

CURRICULUM VITAE



Name Ahmed Askora
Affiliation Microbiology Department
Faculty of Science,
Zagazig University, Zagazig 44519 Egypt
Telephone +20113348391
Fax +20 552308213
E-mail ahmedaskora@zu.edu.eg
ahmedaskora@gmail.com
ahmedaskora@yahoo.com
Date of birth 30 September 1979
Nationality Egyptian

Education/Qualifications and Work Experience

- 2002 – 2005** Master student in Microbiology,
Monitor in Microbiology
Faculty of Science, Zagazig University, Egypt.
- 2005-2006** Assistant lecturer at Faculty of Science, Zagazig University,
Egypt.
- 2007 -2011** **Doctor of Philosophy (PhD) in Molecular and Genetics
Biotechnology, Graduate School of Advanced Sciences
of Matter, Hiroshima University, Japan.**
- 2011 - 2015** Scholarship from Egyptian Ministry of Higher Education
Lecturer in Biotechnology and Molecular Biology at
Zagazig University.
- 2016 – 2021** Associate Professor in Molecular Biotechnology at
Zagazig University
- 2017 – 2021** Deputy Director, Zagazig University project management
unit (UPMU)- till present
- 2021 –present** Professor in **Virology** and **Molecular Biotechnology** at
Zagazig University
- 2021 - Present** Executive Manager of project management unit,
Innovation, Entrepreneurship and international ranking
center, Zagazig University - till present

2023 - Present Supervisor of the regional Research center, Sharqia Branch, Academy of Scientific Research - till present

Post-Doctoral experience

- **Visiting scientist** at the Institute for Integrative Biology of the Cell (I2BC, UMR9198), Department of Microbiology, Group “Energetic Metabolism of *Streptomyces*”, **University Paris Sud, 91405Orsay, France.**

Grants from the Egyptian Ministry of Higher Education, from the “Institut de Recherche pour le Development” (IRD) and from the “Science and Technology Development Fund” (STDF).

The Project in a few words

Title: Elucidation of the link between storage lipids and antibiotic production in *Streptomyces*.

The aim of this project was to discover most needed novel antibiotics using novel strategies to enhance the expression of the numerous cryptic biosynthetic pathways in the *Streptomyces* genome.

- **Grant of Japan society for the Promotion of Science (JSPS).** Visiting scientist at Graduate School of Advanced Sciences of Matter, Department of Molecular Biotechnology, Group “biomolecular technology”, Hiroshima University, 1-3-1 Kagamiyama, Higashi-Hiroshima739-8530, Japan.
- **The Project in a few words**

Title: Dynamic interaction between filamentous phage ϕ RSM and *Ralstonia solanacearum*, resulting in loss of virulence and possible application as vaccine to bacterial wilt.

The project was aimed at (1) Establishing molecular basis of loss of virulence in *R. solanacearum* caused by infection with filamentous phage ϕ RSM. (2) Establishing molecular mechanism of ϕ RSM1 integration into the host genome mediated by phage-encoded novel serine recombinase and (3) Application of phage-infected cells as vaccine against plant diseases.

Teaching Experience

Teaching courses for under and post graduate students in Faculty of Science of Zagazig University (Egypt): Microbiology, Molecular Biology, Microbial Biotechnology, Virology and Immunology, Actinomycetes, Soil Microbiology, Medical Microbiology, Biochemistry, Bioinformatics and Proteomics.

- **Supervisor of 40 Master Students and 18 Ph.D. students.**

Peer Reviewer for Academic Journals

Scientific Reports, Frontiers in Microbiology, Current Microbiology, Gene Journal, Archives of virology, Journal de Mycologie Médical, Journal of Bacteriology and Mycology, Current of microbiology, Archives of

Microbiology

Editorial Board Member for the following journals

- 1) <http://austinpublishinggroup.com/biotechnology-bioengineering/editorialboard.php>
- 2) <http://austinpublishinggroup.com/computational-biology-bioinformatics/editorialBoard.php>
- 3) <http://www.austinpublishinggroup.com/virology/editorialBoard.php>
- 4) <http://loop.frontiersin.org/people/148342/overview>
- 5) <http://austinpublishinggroup.org/genetics-genomic-research/editorialBoard.php>

