

Personal profile



*Our research field is **Condensed Matter Physics and Materials**, In this field, we deal with the fundamental properties of luminescence as applied to solid state phosphor materials. We synthesize the phosphor materials in both powder and thin film form by different methods and our study the optical properties of this material for different applications, such as solid state lighting. I have educated myself in this field; I have explored different branches of it. In addition, I have learned a lot about the techniques that are used in this field, such as: XRD, XPS, AES, PL, CL, UV, AFM, SEM, SAM and SIMS, to characterize the phosphor material in both the powder and thin film form. I have used the Pulsed Laser technique to convert the phosphor powder to the thin film form and I obtained a lot of experience about it. Also, I used the spin coating technique for fabrication the thin films. Currently I am working at the University of Khartoum (Sudan) as Assistant Professor in the department of the physics - faculty of education.*

1- Personal

Name: *Abdelrhman Yousif Mohammed Ahmed*

Nationality : *Sudanese*

Gender : *Male*

Date of Birth: *12-08-1977*

Marital Status : *Married and father of Yasser and Fatima El zahra.*

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2. Academic Qualifications

Degree	Institution	Country	Date
Postdoctoral Researcher	University of the Free State	South Africa	2014 - 2015
Philosophiae Doctort	University of the Free State	South Africa	2011-2014
Postgraduate Diploma in Mathematical Science	African Institute for Mathematical Science (AIMS)	South Africa	2008-2009
Master of Science (physics)	University of Khartoum	Sudan	2007-2009
Bachelor of Science & Education (honours) second class division one (physics)	University of Khartoum	Sudan	2000- 2004
Sudanese certificate	Shambat high secondary school for boys	Sudan	1997-2000

3. Academic Appointments Experience

Position/Title	Institution/ country	Date
Teaching Assistant	University of Khartoum	2005 - 2009
Lecturer	University of Khartoum	2009 -2014
Assistant Professor	University of Khartoum	2014 – to present

4- Awards

I received the Goodfellow Award for the Most Outstanding Publication in a Scientific Journal from a PhD degree 2012 (for more information see <http://www.goodfellow-ceramics.com/corporate/press/2012/goodfellow-award-gfc-en-aug-2012.pdf>).

Award	Awarding Body	Country	Date
Goodfellow Award for the most outstanding publication in a Scientific Journal from a PhD degree.	<p>1- Professor Japie Engelbrecht (Nelson Mandela Metropolitan University), Chairperson of the Condensed Matter Physics/Materials Science.</p> <p>2- Professor Simon Connell, President of the South African Institute of Physics.</p>	South Africa	2012

5- Presentation at conferences/Workshops

Training Course/Workshop	Country	Date
<i>6th South African Conference on Photonic Materials</i>	<i>(Mabula Game Lodge, South Africa)</i>	<i>05-07 May 2015.</i>
<i>7th International Symposium On Macro-and Supramolecular Architectures and Materials</i>	<i>(Emperors Palace Hotel Casino, Boksburg, South Africa)</i>	<i>23-27 November 2014.</i>
<i>7th African Laser Center Student Workshop</i>	<i>(MASCIR, FSR-UM5, Rabat-Morocco)</i>	<i>02-06 November 2014.</i>
<i>SETCOR International Conference on Smart Materials and Surfaces,</i>	<i>(SMS BANGKOK, Thailand)</i>	<i>26 - 28 August 2014.</i>
<i>6th African Laser Center</i>	<i>(21-24 November 2013</i>	<i>21 - 24 November</i>

<i>Student Workshop</i>	<i>Zevenwacht Wine Estate, Stellenbosch, Western Cape, South Africa)</i>	<i>2013.</i>
<i>The 58th Annual Conference of the South Africa Institute Physics.</i>	<i>(University of Zululand, South Africa)</i>	<i>08-12 July 2013.</i>
<i>5th South African Conference on Photonic Materials.</i>	<i>(Kariega Game Reserve, South Africa)</i>	<i>29 April- 03 May 2013.</i>
<i>5th African Laser Center Student Workshop.</i>	<i>(Windhoek, Namibia)</i>	<i>14-18 November 2011.</i>
<i>The 57th Annual Conference of the South Africa Institute Physics.</i>	<i>(University of Pretoria, South Africa)</i>	<i>09-13 July 2012.</i>
<i>4th International Conference on Nano-science and Nanotechnology.</i>	<i>(University of the Free State Bloemfontein, South Africa)</i>	<i>01-04 April 2012.</i>
<i>4th African Laser center Student Workshop .</i>	<i>(Zevenwacht Wine Estate, Stellenbosch, Western Cape, South Africa).</i>	<i>09-13 November 2011.</i>

6- Teaching Responsibilities for undergraduate

Course Title
Advance nuclear physics
Spatial topics

wave and Oscillation
General Physics
Quantum Physics

7- Adminstrative Responsibilities

Date	Position
2009	Reporter (Physics department)
03-23 of March 2016	Register (Faculty of Education)

8- Research Grants

Proposal Title	Granting Body/country	Amount	Date
Luminescence from Bi-doped oxide-based phosphors	African Laser Center & University of the Free State (South Africa)	R156 000	2016

9- Publications

(A) Articles in Journals

Authors, title, journal, date, issue no, pages.

