



**Dr. Mohammed Babiker Suliman Blal**

### **Personal Information**

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Marital status : Married  
Birth date : 22-03-1978  
Nationality : Sudanese

### **Education**

**2016**, Doctor of Philosophy (Ph.D) in Chemistry (Organic Chemistry), Faculty of Industrial Sciences and Technology, Universiti Malaysia Pahang (UMP), Malaysia.

Dissertation: *Investigation of antimicrobial activity, bioassay-guided isolation and identification of antimicrobial compounds from Swietenia macrophylla King.*

**2008**, Master of Science (M.Sc) in Chemistry, Faculty of Engineering and Technology, University of Gezira, Wad Medani, Sudan.

**2005**, Bachelor of Science (B.Sc) in Chemistry (Hons), Faculty of Science and Technology, Al Neelain University, Khartoum, Sudan.

### **Professional and Teaching Experience**

- **Director**, January 2017 to date, Central Laboratory, Medicinal and Aromatic Plants Research Institute, National Centre for Research, Ministry of Higher Education and Scientific Research, Khartoum, Sudan.
- **Teaching assistant**: February 2014 to August 2015, Faculty of Industrial Sciences and Technology, Universiti Malaysia Pahang (UMP), Pahang, Malaysia.
- **Teaching assistant**: July 2007 to July 2008, Faculty of Engineering and Technology, University of Gezira, Wad Medani, Sudan.

### **Areas of Expertise and Courses Taught at University Level**

Organic chemistry, Organic spectroscopy (Interpretation of NMR Spectroscopy (1D & 2D-NMR), Mass spectrometry, LC-MS, GC-MS, IR, UV spectrophotometer), Medicinal chemistry, General chemistry etc.

<b>Organic Chemistry</b>	Chemistry of Hydrocarbons (Alkanes, Alkenes, Alkynes, reactions mechanism, synthesis), Isomerism, Alkyl halides, Stereochemistry, Alcohols, Phenols, Carboxylic acids, Aldehydes, Ketones, Carbohydrates, Aromatic compounds. Benzene, Reactions mechanism, Aromatic amines etc. Fats, oils, Natural Products chemistry. Name Reactions and Their Mechanism.
<b>Organic Spectroscopy (Special area)</b>	NMR Spectroscopy, Basic concept and interpretation of natural products spectra. ID & 2D NMR techniques, COSY, HSQC, HMBC, TOCSY, NOE, NOESY etc, Mass spectrometry, Principles and Basic concept of MS in natural products and synthetic compounds, Various types of fragmentations, rearrangements, Diels Alder, Thermal decomposition, various types of cleavage etc. IR, GC-MS and UV spectrophotometers.
<b>Medicinal Chemistry</b>	Definition of drugs, Drug design, lead compounds, Structural elucidation of natural compounds from medicinal plants, Synthesis of bioactive compounds especially in drugs design and development for antibacterial, antifungal and antidiabetic diseases, Natural products from medicinal plants used for insecticidal (pesticides). Extraction protocol, Purification, Isolation, Common use of natural products, phytochemical screening, Biological Screening methods etc.
<b>General Chemistry</b>	Atoms, Molecules, Atomic number, Mass number Isotopes, Periodic table, Nomenclature and chemical formula, Chemical bonding, Lewis structure, Resonance structure, Bonding theory (VBT, MOT), Quantum theory and Atomic structure, Solutions, Gases, Thermochemistry, Chemical Kinetics etc.

### **Practical Handling Instrumentations**

- ❖ NMR, Bruker and Varian 500 MHz
- ❖ Mass Spectrometer.
- ❖ FT-IR
- ❖ UV-Visible spectrophotometer,
- ❖ Recycling HPLC 908 JAI model.
- ❖ Shimadzu HPLC.
- ❖ GC-MS, LC-MS.

### **Research Grants**

- Grant No. **GRS120379**, Isolation and chemical characterization of compounds with larvicidal activity of Neem (*Azadirachta Indica*), (3,500.00 Malaysian Ringit from 1 April 2013 to 31 March 2015), **2013**.
- Grant No. **GRS130345**, Identification of antimicrobial and antifungal activities of alkaloids (including limonoids) and lipids of Malay Medicinal plant *Swietenia macrophylla* king (8,000.00 Malaysian Ringit from 1 April 2013 to 31 March 2016), **2013**.