Scientific and Educational Committees

- 1) The Society of Biotechnology, Japan.
- 2) The Canadian Society of Microbiologists
- 3) Egyptian Phytopathological Society.
- 4) The Egyptian Society of Applied Microbiology.
- 5) Egyptian Society of Virology.
- 6) Society for Industrial Microbiology and Biotechnology.

h index scopus: (14)

<https://www.scopus.com/authid/detail.uri?authorId=25723044900>

H-index google scholar: (17)

<https://scholar.google.co.jp/citations?user=5axrY5QAAAAJ&hl=en>

Honors/Awards

1. Award of the top student in B.Sc. In Microbiology 2000, Faculty of Science, Zagazig University, Zagazig Province, Egypt.
2. Doctoral Scholarship from Egyptian Ministry of Higher Education to complete Ph. D. abroad for four years (2007-2011).
3. Travel Grant Award. FEMS 2009, 3rd Congress of European Microbiologists. June 28– July 2, 2009. Gothenburg, Sweden.
4. Travel Grant Award. The First International Congress on Virus of Microbes. June 21-25, 2010. The International Research Centre in Paris, the Institute Pasteur. France.
5. Post-doctoral grant from the Egyptian Ministry of Higher Education to France with Dr. Marie-Joelle VIROLLE, the Head of the group of "Metabolisme

Energetique des Streptomyces" Institute of Genetic and Microbiology, University Paris Sud ,91405 Orsay France.

6. JSPS Postdoctoral Fellow, Japan society for the promotion of science (2014)
7. Zagazig University award for International publication 2012-2020
8. Post-doctoral grant from Dr. Marie-Joelle VIROLLE, the Head of the group of "Metabolisme Energetique des Streptomyces" Institute of Genetic and Microbiology, University Paris Sud ,91405 Orsay France.2015-2017

Publications

- 1) Abdel-Aal, M.H., Hasanien, Y.A., Younis, N.A., El Didamony, G., **Askora, A.**, Balabel, N.M. and Abdelaal, K., 2024. Influence of some chemicals and solvents on the lytic activity and the adsorption of bacteriophages on *Pectobacterium carotovorum* Subsp. *carotovorum*. *Plant Science Today*, 11(1), pp.593-601.
- 2) Ahmed, R.M., Enan, G., Saed, S. and **Askora, A.**, 2023. Hyaluronic acid production by *Klebsiella pneumoniae* strain H15 (OP354286) under different fermentation conditions. *BMC microbiology*, 23(1), p.295
- 3) Nada, H.G., El-Tahan, A.S., El-Didamony, G. and **Askora, A.**, 2023. Detection of multidrug-resistant Shiga toxin-producing *Escherichia coli* in some food products and cattle faeces in Al-Sharkia, Egypt: one health menace. *BMC microbiology*, 23(1), p.127.
- 4) El-Hossary, D., Mahdy, A., Elariny, E.Y., **Askora, A.**, Merwad, A.M., Saber, T., Dahshan, H., Hakami, N.Y. and Ibrahim, R.A., 2023. Antibiotic Resistance, Virulence Gene Detection, and Biofilm Formation in *Aeromonas* spp. Isolated from Fish and Humans in Egypt. *Biology*, 12(3), p.421.
- 5) Apel, C., Levasseur, M., Lejeune, C., Korch, S.B., Guérard, F., David, M., **Askora, A.**, Litaudon, M., Roussi, F., Gakière, B. and Chaput, J., 2023. Metabolic adjustments in response to ATP spilling by the small DX protein in a *Streptomyces* strain. *Frontiers in Cell and Developmental Biology*, 11, p.1129009.
- 6) Abdelrahman, F., Gangakhedkar, R., Nair, G., El-Didamony, G., **Askora, A.**, Jain, V. and El-Shibiny, A., 2023. *Pseudomonas* Phage ZCPS1 Endolysin as a Potential Therapeutic Agent. *Viruses*, 15(2), p.520.
- 7) EY Tohamy, NY Dorgham, **AA Askora**, AMA Merwad(2022) Incidence, Phenotypic and Genotypic Antimicrobial Resistance of Zoonotic *Salmonella* spp. Isolated from Broiler chicken and Human in Egypt. *Journal of Advanced Veterinary Research*

