Curriculum Vitae

Mohamed Elsayed Ahmed Gabr, Ph.D

Mohamed Gabr is an Associate Professor (Water Resource management and Environmental hydrology), Head of Civil Engineering Department, Higher Institute for Engineering and Technology, New Damietta, Ministry of Higher Education, Egypt. He completed his BSc in Civil Engineering in 1991; Port Said University, Egypt, MSc Civil Engineering in 1997; Port Said University, Port Foud, Port Said, Egypt. Higher Diploma 2000, Shared Water Resources, Faculty of Engineering, Cairo University. PhD in Civil Engineering (Water Resources and hydraulics) in 2003; Port Said University, Port Foud, Port Said, Egypt. His research interests are focused in the field of Irrigation and drainage, Wetlands, Environmental hydrology, Water resources management, Climate changes, Wastewater treatment, Water and contaminants transport in the vadose/groundwater systems, groundwater hydrology, and management of salt-affected soils.

Work

- Head of Civil Engineering Department, Higher Institute for Engineering and Technology, New Damietta, Ministry of Higher Education, Egypt
- P.O. Box 34517, Central District, Fourth District, New Damietta, Damietta.
- Phone (+2) 0572413236 (office), (+2) 01224365961 (Mobile)
- Fax (+2) 0572413235
- Email: mohamed.gabr@ndeti.edu.eg

Education

- BSc Civil Engineering 1991; Port Said University, Egypt.
- MSc Civil Engineering 1997; Port Said University, Port Foud, Port Said, Egypt.
- Higher Diploma 2000, Shared Water Resources, Faculty of Engineering, Cairo University

- PhD Civil Engineering (Water Resources and hydraulics) 2003; Port Said University, Port Foud, Port Said, Egypt.

Scientific Experience

- Specialization: Irrigation and drainage, Wetlands, Environmental hydrology, Water resources management, Climate changes, Wastewater treatment, Water and contaminants transport in the vadose/groundwater systems, groundwater hydrology, and management of salt-affected soils
- Modeling expertise: MODFLOW, EPANET, WaterCAD, CropWat 8, SAP2000, AutoCAD.
- MS Thesis: The Ideal Design for Lining and Protection of EL-Salam Canal (Supervisor: Prof. M.I. Balah)
- PhD Thesis: Generation and Transport of Sediments by Severe Flow Conditions (Supervisor: Prof. M.I. Balah)

Major Field of Research

1. Climate change impacts on water resources
2. Water, Food, and Energy Nexus
3. Water quality
4. Hydrology
5. Harbor Engineering and coastal Engineering.
6. Constructed Wetlands
7. Irrigation and Drainage.
8. Crop water requirements and irrigation systems
9. Groundwater modelling
10. Rain water harvesting.
11. Open channel Hydraulics
12. Water Resources management.
13. Environmental Engineering.
14. Wastewater treatment
15. Computer application in civil engineering.
16. Environmental pollution control