### **Member of Editorialn Board of International Journals**

1. Chemistry of Advanced Materials (CAM).

### **List of Publications/International Confernces/Oral Presentation and Work Shops**

1. Oral presentation (2017)  
**Mohammed, B.S.**, Awatif A.M and Azhari, N.H. Bioassay-Guided Isolation and Identification of Antibacterial Compounds from *Switenia macrophylla* Seed. *The First International Conference on Microbiology Sciences and Applications (ICMSA)*. International University of Africa. Khartoum, Sudan. 23-24 April (2017). Page 22.
2. Poster presentation (2017)  
**Mohammed, B.S.**, Awatif, A.M., Azhari, N.H., Suria, A.K and Abdurahman, N.H. Effect of Essential Oils Combination on Chemical Compositions and Biological Activities. *The First International Conference on Microbiology Sciences and Applications (ICMSA)*. International University of Africa. Khartoum, Sudan. 23-24 (2017) April. Page 96.
3. Oral presentation (2014)  
**Mohammed, B.S.**, Azhari, N.H., Mashitah, Y.M., Abdurahman, N.H. and Mazza, A.S. Phytochemical Characterization of *Switenia macrophylla* King. *International Conference on Natural Products*. Palm hotel, Putrajaya, Malaysia: 18-19 March (2014). Page 31.
4. Poster presentation (2014)  
**Mohammed, B.S.**, Azhari, N.H., Mashitah, Y.M., Abdurahman, N.H. and Mazza, A.S. Antimicrobial Activities of Different Extracts of *Switenia macrophylla* King. *International Conference on Natural Products*. Palm hotel, Putrajaya, Malaysia: 18-19 March (2014). Page 118.
5. Oral presentation (2012)  
**Mohammed, B.S.** Review: *Switenia macrophylla* King. *National Conference on Postgraduate Research (NCON-PGR)*. Universiti Malaysia Pahang, Kuantan, Malaysia: 7<sup>th</sup> - 9<sup>th</sup> March (2012). Page 67.
6. Workshop on SPSS, Computer Laboratory, CAIC, Universiti Malaysia Pahang, 16<sup>th</sup> JANUARY **2014**.
7. Technology Exhibition on The Three Minutes Thises Competition Organised by Unversiti Malaysia Pahang. Astaka, Universiti Malaysia Pahang, 29 SEPTEMBER **2014**.
8. Practical handling training certificate course on Varian 500 MHz NMR held at University Malaysia Pahang, Malaysia in OCTOBER 2014.
9. Seminar (talk) on GC, GC-MS and GCxGC from shimadzu (M) Sdn. Bhd held at Universiti Malaysia Pahang, Malaysia 20 DECEMBER, **2014**.
10. Workshop on NMR (basic setup of NMR experiments, NMR with X-nuclei, homonuclear 2D spectra, processing and plotting of 1D and 2D spectra etc), FIST lab held at Universiti Malaysia Pahang FEBRAYRY, **2013**.
11. Semminar on Autamated Rotary Evaporators, Organised by Gaia Science (M) Sdn Bhd, Mini Theater, FIST Laboratory, Universiti Malaysia Pahang MAY**2013**.
12. Workshop LaTeX, held in Exercutive Room, Block Z, Universiti Malaysia Pahang DECEMBER **2013**.

### **List of Publications/Journals**

1. **Mohammed, B.S** and Awatif A.M. Preliminary phytochemical screening and antibacterial activity of ethanolic and aqueous extracts of Sudanese medicinal plant *Ziziphus spina-christi* L leaves. *Arabian Journal of Medicinal and Aromatic Plants*. Just accepted.
2. **Mohammed, B.S** and Awatif A.M. Antibacterial activity and fatty acid composition of Sudanese castor bean (*Ricinus communis* L) seed oil. *Arabian Journal of Medicinal and Aromatic Plants*. Just accepted.
3. **Mohammed, B.S** and Azhari, H.N. Chemical composition and antibacterial activity of crude extracts from Sudanese medicinal plant *Adansonia digitata* L. *Chemistry of Advanced Materials*. **2** (3) (2017) 34-43.
4. **Mohammed, B.S.**, Azhari, H.N and Awatif A.M. Chemical Composition and Antibacterial Activity of Sudanese *Balanites aegyptiaca* Del Kernel Oil. *Chemistry of Advanced Materials*. **2**(2) (2017) 14-21.
5. **Mohammed, S.B.**, Azhari, H.N., Mashitah, Y.M., Abdurahman, H.N and Mazza, S.A. Bioassay-Guided Isolation and Identification of Antifungal Compounds from Seeds of *Swietenia macrophylla*. *Australian Journal of Basic and Applied Sciences*. **10**(17) (2016) 55-62.
6. **Mohammed, B.S.**, Azhari, H.N., Mashitah, Y.M., Abdurahman, H.N and Mazza, S.A. *In vitro* Antimicrobial Activity and GC-MS Analysis of Medicinal Plant *Swietenia macrophylla* King. *Journal of Chemical and Pharmaceutical Research*. **7**(11) (2015) 519-524.
7. **Mohammed, B.S.**, Azhari, H.N., Mashitah, M.Y., Abdurahman, H.N and Mazza, S.A. Growth Inhibitory Effect on Bacteria of *Swietenia macrophylla* King Seeds and Leaves Crude Alkaloid Extracts. *International Journal of Pharmaceutical Sciences and Research*. **5**(8) (2014) 1000-1004.
8. **Mohammed, B.S.**, Azhari, H.N., Mashitah, M.Y., Abdurahman, H.N and Mazza, S.A. Physicochemical Characterization and Antimicrobial Activity of *Swietenia macrophylla* king Seed Oil. *International Journal of Engineering Research and Technology*. **3**(3) (2014) 1787-1792.
9. **Mohammed, B.S.**, Azhari, H.N., Mashitah, M.Y., Abdurahman, H.N and Mazza, S.A., Palaniselvam, K and Yuvaraj, A.R. Fatty acid Composition and Antibacterial Activity of *Swietenia macrophylla* king Seed Oil. *African Journal of Plant science*. **7**(7) (2013) 300-303.
10. Lutfor Rahman, M.D., Mashitah, M.Y., Yuvaraj A.R and **Mohammed, B.S**. Photo-inhibition Effect from Strong Electron Withdrawing Nitro Group in N-[(E)- (4 Bromophenyl)Methylidene]-4-Nitroaniline. *Chemistry of Advanced Materials*. **1**(1) (2016) 1-5.
11. Abdurahman, H.N., Said, N., Azwina, Z., Mazza, S.A and **Mohammed, B.S**. Optimization of Ultrasonicated Membrane Anaerobic System (UMAS) for Sewage Sludge Treatment using Response Surface Methodology (RSM). *International Journal of Research in Engineering and Technology*. **3**(2) (2014) 1-5.
12. Abdurahman, H.N., Said, N., Azwina, Z., Mazza, S. A and **Mohammed, B.S**. Kinetics Study of Sewage Sludge Treatment by Ultrasonicated Membrane Anaerobic System (UMAS). *International Journal of Engineering Sciences and Research Technology*. **2**(12) (2013) 3537-3541.