- 8) Al-Mohammadi, A. R., El-Didamony, G., Abd El Moneem, M. S., Elshorbagy, I. M., Askora, A., & Enan, G. (2022). Isolation and Characterization of Lytic Bacteriophages Specific for *Campylobacter jejuni* and *Campylobacter coli*. *Zoonotic Diseases*, 2(2), 59-72.
- 9) Mohamed, W., Askora, A., Mahdy, M., EL-Hussieny, E., Abu-Shady, H. (2022). Isolation and characterization of bacteriophages active against *Pseudomonas aeruginosa* strains isolated from diabetic foot infections. *Archives of Razi Institute*, (), -. doi: 10.22092/ari.2022.359032.2357
- 10) Saber T, Samir M, El-Mekkawy RM, Ariny E, El-Sayed SR, Enan G, Abdelatif SH, Askora A, Merwad AMA and Tartor YH (2022) Methicillin- and Vancomycin-Resistant *Staphylococcus aureus* From Humans and Ready-To-Eat Meat: Characterization of Antimicrobial Resistance and Biofilm Formation Ability. *Front. Microbiol.* 12:735494.
- 11) Mohamed AA, Elshawadfy AM, Amin G, Askora A. (2021) Characterization of R-pyocin activity against Gram-positive pathogens for the first time with special focus on *Staphylococcus aureus*. *J Appl Microbiol.*;131(6):2780-2792
- 12) Askora, A., Kawasaki, T., Fujie, M., and Yamada, T. (2021) *In vitro* characterization of the site-specific recombination system based on genus *Habenivirus* ϕ RSM small serine integrase **Molecular Genetics and Genomics**.in press
- 13) Askoura M, Said N., Enan, G., Askora A. (2021) Characterization of polyvalent bacteriophages targeting multidrug-resistant *klebsiella pneumonia* with enhanced anti-biofilm activity. **Applied Biochemistry and Microbiology** 57, (1) :117–126.
- 14) El-Telbany, M.S.; El-Didamony, G.; Askora, A.; Ariny, E.; Abdallah, D.; Connerton, I.F.; El-Shibiny, A (2021). Bacteriophages to Control Multi-Drug Resistant *Enterococcus faecalis* Infection of Dental Root Canals. **Microorganisms**, 8
- 15) Askora A., EL-telbany M., El-Didamony G., Ariny E., Askoura M. (2020) Characterization of Ef-vB1 prophage infecting oral *Enterococcus faecalis* and enhancing bacterial biofilm formation. **Journal of Medical Microbiology** (2020) **69**: 1151-1168
- 16) Helal, G.A., Ahmed, F.A., Askora, A., Saber, T.M., Rady, S.M (2019) Pseurotin a from *aspergillus fumigatus* fr. AUMC 8002 exhibits anticancer activity against hepatocellular carcinoma in vitro and in vivo. **Slovenian Veterinary Research** 56 (2)
- 17) Ahmed, M.H., Hussein, Y., Askora, A., El Kafrawy, S.B., El-Basheer, R (2019) Assessment of heavy metals and molecular characterization of the Egyptian *avicennia marina* along the red sea coast. **Egyptian Journal of Aquatic Biology and Fisheries** 23 (3), 103-116.
- 18) Saad, A.M., Askora, A., Soliman, A.M., Nariya H., Kawasaki T., Fujie M., Shimamoto T, Yamada T. (2018) Correction to: Full genome sequence of

a polyvalent bacteriophage infecting strains of Shigella, Salmonella, and Escherichia. **Archives of Virology**, 163(11), (3207-3210).

