



**FACULTY FULL NAME:** Elfatih Ibrahim Abuelhia

**POSITION:** Assistant Professor

### Personal Data

Nationality | British

Date of Birth | 01-01-1971

Department | Radiological Sciences

Official IAU Email | aabuelhia@iau.edu.sa

Office Phone No. |

### Language Proficiency

Language	Read	Write	Speak
Arabic	✓	✓	✓
English	✓	✓	✓
Others			

### Academic Qualifications (Beginning with the most recent)

Date	Academic Degree	Place of Issue	Address
Jan -2007	Doctoral Ph.D.	UK	University of Surrey
June- 1997	Master MSc	UK	University of Surrey
October 1994	BSc.	Sudan	University of Gezira

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

PhD	
Master	
Fellowship	

### Professional Record: (Beginning with the most recent)

Job Rank	Place and Address of Work	Date
Assistant Professor	Imam Abdulrahman Bin Faisal University - KSA	2012 -



Research Assistant		University of Surrey- UK	2010	2012
Postgraduate researcher		University of Surrey- UK	2003	2007
Lecturer		Institute of Nuclear Medicine, Molecular biology and Oncology University of Gezira, Sudan	1997	2003

### Administrative Positions Held: (Beginning with the most recent)

Administrative Position	Office	Date
Coordinator: (MSc. in Radiological Sciences) Postgraduate program	Department of radiological sciences, college of applied medical sciences, IAU	2019 to date
Research representative Department of Radiological Sciences.	Department of radiological sciences, college of applied medical sciences, IAU	2015 to present

### Scientific Achievements

#### Published Refereed Scientific Researches

(In Chronological Order Beginning with the Most Recent)

#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
	Elfatih Abuelhia, Ali Alghamdi	Evaluation of arising exposure of ionizing radiation from computed tomography and the associated health concerns	Journal of Radiation Research and Applied Sciences, 2020
	A.N. Edama , A. Suliemanb,* , N. Tamamc , E. Abuelhia , I. Saliha,e , A.K. Sama , M. Youseff , M. Alkhorayefg,h , D.A. Bradleyh,i.	Current Sudan protective practice in diagnostic nuclear medicine and patient dose.	Journal of Radiation Physics and Chemistry 2020
	E. Abuelhia	Assessment of radiation dose from radon ingestion and inhalation in commercially bottled drinking water and its annual effective dose in Eastern Province, Saudi Arabia	International Journal of Environmental Health Research 2019
	E. Abuelhia	Awareness of Ionizing radiation exposure among	Journal of Radiological Protection



	junior doctors and senior medical students in radiological investigations	2017
E. Abuelhia	Evaluation of annual effective dose from indoor radon concentration in Eastern Province, Saudi Arabia	Journal of Radiation Physics and Chemistry 2017
M. Alkhorayef, E. Abuelhia, M. P.W. Chin and N. M. Spyrou	Determination of the relative oxygenation of samples by ortho-positronium 3-gamma decay for future application in oncology	Journal of Radioanalytical and Nuclear Chemistry 2009
M. Alkhorayef, E. Abuelhia, K. Alzimami, M. Marouli, M. P.W. Chin and N. M. Spyrou	Experimental comparison of the relative yield of $3\gamma/2\gamma$ positron annihilation using semiconductor and scintillation detectors	Journal of Radioanalytical and Nuclear Chemistry 2009
E. Abuelhia, K. Kacperski and N. M Spyrou	Evaluation of the scintillators & semiconductor detectors to image three photon positron annihilation for PET	Journal of Radioanalytical and Nuclear Chemistry 2008
E. Abuelhia, K. Alzimami, M. Alkhorayef, Z. Podolyák, N.M. Spyrou	Measurement of coincidence timing resolution of scintillation detectors compared to semiconductor detectors to image three-photon positron annihilation	Journal of Radioanalytical and Nuclear Chemistry 2008
K. Alzimami, E. Abuelhia, Z. Podolyák, N.M. Spyrou	Investigation of the new LaBr <sub>3</sub> (Ce) and LaCl <sub>3</sub> (Ce) scintillators for gamma-ray spectroscopy	Journal of Radioanalytical and Nuclear Chemistry 2008
E. Abuelhia, K. Kacperski, N. M. Spyrou	Three-photon annihilation in PET: 2D imaging experiments	Journal of Radioanalytical and Nuclear Chemistry 2007
E. Abuelhia, K. Kacperski, S. Kafala and N. M Spyrou	Performance of triple coincidence imaging as an addition to dedicated PET	Radiation Physics and Chemistry. 2007
N. M. Spyrou, K. Kacperski, E. Abuelhia. S. Kafala	A prototype Semiconductor-based Scanner using Three-	International Journal of Science 2005