List of Publications

1. Alotaibi, M., Alhajeri, N.S., Al-Fadhli, Al Jabri, S.A., **Gabr M.E.** Impact of Climate Change on Crop Irrigation Requirements in Arid Regions. Water Resour Manage 37, 1965–1984 (2023). https://doi.org/10.1007/s11269-023-03465-5
2. **Gabr, M.E**.; Fattouh, E.M.; Mostafa, M.K. Determination of the Canal Discharge Capacity Ratio and Roughness to Assess Its Maintenance Status: Application in Egypt. Water 2023, 15, 2387. https://doi.org/10.3390/w15132387
3. **Gabr, M.E.,** Awad, A. & Farres, H.N. Irrigation Water Management in a Water-Scarce Environment in the Context of Climate Change. Water Air Soil Pollut 235, 127 (2024). https://doi.org/10.1007/s11270-024-06934-8
4. **Gabr, M.E.** Impact of climatic changes on future irrigation water requirement in the Middle East and North Africa's region: a case study of upper Egypt. Appl Water Sci 13, 158 (2023). https://doi.org/10.1007/s13201-023-01961-y
5. **Gabr, M.E.**, Soussa, H. Assessing surface water uses by water quality index: application of Qalyubia Governorate, Southeast Nile Delta, Egypt. Appl Water Sci 13, 181 (2023). https://doi.org/10.1007/s13201-023-01994-3
6. **Gabr, M.E.,** El-Ghandour, H.A. & Elabd, S.M. Prospective of the utilization of rainfall in coastal regions in the context of climatic changes: case study of Egypt. Appl Water Sci 13, 19 (2023). https://doi.org/10.1007/s13201-022-01835-9
7. **Gabr ME** (2023) Land reclamation projects in the Egyptian Western Desert: management of 1.5 million acres of groundwater irrigation, Water International, 48:2, 240-258, DOI: 10.1080/02508060.2023.2185745
8. **Gabr M.E.** (2022) Design methodology for sewage water treatment system comprised of Imhoff ‘s tank and a subsurface horizontal flow constructed wetland: a case study Dakhla Oasis, Egypt, Journal of Environmental Science and Health, Part A, 57:1, 52-64, DOI: 10.1080/10934529.2022.2026735
9. **Gabr, M.E.**; El Shorbagy, A.M.; Faheem, H.B. Assessment of Stormwater Quality in the Context of Traffic Congestion: A Case Study in Egypt. Sustainability 2023, 15, 13927. https://doi.org/10.3390/su151813927

10. **Gabr, M.E.;** Al-Ansari, N.; Salem, A.; Awad, A. Proposing a Wetland-Based Economic Approach for Wastewater Treatment in Arid Regions as an Alternative Irrigation Water Source. Hydrology 2023, 10, 20. https://doi.org/10.3390/hydrology10010020
11. **Gabr, M.E**.; El-Rawy, M.; Al-Arifi, N.; Zijl, W.; Abdalla, F. A Subsurface Horizontal Constructed Wetland Design Approach for Wastewater Treatment: Application in Ar Riyadh, Saudi Arabia. Sustainability 2023, 15, 15927. https://doi.org/10.3390/su152215927
12. **Gabr, M.E**.; El Shorbagy, A.M.; Faheem, H.B. Assessment of Stormwater Quality in the Context of Traffic Congestion: A Case Study in Egypt. Sustainability 2023, 15, 13927. https://doi.org/10.3390/su151813927
13. **Gabr, M.E**., Fattouh, E. & Eltarabily, M.G. (2023) Design of subsurface drainage network with minimum overall cost using Lagrange multiplier optimization. Irrigation and Drainage, 1–14. Available from: https://doi.org/10.1002/ird.2886
14. **Gabr, M.E.**; Salem, M.; Mahanna, H.; Mossad, M. Floating Wetlands for Sustainable Drainage Wastewater Treatment. Sustainability 2022, 14, 6101. https://doi.org/10.3390/su14106101
15. El-Rawy, M.; Fathi, H.; Zijl, W.; Alshehri, F.; Almadani, S.; Zaidi, F.K.; Aldawsri, M.; **Gabr, M.E.** Potential Effects of Climate Change on Agricultural Water Resources in Riyadh Region, Saudi Arabia. Sustainability 2023, 15, 9513. https://doi.org/10.3390/su15129513
16. **Gabr, M.E**.; El Shorbagy, A.M.; Faheem, H.B. Utilizing the Harvesting of Rainwater to Provide Safe Road Transportation Efficiency and Increase Water Resources in the Context of Climatic Change. Sustainability 2022, 14, 9656. https://doi.org/10.3390/su14159656
17. Gabr, M., El-Ghandour, H., Elabd, S. (2022). 'Rainwater Harvesting from Urban Coastal Cities Using Recharging Wells: A Case Study of Egypt', Port-Said Engineering Research Journal, 26(3), pp. 17-36. doi: 10.21608/pserj.2022.103188.1151.
18. El-Rawy, M.; Batelaan, O.; Al-Arifi, N.; Alotaibi, A.; Abdalla, F.; **Gabr, M.E.** Climate Change Impacts on Water Resources in Arid and Semi-Arid Regions: A Case Study in Saudi Arabia. Water 2023, 15, 606. https://doi.org/10.3390/w15030606
19. **Gabr, M.,** Alhajeri, N., Al-Fadhli, F., & Al Jabri, S. (2024). Aquaponics system for sustainable water, energy, and food nexus: A review. Port-Said Engineering Research Journal, in press, doi: 10.21608/pserj.2024.252618.1291

