping consists of leaves green plants garden trimmings and others, biodegradable plastic and non hazardous wood waste.
- The Faculty of Agriculture recycles 100% of its organic waste through the following procedure:
 - Utilization of the treated agricultural byproducts in farm animals feeding.



- Utilization of the treated agricultural byproducts for the vermi-compost to produce organic fertilizers.
 - Utilization of the treated agricultural byproducts through a special insect (black soldier) to produce organic fertilizers and protein sources.
 - Mass production of active Biochar from agricultural waste to remove any water impurities or pesticides residues.
- The organic waste in Alexandria University is handled according to the contract with Nahdet Misr company. All organic waste is collected in organic waste containers. Then the company collects these waste bags and deliver it to a waste treatment facility for processing.
 - In addition, the University students at the Faculty of Science initiated a student project for organic waste recycling. Leaves and organic waste were treated for the vermi-compost to produce organic fertilizers to use in the Campus gardens (Alexandria University).
 - Approximately in year 2024, **235 tons of waste per year** were collected at the level of university buildings with Nahdet Misr company and separated into organic waste and inorganic waste. **Organic waste constitutes about 55% of the total waste** collected from the campus where 100% were recycled to produce organic compost.
 - The types of fertilizers are produced after treatment of the organic waste by Nahdet Misr company:
 - 14 mm fine organic fertilizers for vegetables.
 - 25 mm organic fertilizers are used as tree fertilizer.
 - 40 mm organic fertilizers are used as fertilizer for new cultivated areas.
 - All previous types are suitable for desert lands.
 - A training course titled "Current Methods and Future Trends in Water Treatment" was held at the Faculty of Science, Alexandria University, as part of the activities of the USAID/STDF Egyptian-American project No. 45888, titled: "Sustainable Agriculture and Water Reuse in Egypt: Innovative Water Treatment Methods and Soil Health." On September 4, 2024, the project's research team delivered lectures on the latest environmentally friendly nanomaterials and their applications in water treatment, specifically targeting toxic organic dyes, heavy metals, and antibiotics. Additionally, the team discussed the use of locally available waste materials, following recycling, in the tertiary treatment of wastewater. These materials, prepared in the Green Technologies Lab at the Faculty, have been published in prestigious international scientific journals, including a research article titled "Nitrogen and sulfur-doped biochar supported magnetic $\text{CuZnFe}_2\text{O}_4$ as a sustainable adsorbent for efficient reactive black dye 5 removal from industrial wastewater."
 - The EFFCT team from Alexandria University won second place in the prestigious Hult Prize International Competition held in Paris, France. competing against over 10,000 teams from 110 countries. The team developed a startup focused on recycling textile industry waste. They previously won first place in the "Egypt Summit for Social Investment Projects" and received support and training from the Innovators and Talents Fund. Minister of Higher Education Dr. Ayman Ashour praised the team's achievement, highlighting the importance of student participation in international competitions. The president of Alexandria University, Dr. Abdelaziz Konsowa, emphasized the university's commitment to fostering innovation and creativity among students (November 2023).
<https://www.facebook.com/MOHESREGYPT/posts/pfbid02ffpJTJ7jCP6DpGtM6HnA5v5QXwVgj4S97BK5sRWGE47USahrLciBRsR5NfjbM75nl>
 - A workshop titled "Chitosan Egypt: Redefining Waste2resource Innovation" was delivered as part of The 23rd Conference on Materials Science Materials Science and Entrepreneurship: A road for sustainable development", held by the Institute of Graduate Studies and Research, Alexandria University (14-16 October 2023).



- Researchers at Alexandria University are focused on turning waste into a useful material in road construction, contributing to more environmentally friendly infrastructure. They investigating the use of municipal solid waste incineration fly ash as an alternative aggregate replacement in hot mix asphalt as part of efforts to recycle waste materials and develop more sustainable construction practices.
- Raising awareness among Alexandria University students from various faculties—including Science, Engineering (Civil, Mechanical, and Mechatronics), Commerce, Arts (Surveying, mapping, and GIS), and Fine Arts (Architecture)—about wastewater treatment was achieved through summer training and periodic visits to the laboratories of the Alexandria Sewerage Company. This effort supports the achievement of the Sustainable Development Goals by enhancing partnerships for sustainable development and fostering collaborations that mobilize and share knowledge, expertise, and technology. The training aimed to provide students with essential scientific skills and practical experience to prepare them for the job market (September 2024).
 - **Faculty of Science:** Theoretical training introduced the role of the Sewerage Company, while practical training involved visits to treatment plants, central laboratories, and lectures on occupational safety and industrial sewage.
 - **Faculty of Arts (Surveying, mapping, and GIS):** Training included surveying applications, urban planning, and the practical use of leveling instruments, total stations, and GPS devices, concluding with lessons on ArcGIS and sewage system design.
 - **Engineering Colleges:** Civil Engineering students trained in network renewal and design, while Mechanical and Mechatronics students learned about pump components, welding, and electrical generators, with visits to various workshops.
 - **Fine Arts (Architecture):** Students received training on project design drawings and estimating costs.

