Ibrahim OSMAN

"The more you know, the more you realize how little you know."

Education

2002-2005   **Secondary School** , *Alsawra harra (55) Secondary School*, Omdurman, Khartoum, *Grade:79.7 percent*.
Degree: Scientific Secondary School Certificate

2005-2009   **Bachelor Degree**, *Sudan University of Science and Technology (SUST), College of Science*, Khartoum, *Grade: Second Class - Division One*.
Degree: Bachelor Degree in General Physics

Master Degree

2012-2015   **Master Degree**, *Sudan University of Science and Technology (SUST), College of medical Radiologic Sciences (CMRS)*, Khartoum, Sudan, *Grade: First Class and top the class*.
Degree: Master Degree in Medical Physics

title: *Title*: (Complementary research) Evaluation of Radiation Dose Received by Paediatric Chest X-rays

Supervisor: Dr.Yosif Mohammed Yosif Abdalla, CMRS at Sudan University of Science and Technology

Short thesis abstract: This study performed to estimate the entrance skin dose (ESD) received by paediatric patients who were referred for various diagnostic X-ray examinations at five hospitals in Khartoum State (Sudan). The main objective of the study was to evaluate the radiation dose received to organs in chest X-rays in paediatric patients and estimate of radiation hazard to optimize technique to reduce the patients dose

2014-2015 **Master Degree**, *African Institute for Mathematical Sciences-AIMS (Cameroon)*, Limbe, South West Region - Cameroon, *Grade: Good Pass*.
Degree: Master Degree in Mathematical Sciences

title: *Title*: (Complementary research) The Physics of X-rays Imaging

Supervisor: Dr. habil. Anatole Kenfack, Free University Berlin, Takustr.3, 14195 Berlin, Germany

Short thesis abstract: In this master thesis, we present the high harmonic generation (HHG) theory as an alternative way to produce coherent beam with short wavelengths in the X-rays region. The mechanism of this theory central to this work is based on a semi-classical three step model. For its complete description, the time dependent Schrodinger equation (TDSE) of the Hydrogen atom considered here is solved by means of the Fast Fourier Split Operator method. First, both the ground state and the energy of the system are obtained by imaginary time propagating any arbitrary wavefunction taken as initial state. Then, using the obtained ground as the initial state for the real propagation, the time dependent wavefunction of the system subject to a femtosecond laser pulse is computed. With this time dependent wavefunction, system observables can be computed including the energy, the probability density and many more. Moreover, from the computation of the dipole acceleration, we were able to generate spectra by Fourier transforming the resulting dipole accelerator. Finally, by examining these spectra of the plateau shapes, we found that the radiations produced are of the X-rays type.

Experience

Workshops

01/08/2016 - **Fourth African School for Fundamental Physics and Appli-**
19/08/2016 **cations** , Kigali- Rwanda.

03/10/2015 - **Professional enhancement workshop in Student Assess-**
05/10/2015 **ment and Problem Based Learning** , UMST-University,
(3 days) and Khartoum- Sudan.
04/11/2015 -
05/11/2015
(2 days)