20. Gamal, G.; Abdeldayem, O.M.; Elattar, H.; Hendy, S.; **Gabr, M.E.**; Mostafa, M.K. Remote Sensing Surveillance of NO_2, SO_2, CO, and AOD along the Suez Canal Pre- and Post-COVID-19 Lockdown Periods and during the Blockage. Sustainability 2023, 15, 9362. https://doi.org/10.3390/su15129362
21. Abduljaleel, Y.; Awad, A.; Al-Ansari, N.; Salem, A.; Negm, A.; **Gabr, M.E**. Assessment of Subsurface Drainage Strategies Using DRAINMOD Model for Sustainable Agriculture: A Review. Sustainability 2023, 15, 1355. https://doi.org/10.3390/su15021355
22. **Gabr M.E**. (2021) Proposing a constructed wetland within the branch drains network to treat degraded drainage water in Tina Plain, North Sinai, Egypt, Archives of Agronomy and Soil Science, 67:11, 1479-1494, DOI: 10.1080/03650340.2020.1799353
23. Salem M., **Gabr M.E.,** Mossad M., Mahanna H. Random Forest modelling and evaluation of the performance of a full-scale subsurface constructed wetland plant in Egypt, Ain Shams Engineering Journal, Volume 13, Issue 6, 2022, 101778.
24. **Gabr, M.E**. Management of irrigation requirements using FAO-CROPWAT 8.0 model: A case study of Egypt. Model. Earth Syst. Environ. 8, 3127–3142 (2022). https://doi.org/10.1007/s40808-021-01268-4
25. Awad, A.; Luo, W.; Al-Ansari, N.; Elbeltagi, A.; El-Rawy, M.; Farres, H.N.; **Gabr, M.E.** Farmers' Awareness in the Context of Climate Change: An Underutilized Way for Ensuring Sustainable Farmland Adaptation and Surface Water Quality. Sustainability 2021, 13, 11802. https://doi.org/10.3390/su132111802
26. **Gabr M.E.** (2022) Modelling net irrigation water requirements using FAO-CROPWAT 8.0 and CLIMWAT 2.0: a case study of Tina Plain and East South ElKantara regions, North Sinai, Egypt, Archives of Agronomy and Soil Science, 68:10, 1322-1337, DOI: 10.1080/03650340.2021.1892650
27. **Gabr M.E**., Ehab Mostafa Fattouh, Assessment of irrigation management practices using FAO-CROPWAT 8, case studies: Tina Plain and East South El-Kantara, Sinai, Egypt, Ain Shams Engineering Journal, Volume 12, Issue 2, 2021, Pages 1623-1636.
28. **Gabr, M.** (2020). A Roadmap for Establishment of an Early Warning System for Nile Water Quality in Egypt. Port-Said Engineering Research Journal, 24(2), 40-51. doi: 10.21608/pserj.2020.18756.1014