- 19) Yoshikawa G, **Askora A**, Blanc-Mathieu R, Kawasaki T, Li Y, Nakano M, Ogata H, Yamada T (2018) *Xanthomonas citri* jumbo phage XacN1 exhibits a wide host range and high complement of tRNA genes. **Scientific Reports** 14;8(1): 4486.
- 20) Mahmoud M, **Askora A**, Barakat AB, Rabie OE, Hassan SE. (2018) Isolation and characterization of polyvalent bacteriophages infecting multi drug resistant *Salmonella* serovars isolated from broilers in Egypt. **Int J Food Microbiol.** 266:8-13.
- 21) **Askora, A.**,Kawasaki,T., Fujie, M., and Yamada,T. (2017) Lysogenic Conversion of the Phytopathogen *Ralstoniasolanacearum* by the P2virus ϕ RSY1.Front. Microbiol. 8:2212.
- 22) Ahmad, A.A., Kawabe,M.,**Askora, A.**, Kawasaki,T., Fujie, M., and Yamada,T. (2017) Dynamic integration and excision of filamentous phage XacF1 in *Xanthomonascitri*pv. *citri*, the causative agent of citrus canker disease. FEBS Open Bio. 19; 7(11): 1715-1721.
- 23) Esnault C., Smirnov A., Dulermo T, **Askora A**, David M, Hamdali H, Froissard M, Deniset-Besseau A. and Virolle M.J. (2017) A strong antibiotic production correlates with oxidative metabolism in *S. coelicolor*. **Scientific Reports** 7(1): 200. doi: 10.1038/s41598-017-00259-9.
- 24) Bhunchoth, A, **Askora A**,Phironrit N, Leksomboon C, Chatchawankanphanich O, Mihara T, Nishimura Y, Ogata H, Kawasaki T, Nakano M, Fujie M, Yamada T. (2016) Two Asian jumbo phages, ϕ RSL2 and ϕ RSF1, infect *Ralstoniasolanacearum* and share common features related to ϕ KZ-like phages. *Virology*, 494: 56-66.
- 25) **Askora A** and Yamada, T. (2015) Two different evolutionary lines of filamentous phages in *Ralstoniasolanacearum*: their effects on bacterial virulence. **Frontier in Genetics** 6: 217.
- 26) **Askora, A.**, AbdallahMerwad, Rasha M. Gharieb, Maysa A. I. Awadallah (2015) A lytic bacteriophage as a biocontrol for some enteropathogenic and enterohemorrhagic*Escherichia coli* strains of zoonotic risk in Egypt.**Revue Méd. Vét.**, 2015, 166, 3-4, 76-83.
- 27) Othman B.A., **Askora, A.**, and AmelS.M.Abo-Senna (2015) Isolation and characterization of a siphoviridae phage infecting *Bacillus megaterium* from a heavily trafficked holy site in Saudi Arabia. **Folia Microbiologica**, 60 (4), 289-295.
- 28) Attallah AM, Abdallah SO, El-Far M, Omran MM, Tabll AA, Ghaly MF, Ezzat SM, Elhamshary MO, El-Gohary ZM, Mohamedin AH, El-Morsi AA, **Askora A**, Abdelrazek MA, El-Kafrawy HM, Keneber MH, Khalil MR, Aggag MM, Elbendary MS, El-Deeb MM, Abuzaid MS, Mansour AT, Attallah AA. (2015)Perinatal transmission of hepatitis C antigens: envelope 1, envelope 2 and non-structural 4. **Infectious Diseases** 47 (8), 568-574.

- 29) El Didamony, G., Askora, A., Aya A. Shehata.(2015) Isolation and characterization of T7-like lytic bacteriophages infecting multidrug resistant *Pseudomonas aeruginosa* isolated from Egypt. **Current microbiology** 70 (6), 786-791.
- 30) Ahmad, A.A., Askora, A., Kawasaki,T., Fujie, M., and Yamada,T. (2014)The filamentous phage XacF1 causes loss of virulence in *Xanthomonas axonopodis* pv. citri, the causative agent of citrus canker disease. **Frontiers in Microbiology** 5, 321-331.
- 31) Askora, A., Kawasaki, T., Usami, S., Fujie, M., Yamada, T. (2014) Insights into the diversity of ϕ RSM phages infecting strains of the phytopathogen *Ralstonia solanacearum* complex: regulation and evolution. (**Molecular Genetics and Genomics**, 289(4): 589-98).
- 32) Addy, H., Askora, A., Kawasaki, T., Fujie, M., and Yamada, T.(2014) Disruption of gsp D and its Effects on Endoglucanase and Filamentous Phage Secretion in *Ralstonia solanacearum*. **Procedia Environmental Sciences** 20, 753-759.
- 33) Enan, G., Shaaban, K.A., Askora, A., Maher, M. (2013) Coliphages lysing *Escherichia coli* bacteria: Their morphology and their response to some physical factors. **Research Journal of Applied Sciences** 8, 516-522.
- 34) Enan, G., Shaaban, K.A., Askora, A., Maher, M. (2013) Evaluation of the use of novel coliphages to control *Escherichia coli* wx and *Escherichia coli* w2 strains isolated from water. **Research Journal of Applied Sciences** 8, 486-493.
- 35) Abdel-Haliem, M.E.F and Askora A. (2013) Isolation and characterization of bacteriophages of *Helicobacter pylori* isolated from Egypt. **Future Virology** 8 (8), 821-826.
- 36) Askora A., Abdel-Haliem, M.E.F. and Yamada, T. (2012) Site-specific recombination systems in filamentous phages. **Molecular Genetics and Genomics** 287 (7), 525-530.
- 37) Addy, H., Askora, A., Kawasaki, T., Fujie, M., and Yamada, T.(2012) Utilization of filamentous phage ϕ RSM3 to control bacterial wilt caused by *Ralstonia solanacearum*. **Plant Disease** 96 (8), 1204-1209.
- 38) Addy, H., Askora, A., Kawasaki, T., Fujie, M., and Yamada, T.(2012) Loss of Virulence of the Phytopathogen *Ralstonia solanacearum* through Infection by ϕ RSM Filamentous Phages. **Phytopathology** 102 (5), 469-477
- 39) Addy, H., Askora, A., Kawasaki, T., Fujie, M., and Yamada, T.(2012)The Filamentous Phage RSS1 Enhances Virulence of Phytopathogenic *Ralstonia solanacearum*. **Phytopathology** 102(3): 244-251.
- 40) Askora, A., Kawasaki, T., Fujie, M., and Yamada, T. (2011) Resolvase-like serine recombinase mediates integration/excision in the bacteriophage ϕ RSM. **J. Biosci. Bioeng.**111,109-116.