	photon Coincidence Technique	

### Refereed Scientific Research Papers Accepted for Publication

#	Name of Investigator(s)	Research Title	Journal	Acceptance Date

### Scientific Research Papers Presented to Refereed Specialized Scientific Conferences

#	Name of Investigator(s)	Research Title	Conference and Publication Date
	E. Abuelhia	Evaluation of annual effective dose from indoor radon concentration in Eastern Province, Saudi Arabia	2 <sup>nd</sup> International Conference on Dosimetry and its Applications. (ICDA-2), 3-8 July 2016, Guildford, Surrey, United Kingdom.
	M. Alkhorayef, E. Abuelhia, M. P.W. Chin and N. M. Spyrou	Determination of the relative oxygenation of samples by ortho-positronium 3-gamma decay for future application in oncology	9 <sup>th</sup> International Conference on Nuclear Analytical Methods in the Life Sciences (NAMLS-9), 7 <sup>th</sup> -12 <sup>th</sup> September 2008, Lisbon, Portugal
	E. Abuelhia, K. Kacperski and N. M. Spyrou	Evaluation of the scintillators & semiconductor detectors to image three photons positron annihilation for PET. International Conference	Methods and Applications of Radioanalytical Chemistry: 3-7 April 2006, Kailua-Kona, Hawaii, USA.
	N. M. Spyrou, K. Kacperski, E. Abuelhia. S. Kafala	A prototype Semiconductor-based Scanner using Three-photon Coincidence Technique	1 <sup>st</sup> International Conference on Biological and Medical Physics, March 27- 30, 2005, Al-Ain, UAE University, UAE.
	E. Abuelhia, K. Kacperski, S. Kafala and N. M Spyrou	Performance of triple coincidence imaging as an addition to dedicated PET	8 <sup>th</sup> International Workshop on Positron and Positronium Chemistry, 4-9 Sep. 2005, Coimbra, Portugal
	E. Abuelhia, K. Kacperski, N. M. Spyrou	Three-photon annihilation in PET: 2D imaging experiments. 11th International Conference.	Modern Trends in Activation Analysis (MTAA). University of Surrey, Guildford, 20–25 June 2004. U.K
	• E. Abuelhia,	Positronium imaging in positron	35 <sup>th</sup> Polish Seminar on Positron



K. Kacperski and N. M Spyrou	emission tomography	Annihilation, Sep. 20-24, 2004, Poland.

### Completed Research Projects

#	Name of Investigator(s) (Supported by)	Research Title	Report Date
	E Abuelhia	Investigation of the Radiation level and the Preparedness of the Medical Procedures and Emergencies in case of Radiation Accidents in Eastern Province, Saudi Arabia.	2013-2014, 2014 -2015
	E Abuelhia	Elfatih Abuelhia, University of Dammam, "Strategies for CT Radiation Dose Optimization and establishing Diagnostic Reference Levels (DRL) for routine Radiological Investigations in the region	2014-2016
	E Abuelhia	The feasibility of SPECT/CT newly installed at King Fahad University of the Hospital	2016-2017

### Current Researches

#	Research Title	Name of Investigator(s)
	Evaluation of arising exposure of ionizing radiation from computed tomography and the associated health concerns	Elfatih Abuelhia & Ali Alghamdi
	Evaluation of Effective Dose: A comparison methods using organs dose-based calculations compared with using dose-length product	Elfatih Abuelhia & Ali Alghamdi

### Contribution to Scientific Conferences and Symposia

#	Conference Title	Place and Date of the Conference	Extent of Contribution

### Membership of Scientific and Professional Societies and Organizations

- Full membership of the Institute of Physics (IOP, UK), MInstP
- Member of International Organization of Medical Physics (IOMP)
- Member of Sudanese Medical Physics Society (SMPS)

### Teaching Activities



## Undergraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
	Medical Radiation Sciences I	RADL212	14 Lectures/ 2 Tutorials
	Medical Radiation Sciences II	RADL224	14 Lectures/ 1 Tutorials
	Radiobiology	RADL216	12 Lectures/ 2 Tutorials
	Imaging Equipment	RADL217	10 Lectures
	Radiation Protection	RADL316	13 Lectures/ 2 Tutorials
	Advance Imaging Modalities	RADL421	8 Lectures
	Graduation Research Project	RADL422	Supervision

### Brief Description of Undergraduate Courses Taught: (Course Title – Code: Description)

#### Medical Radiation Sciences I, RADL212

Through a series of lecture and classroom activities, the student is presented with the Bohr atom, characteristic properties associated with nuclear structure and change, mechanisms, modes and results of nuclear transformation. The origin and nature of radiation and its interactions with matter are discussed. This course is designed to enable the student to learn the general principles of physics of nuclear medicine, procedures and instrumentation in order to establish basic nuclear medicine understanding. It is designed to familiarize the student with basic radiation detectors, their applications, theory of function and limitations. Through a series of lectures, the student gains an in depth understanding of operating principles, construction and mathematical principles governing radiation detectors, dosimeters, and the statistics of radioactivity. Laboratories instrumentations are required to emphasize didactic lectures and to help the student gain a practical knowledge in the use, operation and calibration of these devices.