https://www.facebook.com/profile/100068944998517/search?q=%D8%A7%D9%84%D8%B9%D9%84%D9%88%D9%85&locale=ar_AR

- The Industrial Microbiology and Applied Chemistry Program (IMAC) at Faculty Science of Alexandria University organized a scientific visit to El-Shafei Leather Tannery in the Al-Max area of Alexandria on March 26 and April 30, 2024. This visit was part of the program's applied teaching and learning methods and was included in the practical component of the 'Bioremediation of Pollutants' course (Code: Micb 472). During the visit, the students toured all departments of the company and received a comprehensive scientific explanation of the stages of natural leather production, as well as how to protect the leather from mold during manufacturing and how to manage leather industry waste.
- Students from the Faculty of Science at Alexandria University have innovated a way to recycle used cooking oil to create an eco-friendly plasticizer, and how can we reuse cooking oil in plastic production.

<https://www.youtube.com/watch?v=LIB1QJ04fqs>

Additional evidence link:

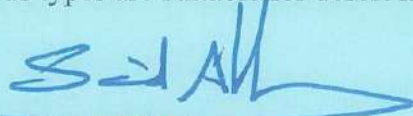
<https://www.alexu.edu.eg/index.php/en/community-development-and-environmental-affairs/6435-alexandria-university-initiative-to-separate-and-recycle-waste>

VICE PRESIDENT
Community Service & Environment Development

Alexandria University program for disposal of organic waste

1. Organic waste management includes a set of activities aimed at reducing its negative impact on the environment while extracting its potential value for converting organic waste into nutrient-rich soil. The process involves piling organic waste and allowing it to decompose under controlled conditions. The preparation process takes place within 45 to 60 days through stirring, purification, fumigation and filtration to obtain 58 tons (25%) of organic fertilizer.
2. Separation of Paper in blue containers, Plastic in yellow containers, aluminum cans and glass in green containers and organic waste in red containers in Campus (Alexandria University, Egypt).
3. The separated organic waste is mainly food waste, manure, green waste arises from landscaping consists of leaves green plants garden trimmings and others, biodegradable plastic and non hazardous wood waste.
4. The Faculty of Agriculture recycles 100% of its organic waste.
 - Utilizing treated agricultural waste to feed farm animals.
 - Utilizing agricultural waste treated with vermi-compost in the production of organic fertilizers.
 - Utilizing agricultural waste treated with a special insect (the black soldier) to produce organic fertilizers and protein sources.
 - Producing large quantities of active biochar from agricultural waste to remove any water impurities or pesticide residues.
5. The organic waste in Alexandria University is handled according to the contract with Nahdet Misr company. All organic waste is collected in organic waste containers. Then the company collects these waste bags and deliver it to a waste treatment facility for processing.
6. In addition, the University students at the Faculty of Science initiated a student project for organic waste recycling. Leaves and organic waste were treated for the vermi-compost to produce organic fertilizers to use in the Campus gardens (Alexandria University).
7. Approximately in year 2024, **235 tons of waste per year** were collected at the level of university buildings with Nahdet Misr company and separated into organic waste and inorganic waste. **Organic waste constitutes about 55% of the total waste** collected from the campus where 100% were recycled to produce organic compost.
8. Types of fertilizers produced after treating organic waste at Nahdet Misr Company:
 - 14 mm fine organic fertilizer for vegetables.
 - 25 mm organic fertilizer is used as tree fertilizer.
 - 40 mm organic fertilizer is used as fertilizer for new planted areas.
 - All previous types are suitable for desert lands.

Sincerely,



Prof. Said Mohamed Allam
Vice PRESIDENT
Community Service & Environment Development
Alexandria University