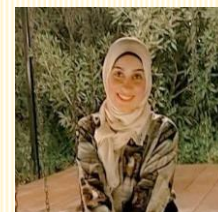


Dr. Hala Saad Abuelmakarem Abdelhameed

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Education:

Academic Degree	Major	specialty	Place of Issue	Address	Date
Doctorate (PhD)	Biomedical Engineering	Nanotechnology and Optical imaging	Cairo University	Cairo	2019
Masters (M.Sc.)	Biomedical Engineering	Artificial intelligence	Cairo University	Cairo	2013
Bachelor (B.Sc.)	Biomedical Engineering	Biomedical Engineering	HIE	Cairo	2005

PhD, Master or Fellowship Research Title: (Academic Honors or Distinctions):

PhD	Malignant Cel Line Diagnosis and Treatment using Near Infrared and Nanotechnology: Experimental Study
Master	Language Speech Impairment Rehabilitation Using Automatic Speech Recognition (ASR) Technique.

Experiences:

Title of Job	Address of Work	Country	Date	
Assistant professor	HIE	Egypt	From	2011
			To	2013
Assistant Lecturer	HIE	Egypt	From	2013
			To	2019
Assistant researcher	HIE	Egypt	From	2020
			To	Now

Research Interests:

1. Artificial intelligence.
2. Nanotechnology.
3. Optical imaging.

Publications:

#	Name of author(s)	Title of Publication	Publisher and Date of Publication	Link of Publication
1	S. Mahdy; H. S. Abuelmakarem	Simulation of the Alzheimer brain response to 915 nm laser irradiation: Exploring power levels, laser configurations, temperature, and dosages for effective photobiomodulation therapy	Infrared Physics & Technology (2025)	https://doi.org/10.1016/j.infrared.2025.105860
2	H. S. Abuelmakarem; et al.	Investigating the application of pomegranate-loaded chitosan nanoparticles as contrast agents for enhancing breast cancer detection via diffuse reflectance spectroscopy	Chemosensors, 13(2), 73 (2025)	https://doi.org/10.3390/chemosensors13020073
3	H. S. Abuelmakarem; et al.	Precancer detection based on mutations in codons 248 and 249 using Decision Tree (DT) and XGBoost deep learning model	International Journal of Industry and Sustainable Development, 6(1), 67–77 (2025)	https://ijisd.journals.ekb.eg/article_399181.html
4	H. S. Abuelmakarem; et al.	Cancer treatment protocol advisor: Mobile application sets the treatment regimens	Journal of the ACS Advances in Computer Science, 16(1) (2025)	https://journals.ekb.eg/article_406661_0.html
5	H. S. Abuelmakarem; et al.	Preventing neuron atrophy using brain photobiomodulation	Proceedings of JAC-ECC (2024)	https://doi.org/10.1109/JAC-ECC64419.2024.11061194

		therapy at 810 nm: Prototype and laser fluence rate simulation		
6	M. A. Khaleque; S. I. Hossain; M. R. Ali; M. A. S. Aly; H. S. Abuelmakarem; et al.	Bioreceptor modified electrochemical biosensors for the detection of life-threatening pathogenic bacteria: A review	RSC Advances, 14(39), 28487–28515 (2024)	https://doi.org/10.1039/D4RA03274G
7	H. S. Abuelmakarem; et al.	Alzheimer's disease progression detection based on optical fluence rate measurements using alternative laser wavelengths	International Journal for Numerical Methods in Biomedical Engineering, 40(5) (2024)	https://doi.org/10.1002/cnm.3816
8	H. S. Abuelmakarem; D. Mofed; S. H. Ismail; O. AbdelKader; M. S. Abdulfattah; M. E. Samir; M. T. Abdullah; M. W. Sayed; Y. A. Youssef; W. A. Ahmed	Early cancer detection using fluorescent Ashwagandha chitosan nanoparticles combined with near-infrared light diffusion characterization: In vitro study	Lasers in Medical Science, 38(1), 37 (2023)	https://link.springer.com/article/10.1007/s10103-022-03678-x
9	H. S. Abuelmakarem; A. Ahmed	An integrated IoT smart cane for the blind and visually impaired individuals	SVU-International Journal of Engineering Sciences and Applications, 5(1), 71–78 (2023)	https://journals.ekb.eg/article_323828.html
10	H. S. Abuelmakarem; S. A. Fawzi; et al.	Computer-aided therapy using automatic speech recognition technique for delayed language development children	Biomedical Engineering: Applications, Basis and Communications, 34(4), 2250023 (2022)	https://doi.org/10.4015/S1016237222500235
11	H. S. Abuelmakarem;	The fluorescent effect of Withania somnifera chitosan	Journal of Fluorescence,	https://link.springer.com/article/10.1007/s10895-022-02895-5

	M. A. Sliem; J. El-Azab; et al.	nanocomposite as an effective contrast agent for cancer theragnostic: Experimental study in vitro	32(3), 949–960 (2022)	
12	H. S. Abuelmakarem; W. A. Ahmed; D. Mofed; M. Wael; S. A. Sami	The fluorescent effect of chitosan magnetitic nanoparticles for near-infrared imaging	NILES Conference Proceedings (2021)	https://doi.org/10.1109/NILES53778.2021.9600516
13	H. S. Abuelmakarem; O. Hamdy; M. A. Sliem; et al.	Colonic carcinoma diagnosis using chitosan nanoparticles based on the optical properties	Journal of Physics: Conference Series, 1472(1), 012001 (2020)	https://iopscience.iop.org/article/10.1088/1742-6596/1472/1/012001
14	H. S. Abuelmakarem; M. A. Sliem; J. El-Azab; et al.	Toward highly efficient cancer imaging and therapy using the environment-friendly chitosan nanoparticles and NIR laser	Biosensors, 9(1), 28 (2019)	https://doi.org/10.3390/bios9010028

Language Proficiency:

1. Arabic (Mother tongue).
2. English.