#### Medical Radiation Sciences II, RADL224

The students will relate his academic work and knowledge to clinical experiences. The learning outcome will produce a competent, caring therapeutic radiographers, who are able to work at the interface between the latest in medical technology and the cancer patient. The students acquire skills and knowledge to enable him to become a professional capable of delivering first class cancer care. Will learn about the nature and development of cancer, and how the cancer can be managed with the radiation. The students will gain the clinical skills necessary to care for patients on a daily basis. Provide students with the skills to analyze the detailed principles of operation and application of imaging and therapeutic radiotherapy equipment including the implications for health and safety through their use. This course will enable students to evaluate the application of radiotherapy treatment planning, dosimetry and imaging in relation to the relevant characteristics of ionizing radiation and be able to justify the use of current clinical radiation detection devices. Detailed analysis of the structure of matter, properties of radiation, nuclear transformation, x-ray production, and interactions of ionizing radiation are emphasized. Also presented are treatment units used in external radiation therapy, measurement and quality of ionizing



radiation produced, absorbed dose measurement, dose distribution, and scatter analysis. In addition, the course will include properties of photon and electron beams, electron beam therapy, brachytherapy, gamma ray constants of isotopes, calculation of brachytherapy dose in clinical applications, systems of implant dosimetry, and implant techniques.

### **Radiobiology, RADL216**

To enable the students to acquire the necessary awareness and knowledge of the radiobiology of normal tissues and tumors. Also to present an overview of the principles of radiation interaction with living matter. Understanding of radiation health effects and safety requirements.

Through a series of lecture and classroom activities, the student is presented with the principles of radiations physics, types and units of measurement. The origin and nature of radiation and its interactions with matter particularly living organisms are discussed. This course is designed to enable the student to learn the general principles of living tissue response to ionizing radiations in order to establish basic understanding of radiation interaction with living matter. It is designed to familiarize the student with basic tissues response to radiation (radio-sensitivity and radiolysis), their biological effects, theory of function and limitations. Through a series of lectures, the student gains an in depth understanding the principles of cell biology, cell divisions, and the biological adverse due to interaction with all types of radiations.

### **Radiation Protection, 316**

To enable the students to acquire the necessary awareness where ionizing radiations exist in clinical environments or anywhere radiation can be a source of hazard. Also to present an overview of the principles of radiation protection, including the responsibilities of the radiographer towards patients, personnel and the public. The students will be familiarized with the basic physics of ionizing radiations and with radiation biology as well with the essential rules of shielding, containment and good work practice. Radiation health and safety requirements of regulatory agencies (e.g King Abdulaziz City for Science and Technology), accreditation agencies and health care organizations are incorporated.

### **Graduation Research Project, RADL422**

Students taking degrees in radiological sciences carry out a substantial individual project in their final year. Each project is supervised by a member or more of faculty and assessed via written reports and sometimes presentations. List of number of different projects will be put on the department board for the students to choose one that is most interested. In fact, we would encourage students to formulate their own ideas for a project. Before choosing projects, students are advised to contact and speak to the academic staff that proposed the projects in which they are most interested.

Ideally, students should have selected their Supervisor and project topic by the second week of the start of the second Term. Students should have a logbook right at the beginning of the research project and include records of meetings with the supervisor. He should meet with his supervisor regularly taking his logbook along to review progress. The complete logbook should be submitted as an appendix to the final report.

All faculty are capable of offering good advice on final year project, no matter what the topic. The way in which supervisions are organized will vary depending on student's







### Guest/Invited Lectures for Undergraduate Students

#	Activity/Course Title and Code	Subject	College and University or Program	Date

### Student Academic Supervision and Mentoring

#	Level	Number of Students	From	To
	Undergraduate	Over 100		

### Supervision of Master and/or PhD Thesis

#	Degree Type	Title	Institution	Date
	Master's degree (MSc)	Performance of semiconductor detectors in triple coincidence imaging (Optimisation of Spatial Resolution).	University of Surrey, UK	2007
		Determination of 3-gamma photon yield in biological samples (analysis of the results from experiments at Argonne National Laboratory, USA),	University of Surrey, UK	2006
		Characterisation of Ge & CdZnTe semiconductor detectors for three-photon positron annihilation investigations	University of Surrey, UK	2005
		Three-gamma yield measurements	University of Surrey, UK	2004
		Precise measurements of the three-photon annihilation rate of positron	University of Surrey, UK	2003



### Ongoing Research Supervision

#	Degree Type	Title	Institution	Date

### Administrative Responsibilities, Committee and Community Service (Beginning with the most recent)

#### Administrative Responsibilities

#	From	To	Position	Organization

#### Committee Membership

#	From	To	Position	Organization

#### Scientific Consultations

#	From	To	Institute	Full-time or Part-time

#### Volunteer Work

#	From	To	Type of Volunteer	Organization

### Personal Key Competencies and Skills: (Computer, Information technology, technical, etc.)

1	ICT Skills
2	



---

## Last Update

.....31/08/2020