29. **Gabr M.E.,** Hoda Soussa, Ehab Fattouh, Groundwater quality evaluation for drinking and irrigation uses in Dayrout city Upper Egypt, Ain Shams Engineering Journal, Volume 12, Issue 1, 2021, Pages 327-340.
30. El-Ghandour H. A., Elbeltagi E., **Gabr M.E**. Design of irrigation canals with minimum overall cost using particle swarm optimization – case study: El-Sheikh Gaber canal, north Sinai Peninsula, Egypt. Journal of Hydroinformatics 1 September 2020; 22 (5): 1258–1269. doi: https://doi.org/10.2166/hydro.2020.199
31. **Gabr, M.** (2020). Design Methodology of a New Surface Flow Constructed Wetland System, Case Study: East South EL-Kantara Region North Sinai, Egypt. Port-Said Engineering Research Journal, 24(1), 23-34. doi: 10.21608/pserj.2020.19040.1016
32. **Gabr, M**. (2020). Study of Reclaimed Water Reuse Standards and Prospects in Irrigation in Egypt. Port-Said Engineering Research Journal, 24(1), 65-75. doi: 10.21608/pserj.2019.16840.1008
33. **Gabr, M. (2019)** Drainage Management Problems Evaluation: Case Study Baloza and EL-Farama Drains, North Sinai, Egypt. Journal of Water Resource and Protection, 11, 675-689. doi: 10.4236/jwarp.2019.116039.
34. **Gabr, M. (2019)** Drainage Management Problems Evaluation: Case Study Baloza and EL-Farama Drains, North Sinai, Egypt. Journal of Water Resource and Protection, 11, 675-689. doi: 10.4236/jwarp.2019.116039.
35. **Gabr M (2018)** Evaluation of Irrigation Water, Drainage Water, Soil Salinity, and Groundwater for Sustainable Cultivation. Irrigat DrainageSys Eng 7: 224. doi: 10.4172/2168-9768.1000224
36. **Gabr M.E.**, El-Zahar M., "Study of the Quality of Irrigation Water in South-East El-Kantara Canal, North Sinai, Egypt," International Journal of Environmental Science and Development vol. 9, no. 6, pp. 142-146, 2018.

II. Referred Conference Proceedings

1. **Gabr M.E.** "Environmentally Friendly Wastewater Treatment in Egypt: Opportunities and Challenges". Journal of Engineering Research, 7, 5, 2023, 100-107. doi: 10.21608/erjeng.2023.236988.1246

2. **Gabr, M.,** Rageh, O. Strategic planning model for the construction and remediation of irrigation networks: A case study for Egypt. Delta University Scientific Journal, 2023; 6(1): 85-102. doi: 10.21608/dusj.2023.291016
3. **Gabr M.E.** (2018) Magnitude and Characteristics of Sand Dunes Encroachment towards El-Sheikh Gaber Channel, North Sinai, Egypt. 21st International Water Technology Conference, Ismailia, 28-30 June 2018, 43-47.
4. **Gabr M.E.** "Wastewater Reuse Standards for Agriculture Irrigation in Egypt", 21 st International Water Technology Conference, Ismailia, 28-30 June 2018, 234-246.

Co-Supervised PhD Students

1- Amira Mahmoud El Shorbagy " Utilizing the Harvesting of Rainwater to Provide Safe Road Transportation Efficiency and Increase Water Resources in the Context of Climatic Change", Civil Engineering Department, Faculty of Engineering, Minia University, Minia, 61519, Egypt
Status: ongoing.

Co-Supervised M. Sc. Students

1- Madlen Mohamed Salam "Treatment of Drainage wastewater using Floating wetland", Public Works Engineering Department, Faculty of Engineering, Mansoura University, Egypt.
Status: Awarded 2022.

2- Maha Yousef Alotaibi "Food security and sustainable management of water-energy-food nexus in Kuwait." College of Graduate Studies, Environmental Sciences, Kuwait.
Status: Awarded 2022.

3- Ahmed Ali El Sayed Ahmed "Groundwater quality assessment for different uses in Wadi El Natrun city using GIS and water quality index" Irrigation and Hydraulics Department, Faculty of Engineering, Postgraduate Studies, Ain Sham University.
Status: ongoing.