- 1- **A Yousif, S Som, HC Swart, Photoluminescence and thermoluminescence properties of $Y_3(Al, Ga)_5O_{12}:Tb^{3+}$ phosphor, Journal of Modern Optics 63 (2) (2016) 103-110.**
- 2- **A Yousif, RM Jafer, S Som, MM Duvenhage, E Coetsee, HC**

Swart, The effect of different annealing temperatures on the structure and luminescence properties of $\text{Y}_2\text{O}_3:\text{Bi}^{3+}$ thin films fabricated by spin coating, Applied Surface Science 365 (2016) 93-98.

- 3- A Yousif, HC Swart, La^{3+} eliminate the blue component from the emission of $\text{Y}_2\text{O}_3:\text{Bi}^{3+}$, Materials Letters 171 (2016) 171-173.
- 4- RM Jafer, HC Swart, A Yousif, E Coetsee, The effect of different substrate temperatures on the structure and luminescence properties of $\text{Y}_2\text{O}_3:\text{Bi}^{3+}$ thin films, Solid State Sciences 53 (2016) 30-36.
- 5- R. M. Jafer, A. Yousif, Vinod Kumar, Trilok Kumar Pathak, L. P. Purohit, H. C. Swart, E. Coetsee, Comparison and analysis of $\text{Y}_2\text{O}_3:\text{Bi}^{3+}$ phosphor thin films fabricated by the spin coating and radio frequency magnetron techniques, Physica B 497(2016) 39.
- 6- A Yousif, R E Kroon, E Coetsee, O M Ntwaeborwa, HAAS Ahmed, Luminescence and electron degradation properties of Bi doped CaO phosphor, Applied Surface Science 356 (2015) 1064-1069
- 7- A Yousif, RM Jafer, S Som, MM Duvenhage, E Coetsee, HC Swart, Ultra-broadband luminescent from a Bi doped CaO matrix*, RSC Advances 5 (67) (2015) 54115-54122.
- 8- R M Jafer, E Coetsee, A Yousif, RE Kroon, OM Ntwaeborwa, HC Swart, X-ray photoelectron spectroscopy and luminescent properties of $\text{Y}_2\text{O}_3:\text{Bi}^{3+}$ phosphor, Applied Surface Science 332 (2015) 198-204.
- 9- A Yousif, S Som, V Kumar, HC Swart, Comparison and analysis of Eu^{3+} luminescence in $\text{Y}_3\text{Al}_5\text{O}_{12}$ and $\text{Y}_3\text{Ga}_5\text{O}_{12}$ hosts material for red lighting phosphor, Materials Chemistry and Physics 166 (2015) 167-175.
- 10- A. Yousif, S Som, HC Swart, Photoluminescence and thermoluminescence properties of $\text{Y}_3(\text{Al, Ga})_5\text{O}_{12}:\text{Tb}^{3+}$ phosphor, Journal of Modern Optics 63 (2) (2015) 103-110.
- 11- A Yousif, HC Swart, JJ Terblans, RM Jafer, V Kumar, RE Kroon,

Structural and morphology analysis of annealed $Y_3(Al, Ga)_5O_{12}: Tb$ thin films synthesized by pulsed laser deposition, Applied Surface Science 305 (2014) 732-739.

12- **A Yousif**, V Kumar, HAAS Ahmed, S Som, LL Noto, OM Ntwaeborwa, **Effect of Ga^{3+} Doping on the Photoluminescence Properties of $Y_3Al_{5-x}Ga_xO_{12}: Bi^{3+}$ Phosphor**, ECS Journal of Solid State Science and Technology 3 (11) (2014) R222-R227.

13- V Kumar, V Kumar, S Som, **A Yousif**, N Singh, OM Ntwaeborwa, **Effect of annealing on the structural, morphological and photoluminescence properties of ZnO thin films prepared by spin coating**, Journal of colloid and interface science 428 (2014) 8-15.

14- **A Yousif**, RM Jafer, JJ Terblans, OM Ntwaeborwa, MM Duvenhage, **TOF SIMS induced artificial topographical effects on the $Y_3(Al, Ga)_5O_{12}: Tb^{3+}$ thin films deposited on Si substrates by the pulsed laser deposition technique**, Applied Surface Science 313 (2014) 524-531.