- 41) **Askora, A.**, Kawasaki, T., Usami, S., Fujie, M., Yamada, T. (2009) Host recognition and integration of filamentous phage ϕ RSM in the phytopathogen, *Ralstoniasolanacearum*. **Virology**, 384(1): 69-76.
- 42) Othman, B.A., **Askora, A.**, N.M. Awnyand S.M. Abo-SennaAmel (2008) Characterization of virulent bacteriophages for *Streptomyces griseoflavus* isolated from soil. **Pak. J. Biotechnol.** 5 (1-2) 109-119.
- 43) Ghaly, M.F., N.M. Awny, A.M.Galal and **Askora, A.** (2005) Characterization and action of antiphytoviral agent produced by certain streptomycetes species against Zucchini yellow mosaic virus. **Egypt J. Biotechnol.** 19:209-223.

International Conferences and Meetings:-

1. **Askora, A.**, Kawasaki, T., Usami, S., Fujie, M., Yamada, T. (2008) Phage engineering II: design for new host range of *Ralstonia solanacearum* phage ϕ RSM. Annual Meeting of the Society of Biotechnology 2008, August 27–29, 2008. **Sendai, Japan.**
2. **Askora, A.**, Kawasaki, T., Usami, S., Fujie, M., Yamada, T. (2009) Host recognition and integration of filamentous phage ϕ RSM in the phytopathogen, *Ralstonia solanacearum*. **FEMS 2009**, 3rd Congress of European Microbiologists. June 28 – July 2, 2009. **Gothenburg, Sweden.**
3. **Askora, A.**, Kawasaki, T., Fujie, M., and Yamada, T. (2010) Dynamic integration and excision of filamentous phage ϕ RSM in the phytopathogen *Ralstonia solanacearum*. The First International Congress on Virus of Microbes. June 21-25, 2010. The International Research Centre in Paris, **the Institute Pasteur. France.**
4. **Askora A.** (2013) Current advances in bacteriophage biocontrol: Intl Symp (“Challenge of Red Queen” Sept.18, 2013, **Hiroshima, Japan**).
5. **Askora, A.**, Kawasaki, Fujie, M., Yamada, T. (2014) Molecular characterization of a new filamentous phage infecting *Ralstonia solanacearum* with a wide host range. Annual Meeting of the Society of Biotechnology 2014, September 9–11, 2014. **Hokkaido, Japan.**
6. **Askora A.** (2014) Diversity of ϕ RSM-type phages infecting *Ralstonia solanacearum*: regulation and evolution. 2nd Intl Symp. New Stages of Phage Biocontrol of Plant Diseases Sept.18, 2014, **Hiroshima, Japan.**
7. Ahmad A, **Askora, A.**, Kawasaki, T., Fujie, M., and Yamada, T. (2014) A filamentous phage χ acF1 causes loss of virulence to *Xanthomonas axonopodis pv citri*, the causative agent of citrus canker disease. The American Phytopathological Society Joint Meeting 2014, August 9-13 Minneapolis, **Minnesota, USA.**
8. The tenth international environmental conference, Natural resources and sustainable development 25-26 June 2014 Faculty of science, **Zagazig University, Egypt.**