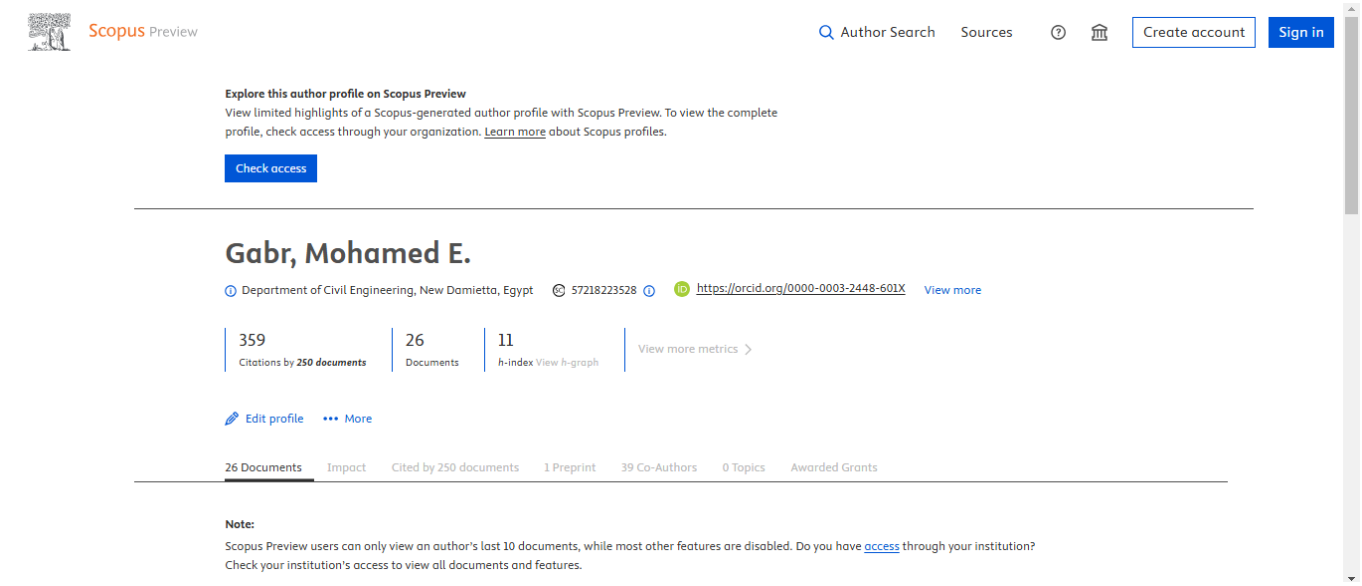
Research Projects

Sustainable Agriculture Using Solar Desalination: A Pathway to Food Security in the State of Kuwait
Code CN18-35EM-05
Total Budget 33,000KD

