



# Dr. Mohammed S. H. Suleiman

Assistant Professor of Physics

## Personal Data

Nationality | Sudanese

Date of Birth | 23 March 1979

Department | Department of Basic Sciences

Official IAU Email | [mssuleiman@iau.edu.sa](mailto:mssuleiman@iau.edu.sa)

## Language Proficiency

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

## Academic Qualifications (Beginning with the most recent)

Date	Academic Degree	Place of Issue	Address
2013	PhD in Physics	University of the Witwatersrand	South Africa
2008	PGDip in Mathematical Sciences	University of the Western Cape	South Africa
2007	MSc in Physics	Sudan University of Science and Technology	Sudan
2001	BSc Hons in Physics	Sudan University of Science and Technology	Sudan

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

PhD	A Theoretical Investigation of Structural, Electronic and Optical Properties of some Group 10, 11 and 12 Transition-Metal Nitrides.
MSc	Fabrication of CuO Disks to Attenuate and Filter some Visible and IR Wavelengths.

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

Job Rank	Place and Address of Work		Date	
			From	To
Assistant Professor	Imam Abdulrahman Bin Faisal University	Saudi Arabia	2016	present
Assistant Professor	University of Science and Technology	Sudan	2014	2016
Lecturer	Sudan University of Science and Technology	Sudan	2007	2013
Teaching Assistant	Sudan University of Science and Technology	Sudan	2002	2006



## Scientific Achievements

### Published Refereed Scientific Researches

(In Reverse Chronological Order Beginning with the Most Recent)

#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
1	- Ibrahim O. A. Ali - Daniel P. Joubert - <b>Mohammed S. H. Suleiman</b>	A theoretical investigation of structural, mechanical, electronic and thermoelectric properties of orthorhombic $\text{CH}_3\text{NH}_3\text{PbI}_3$	<i>The European Physical Journal B</i> 91 (10), 2018. <b>Publisher:</b> Springer
2	- Ibrahim O. A. Ali - Daniel P. Joubert - <b>Mohammed S. H. Suleiman</b>	First-Principles Calculations of the Electronic and Optical Properties of $\text{CH}_3\text{NH}_3\text{PbI}_3$ for Photovoltaic Applications	<i>Materials Today: Proceedings</i> 5 (4), 2018. <b>Publisher:</b> Elsevier
3	- <b>Mohammed S. H. Suleiman</b> - Mahlaga P. Molepo - Daniel P. Joubert	A theoretical investigation of structural, electronic and optical properties of bulk copper nitrides	<i>Journal of Alloys and Compounds</i> 753, 2018. <b>Publisher:</b> Elsevier
4	- <b>Mohammed S. H. Suleiman</b> - Daniel P. Joubert	Quantum mechanical ab initio calculations of the structural, electronic and optical properties of bulk gold nitrides	<i>European Physical Journal B</i> 88 (10), 2015. <b>Publisher:</b> Springer
5	- <b>Mohammed S. H. Suleiman</b> - Daniel P. Joubert	Theoretical calculations on the structural, electronic and optical properties of bulk silver nitrides	<i>Physica Status Solidi B</i> 252 (12), 2015. <b>Publisher:</b> Wiley-VCH

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

#	Name of Investigator(s)	Research Title	Conference and Publication Date
1	- Ibrahim O. A. Ali - Daniel P. Joubert - <b>Mohammed S. H. Suleiman</b>	Electronic and Optical Properties of Lead-Free Hybrid Perovskite $\text{CH}_3\text{NH}_3\text{SnI}_3$ from First Principles Calculations	The 63 <sup>rd</sup> Annual Conference of the South African Institute of Physics (SAIP) 2018.
2	- Ibrahim O. A. Ali - Daniel P. Joubert - <b>Mohammed S. H. Suleiman</b>	Thermoelectric properties of $\text{CH}_3\text{NH}_3\text{PbI}_3$ investigated using density functional theory and Boltzmann transport calculations	The 62 <sup>nd</sup> Annual Conference of the South African Institute of Physics (SAIP) 2017.
3	- Ibrahim O. A. Ali - Daniel P. Joubert - <b>Mohammed S. H. Suleiman</b>	First-principles calculations study of lattice thermal conductivity and structural stability of $\text{CH}_3\text{NH}_3\text{PbI}_3$	The 62 <sup>nd</sup> Annual Conference of the South African Institute of Physics (SAIP) 2017.
4	- <b>Mohammed S. H. Suleiman</b> - Daniel P. Joubert	First-principles calculations of the structural, electronic and optical properties of PdN and PdN <sub>2</sub>	The 57 <sup>th</sup> Annual Conference of the South African Institute of Physics (SAIP) 2014.
5	- <b>Mohammed S. H. Suleiman</b> - Daniel P. Joubert	Structural, electronic and optical properties of gold nitrides	The 57 <sup>th</sup> Annual Conference of the South African Institute of Physics (SAIP) 2014.