18/02/2015 - 20/02/2015	**Workshop on Applied Mathematics and software development with a special view on cryptology and single-board computers** , *Prof. Dr. Axel Schumann (Faculty of Mathematics, Natural Sciences and Computer Sciences, University of Applied Sciences (THM), Mittelhessen, Germany) and Prof. Dr. Dorit Schumann (Faculty of Management, University of Applied Sciences, Fulda, Germany)*, AIMS-Cameroon, Limbe- Cameroon.
08/10/2014	**Designing an integrative framework to study complex diseases and improve chemotherapy** , AIMS-Cameroon, Limbe-Cameroon, Gaston K. Mazandu, PhD, University of Cape Town, South Africa.
15/10/2014	**Elastic Vibrations in Seamless Microtubule with two- and three- nearest neighbours interactions** , AIMS-Cameroon, Limbe- Cameroon.
10/09/2014	**(Hammer or saw?) How to choose method in computational electromagnetics, Oskar TALCOTH, Ph.D** , AIMS-Cameroon, Limbe- Cameroon.
15/10/2014	**Control of the p53 protein-mdm2 inhibitor system using nonlinear Kalman Filtering** , AIMS-Cameroon, Limbe-Cameroon.
03/12/2014	**Mathematical modelling of the nerve impulse: Insights from the Hodgkin-Huxley model, 62 years later, Alain Moise Dikande, PhD, Department of Physics, University of Buea, Cameroon** , AIMS-Cameroon, Limbe- Cameroon.
07/01/2015	**From measure theory to turbulence: open questions in mathematical fluid dynamics, Michael Ndjinga, PhD, CEA-Saclay, France** , AIMS-Cameroon, Limbe- Cameroon.
19/11/2014	**Mathematical Models in Entrepreneurship Research, Dave Valliere, Ph.D, Ryerson University (Ted Rogers School of Management, Toronto), Canada** , AIMS-Cameroon, Limbe-Cameroon.
25/02/2015	**Understanding the Human Brain with Statistics, Kaja Jasinska, PhD, Haskins Laboratories, New Haven, United States** , AIMS-Cameroon, Limbe- Cameroon.
18/03/2015	**Directed transport of particles in systems out of equilibrium, Anatole Kenfack (Prof.), Free University Berlin, Germany** , AIMS-Cameroon, Limbe- Cameroon.
05/03/2015	**Interactive workshop on Imagining together public spaces in African cities, Maeva Baudoin, Urban Designer, Bousfields Inc., Toronto, Canada**, AIMS-Cameroon, Limbe-Cameroon.

Vocational

2015- up to date **Job title: Lecturer at University of Medical Science and Technology (UMST- University), Physics Department**, Khartoum - Sudan.

2009-2014 **Job title:Teaching Assistant and then tutor and lecturer at Omdurman Islamic University (OIU), College of Engineering Sciences, Department of Basic Sciences**, Omdurman-Sudan.

2011-2012 **Teaching Assistant and Physics lab instructor at Karary University - College of Engineering**, *Karary University*, Omdurman.
Sudan

2010-2014 **Job title: Teaching Assistant and then tutor and lecturer at Omdurman Islamic University(OIU), College of Science and Technology**, *Omdurman Islamic University*, Omdurman-Sudan.

Miscellaneous

- Achievement : best graduate assistant in two years 2010 and 2012 at Omdurman Islamic University.
- Achievement : Top class during my master degree of medical physics at Sudan University of Science and technology (SUST).

Exracurricular Activities

- Membership : Member of the Sudanese National Council for Medical and Health Professions.
- Membership : Member of the facilities club during master studies at AIMS-Cameroon.

Languages

fulfulde	**Excellent**	*Mother Tongue*
Hawsa	**Good**	*Common Language*
English	**Good**	*Conventional Language*
Arabic	**Excellent**	*Common Language*
French	**poor**	*Basic Conversations*

Computer skills

basic computer skills	Microsoft Office	Fair basic knowledge in programming languages such as Python,C^{++}, Matlab, R and Sage	Linux system and latex

Interests

Sports	I love playing Volleyball, ping and watching football matches
Reading	I enjoy reading books, Scientific Journals and watching Sci-fi moves
Internet	I enjoy chatting with friends, Searching for information and listening to Music online

References

- Prof. Mobarak Dirar Abdallah
  Physics Department- Sudan University of Science and Technology (SUST)
  E-mail: mobarakdirar@gmail.com
  Tel: 00249-122072454
- Dr.Faiz Mohamed Elshafia
  The Dean, Institute of Laser (IL) - Sudan University of Science and Technology (SUST)
  E-mail: f.elshafia@gmail.com
  Tel: 00249-912213380
- Prof Mama Foupouagnigni
  The Center President -African Institute for Mathematical Sciences (AIMS)- Cameroon
  E-mail:mfoupouagnigni@aims-cameroon.org
  Tel: 00237-69971711723