15- **A Yousif**, HC Swart, OM Ntwaeborwa, **Effect of different annealing temperatures on the optical properties of $Y_3(Al, Ga)_5O_{12}: Tb$ thin films grown by PLD**, Physica B: Condensed Matter 439 (2014) 77-82.

16- V Kumar, HC Swart, OM Ntwaeborwa, RE Kroon, JJ Terblans, **A Yousif**, **Origin of the red emission in zinc oxide nanophosphors**, Materials Letters 101 (2013) 57-60.

17- **A Yousif**, HC Swart, OM Ntwaeborwa, E Coetsee, **Conversion of $Y_3(Al, Ga)_5O_{12}: Tb^{3+}$ to $Y_2Si_2O_7: Tb^{3+}$ thin film by annealing at higher temperatures**, Applied Surface Science 270 (2013) 331-339.

18- **A Yousif**, HC Swart, OM Ntwaeborwa, **Improved luminescence properties of pulsed laser deposited $Y_3(Al, Ga)_5O_{12}: Tb$ thin films by post deposition annealing**, Journal of Luminescence 143(2013) 201-206.

19- **A Yousif**, HC Swart, OM Ntwaeborwa, **Surface state of $Y_3(Al, Ga)_5O_{12}: Tb$ phosphor under electron beam bombardment**, Applied Surface Science 258 (17) (2012) 6495-6503.

(B) Articles in conference proceedings

Authors, title, conference, date, issue no, pages, place
<p>1- HAAS Ahmed, A Yousif, HC Swart, RE Kroon, <u>Luminescence of Alternating $\text{SiO}_2:\text{Tb}$ and $\text{SiO}_2:\text{Ce}$ Thin Films Produced by Sol-gel Spin Coating</u> Materials Today: Proceedings 2 (7) (2015) 4111-4117.</p> <p>2- RM Jafer, A Yousif, E Coetsee, HC Swart (2013), <u>Luminescence properties of Bi 3 in Y_2O_3</u>, SAIP Conference, 8-12 July 2013 University of Zululand, South Africa.</p> <p>3- A Yousif, HC Swart, OM Ntwaeborwa , <u>Effect of annealing on the structure of $\text{Y}_3(\text{Al, Ga})_5\text{O}_{12}:\text{Tb}$ thin films grown by PLD</u>, (2013) SAIP Conference, 8-12 July 2013 University of Zululand, South Africa.</p> <p>4- A Yousif, HC Swart, OM Ntwaeborwa, E Coetsee , <u>The influence of working atmosphere on $\text{Y}_3(\text{Al, Ga})_5\text{O}_{12}:\text{Tb}$ thin films grown with the PLD technique</u>, (2012), SAIP Conference, 09 - 13 July 2012 University of Pretoria, South Africa.</p>

(c) Forthcoming publication

Authors, title, journal, date, issue no, pages,
<p>1- A. Yousif, H. C. Swart, <u>Color tunable emission from $(\text{Y}_{1.995-x}\text{Ga}_x)_2\text{O}_3:\text{Bi}^{3+}$ phosphor prepared by sol-gel combustion method</u>, (in preparation, July 2016).</p>
<p>2- A. Yousif, R. M. Jafer, Anurag Pandey, <u>Luminescence properties of Eu^{3+} activated Y_2O_3 red phosphor with incorporation of Ga^{3+} and Bi^{3+} trace hetero-cations in the Y_2O_3 lattice</u>, (in preparation, June 2016).</p>
<p>3- A. Yousif, R. M. Jafer, S Som, H. C. Swart, <u>Change in the structure and luminescence properties of $\text{CaO}:\text{Bi}^{3+}$ phosphor as</u></p>

the result of Ca(OH)₂ formation, Journal of Molecular Structure (reviewed July 2016).

4- **A. Yousif, R. M. Jafer, Vinod Kumar, H. C. Swart, The effect of different annealing temperatures on the structure and luminescence properties of Y₂O₃:Bi³⁺thin film fabricated by RF magnetron technique (in preparation, July 2016).**

10- Referee of Journals

Journal/ Textbook	Date
Physica B	June 2015

11- Essay and thesis

1- The Propagation of Ultrashort Laser Pulses through a Linear Medium, AIMS, (<http://users.aims.ac.za/~abdelrhman/abdelrhman.pdf>),

1- Luminescent properties of Y₃(Al;Ga)₅O₁₂:Tb thin films, University of the Free State, (http://etd.uovs.ac.za/cgi-bin/ETD-browse/view_etd?URN=etd-08082014-101547).

12- Referee

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