## Current Researches

Research Title	Name of Investigator(s)
First-Principles Study of Structural, Mechanical, Electronic and Optical Properties of Orthorhombic $\text{CH}_3\text{NH}_3\text{SnI}_3$	- Ibrahim O. A. Ali - Daniel P. Joubert - <b>Mohammed S. H. Suleiman</b>

## Contribution to Scientific Conferences and Symposia

#	Conference Title	Place and Date of the Conference	Extent of Contribution
1	The 7 <sup>th</sup> International Conference of the Africa Materials Research Society (MRS)	December 2013; Addis Ababa, Ethiopia.	Talk presentation
2	The 58 <sup>th</sup> Annual Conference of the South African Institute of Physics (SAIP)	July 2013; Richards Bay, South Africa.	Talk presentation
3	International Conference on Advanced Materials Modelling (ICAMM)	June 2012; Nantes, France.	Talk presentation
4	Hands-on Tutorial Workshop 2011 on Ab Initio Molecular Simulations: Toward a First-Principles Understanding of Materials Properties and Functions	July 2011; Berlin, Germany.	Poster presentation
5	Centre for Atomic-Scale Materials Design (CAMD) Summer School 2010 on the Electronic Structure Theory and Materials Design	August 2010; Copenhagen, Denmark.	Poster presentation

## Research Identifiers/Records

1	Google Scholar	<a href="https://scholar.google.com/citations?hl=en&amp;user=7Eyrj0UAAAAJ">https://scholar.google.com/citations?hl=en&amp;user=7Eyrj0UAAAAJ</a>
2	Research Gate	<a href="https://www.researchgate.net/profile/Mohammed_Suleiman5">https://www.researchgate.net/profile/Mohammed_Suleiman5</a>
3	ORCID	<a href="https://orcid.org/0000-0002-8718-9293">https://orcid.org/0000-0002-8718-9293</a>

## Membership of Scientific and Professional Societies and Organizations

- Materials Research Society (MRS)
- Sudanese Physical Society



## Teaching Activities

### Undergraduate

#	Course Title/Code	Extent of Contribution
1	General Physics (PHYS 104)	Lectures and labs
2	General Physics (PHYS 212)	Lectures
3	Vector Analysis	Lectures
4	Quantum Mechanics	Lectures
6	Solid State Physics	Lectures

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

#	Course Title/Code	Description
1	PHYS 104	- An algebra-based course for pre-medical students. - Basic concepts with concentration on biological and medical applications. - Imam Abdulrahman Bin Faisal University.
2	PHYS 212	- A calculus-based course for 2 <sup>nd</sup> year computer science students. - Basic concepts with concentration on electromagnetism and electronics. - Imam Abdulrahman Bin Faisal University.
3	Vector Analysis	- An applied mathematics course for 3 <sup>rd</sup> year physics major students. - Sudan University of Science and Technology.
4	Quantum Mechanics	- Basic principles of quantum theory for 3 <sup>rd</sup> year physics major students. - Sudan University of Science and Technology.
5	Solid State Physics	- An Introduction to atomic and electronic structure of solids for 4 <sup>th</sup> year physics major students. - Sudan University of Science and Technology.

### Postgraduate

#	Course Title/Code	Extent of Contribution
1	Quantum Mechanics	Lectures
2	Solid State Physics	Lectures

#	Course Title/Code	Description
1	Quantum Mechanics	- Mathematical formalism of quantum theory and its applications to atoms, molecules, and interaction of light with matter. - MSc programme, Institute of Laser, Sudan University of Science and Technology, Khartoum.
2	Solid State Physics	- An advanced course on atomic and electronic structure of solids. - MSc programme, International University of Africa, Khartoum.

### Guest/Invited Lectures for Undergraduate Students

Course Title	College and University or Program	Date
Electromagnetism	Faculty of Science and Technology, Shendi University, Shendi, Sudan.	2013-2014



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

### Administrative Responsibilities

From	To	Position	Organization
Oct 2018	present	Quality Coordinator (Health Track, Males)	Deanship of Preparatory Year and Supporting Studies, Imam Abdulrahman Bin Faisal University.

### Committee Membership

From	To	Position	Organization
Sep 2018	present	Exams Committee member	Physics Section, Department of Basic Sciences, Deanship of Preparatory Year and Supporting Studies, Imam Abdulrahman Bin Faisal University.

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

**Computational Skills:** Linux, LaTeX, Python and VASP.

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### Last Update

Dec 2018