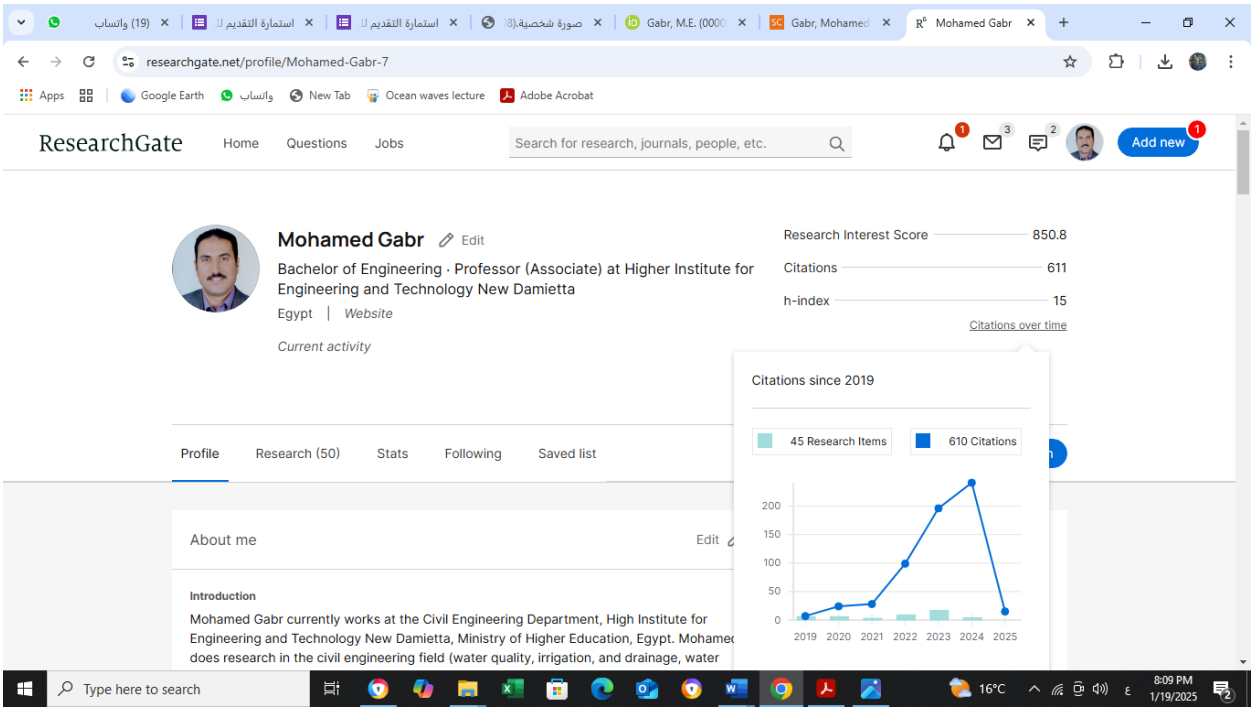
Starting Date 2021/02/01

End Date 31/01/2024

Scopus id: 57218223528



Rsearch gate: https://www.researchgate.net/profile/Mohamed-Gabr-7



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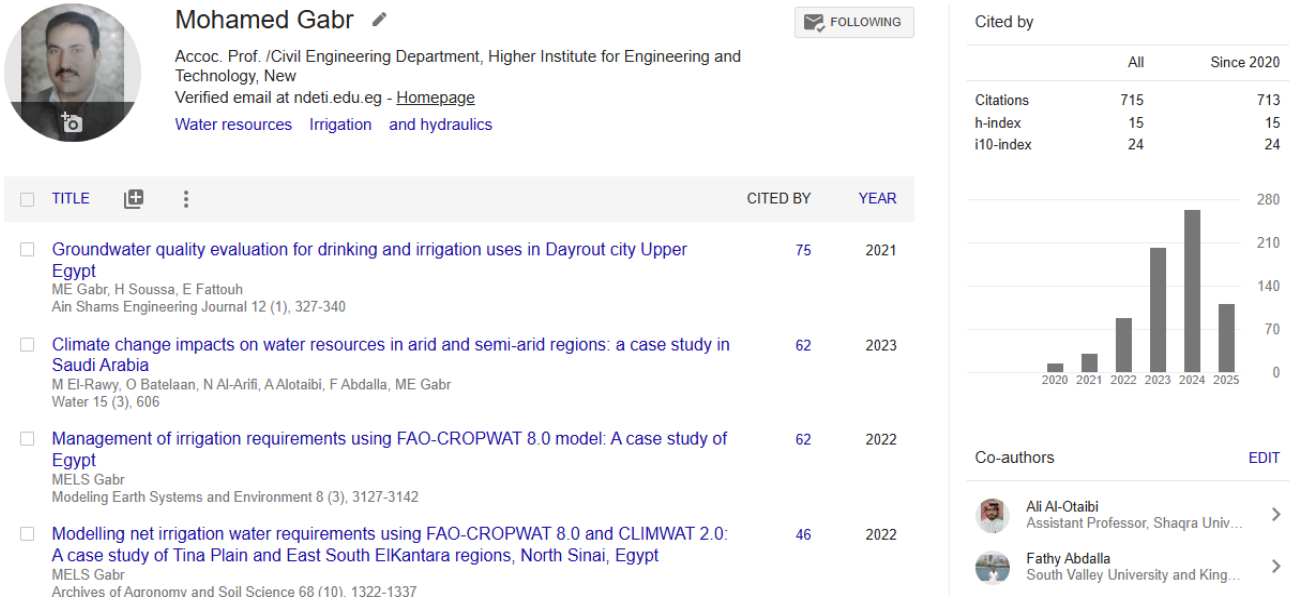