9. Gharieb,K., El Didamony, G. and Askora A. (2016) Isolation and characterization of new bacteriophages infecting *Ralstonia solanacearum* in Egypt. Annual Conference on Bioscience September 12-13 **Berlin, Germany.**
10. Abd El Kader.M.A, Zaki.M.S.A, Abd- El-All.A.M, Askora.A., Mai.F.S (2018) Control of contaminated water with *E.coli* O157 and O111 by using bacteriophage. The 5th International Food Safety and Human Health Conference 13 October 2018, **Damanhour University, Egypt.**
11. Virolle,M.J., Millan-Oropeza,A., Esnault,C., Smirnov,A., Dulermo,T., and Askora, A. (2016) In *Streptomyces*, the switch between primary and secondary metabolism is underpinned by a transition from glycolytic to oxidative metabolism. *New Biotechnology*, 33, pp.S59--S60
12. The 14th international environmental conference, Natural resources and sustainable development 17 July 2019 Faculty of science, **Zagazig University, Egypt.**
13. The 15th international environmental conference, Natural resources and sustainable development 25 November 2020 Faculty of science, **Zagazig University, Egypt.**
14. The 16th international environmental conference, Natural resources and sustainable development December 2023 Faculty of science, Zagazig University, Egypt.

Projects and patent

- **Principal Investigator for Entrepreneurship club project** at Zagazig University. **Funded by Academy of Scientific Research and Technology(2024)**
- **Principal Investigator for project entitled:** Raising the Efficiency of the Accurate Measurements Laboratory at the Faculty of Science, Zagazig University, by Supplementation with the necessary Equipment. **Funded by Academy of Scientific Research and Technology (2023)**
- **Principal Investigator for Entrepreneurship club project** at Zagazig University. **Funded by Academy of Scientific Research and Technology(2022)**
- **Co- Principal Investigator** for three projects;
 - 1- **The first Project ID 2014081** entitled Production of new antibiotics from actinomycetes by using genetic engineering. Funded by Dammam University, Saudi Arabia.
 - 2- **The second Project ID 5447** entitled Elucidation of the link between storage

lipids and antibiotics production in Streptomyces. **Funded by Science & Technology Development Fund (STDF).**

The third Project: Development and upgrading the central unit of the Electron Microscope in the Faculty of Science, Zagazig University. **Funded by Academy of Scientific Research and Technology**

Patents and new findings

<http://www.google.com/patents/WO2012147928A1?cl=ja>

<http://www.newsr.com/newsletters/Biotech-Week/2011-05-04/6050420111299UW.html>

<http://blogs.nature.com/houseofwisdom/2015/06/phages-not-just-killers.html>

Keywords of my ongoing research work:

Microbiology, Bacteria, Streptomyces conjugation, antibiogram activity, lipids and antibiotics analysis, Molecular Biology, Waste Water management, Molecular genetics, Biotechnology, Bioinformatics, Synthetic biology. Immunology, Bacterial viruses, Virus-host Interactions, Molecular Virology, virus, Phage therapy, Antiviral.

Language skills:

Arabic: native speaker

English: fluent

French: basic

Japanese: basic.

References:

References:

- 1) **Professor Takashi Yamada**, Department of Molecular Biotechnology, Graduate School of Advanced Sciences of Matter, Hiroshima University, 1-3-1 Kagamiyama, Higashi-Hiroshima-739-8530, Japan.
Email: tayamad@hiroshima-u.ac.jp
- 2) **Dr Marie-Joelle VIROLLE**, CNRS Research Director, Head of the group "Energetic Metabolism of Streptomyces, University Paris Sud 91405 Orsay, France.
Email : marie-joelle.virolle@i2bc.paris-saclay.fr
- 3) **Professor Dr. Khalid Eldrandaly**, President of Zagazig University.
Email: khalid_eldrandaly@zu.edu.eg