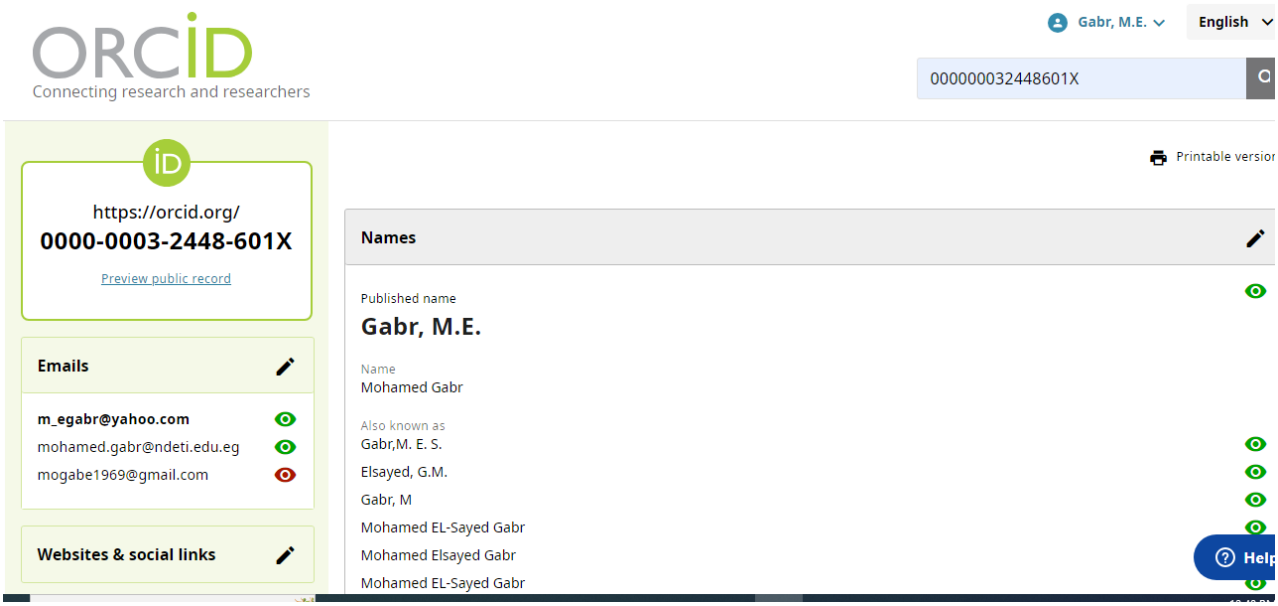
ORCID
Connecting research and researchers
Gabr, M.E.
English
000000032448601X
Printable versior
https://orcid.org/
0000-0003-2448-601X
Preview public record
Emails
m_egabr@yahoo.com
mohamed.gabr@ndeti.edu.eg
mogabe1969@gmail.com
Websites & social links
Names
Published name
Gabr, M.E.
Name
Mohamed Gabr
Also known as
Gabr,M. E. S.
Elsayed, G.M.
Gabr, M
Mohamed EL-Sayed Gabr
Mohamed Elsayed Gabr
Mohamed EL-Sayed Gabr
Help