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Dr. Abubaker Ahmed Mohamed Siddig

Objective To use my computational physics skills in a very challenging career such as Lecturing or Research and Development.

**Personal
Information**

- **Name:** Abubaker Ahmed Mohamed Siddig
- **Date of Birth:** 1974
- **Marital Status:** Married
- **Nationality:** Sudanese
- **Gender:** Male
- **Telephone:** H/P +966540059133

Education

- **Ph.D.** (Thesis Title: COMPUTATION OF MAASS CUSP FORMS ON SINGLY PUNCTURED TWO-TORUS AND TRIPLY PUNCTURED TWO-SPHERE USING MATHEMATICA), Institute for Mathematical Research, UPM, Malaysia (2009)
- Field of Research: Quantum Science and Technology
- Master of Science, Theoretical Physics “Computational Physics” (University Putra Malaysia, Jan 2003)
- Bachelor of Physics and Mathematics (Omdurman Ahlia University, Sudan 1994)

**Computer
Languages**

- Mathematica
- Maple
- Microsoft office software
- LaTeX

Languages

- English
- Arabic

Research Experiences

- Master thesis (**Thesis entitled:** Mathematica Packages for Solving Schrödinger Equation with One Dimensional Rectangular Potentials.)
- Computational Quantum Mechanics and Computational Mathematics.
- Mathematical and Numerical Computer programming.
- Computational Physics.
- Graph Theory
- Application of Number Theory
- Quantum Chaos

Activity

- Member of preparation of the Self-Study Report for Programs (SSRP), (2016)
- Coordinator of the community service committee (Physics and Astronomy department, College of Science, King Saud University), (2015- Now)
- Member of the community service committee (College of Science, King Saud University), (2015- Now)

Work experience

The following summarizes my work experience

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|-----------|--|
| 2010-Now | ▪ Assistant Professor Physics and Astronomy, Department, King Saud University (Teaching and research) |
| 008-2009 | ▪ Graduate research assistant, Institute of Advanced Technology University Putra Malaysia. |
| 2005-2007 | ▪ Head of Science and Mathematics Department, G1-G10 (Pan Asia International School, Bangkok, Thailand). |
| 2005-2007 | ▪ Teacher of Science and Mathematics (Pan Asia International School, Bangkok, Thailand) : (Media of teaching : English) |
| 2003-2004 | ▪ Graduate research assistant, Institute of Advanced Technology University Putra Malaysia (assigned to Phy5601 Advanced Mathematical Physics and Phy4601 Mathematical Physics Tutorial). : (Media of teaching : English) |

2000-2002

- Graduate Research Assistant, Faculty of Science, Department of Computational Physics, University Putra Malaysia, Malaysia.

Teaching Interests

- General Physics
- Classical Mechanics
- Quantum Mechanics
- Mathematica for Science and Engineering
- Advanced Mathematical Physics
- Mathematical Physics
- Computational Physics
- Graph Theory
- Geometry and Hyperbolic Geometry
- Mathematical Computing

Patents and Publications

Published Articles in Journal and Conferences

K. T. Chan, H. Zainuddin, K. A. M. Atan **and A. A. Siddig**

Computing Quantum Bound States on Triply Punctured Two-Sphere Surface *Chinese Phys. Lett.* **33** 090301 (2016)
([doi:10.1088/0256-307X/33/9/090301](https://doi.org/10.1088/0256-307X/33/9/090301))

A.A. Siddig and Hishamuddin Zainuddin. Computation of the Maass Cusp on Singly Punctured- Torus, submitted to International Journal of Pure and Applied Mathematics, IJPAM (accepted 2013).

Abubaker Ahmed Mohamed Siddig and Hishamuddin Zainuddin, Maass Cusp Forms on Singly Punctured Two-Torus and Triply Punctured Two-Sphere. [arXiv:0909.1155](https://arxiv.org/abs/0909.1155) [math-ph]

Mohamed A. Siddig, **Abubaker A. Siddig**, Shahidan Radiman, Lal Said Jan, Structure of bicontinuous cubic phase of glycolipid surfactant in the presence of nanosize silica particles, Sudan Medical Monitor Vol.6, No. 1 (2011) 25 - 34

- M. A. Siddig, L. S. Jan, **A. A. Siddig**, S. Radiman, Influence of nanosize silica particles in the rheological behaviours of lyotropic cubic phase of nonionic surfactant. *Colloids and Surfaces A: Physicochem. Eng. Aspects.* (to be submit)
- M. A. Siddig, **A. A. Siddig**, S. Radiman, L. S. Jan, Rheological properties of amino-acid based anionic surfactant. *Sudan Medical Monitor* Vol.4, No. 4 (2009) 149-154
- Abubaker Ahmed Mohamed Siddig** and Hishamuddin Zainuddin, Computation Of Maass Cusp Forms On Modular Group In Mathematica, *Int. J. appl. Math*, vol. 22, No 5 (2009).
- M. A. Siddig, S. Radiman, **A. A. Siddig**, Effect of oil types and concentration on ultrasonic measurements of alkyl polyglucosides liquid crystal phases, *Sudan Medical Monitor* Vol.4, No. 2 (2009).
- Lal Said Jan, M. A. Siddig, S. Radiman, **A. A. Siddig**, Lyotropic liquid crystalline route for the synthesis of mesoporous silica, *Sudan Medical Monitor* Vol.4, No. 2 (2009).
- M. A. Siddig, Shahidan Radiman and **A. A. Siddig**, Modelling of fractional relaxation characteristics in wormlike micelles in the presence of a triblock copolymer, *Sudan Medical Monitor* Vol.4, No. 1 (2009) 47 - 52.
- A.A. Siddig** and H. Zainuddin, Computation of Maass Cusp Forms on Triply Punctured Two-Sphere with Mathematica. ICREM4, 21-23 October 2009, Kuala Lumpur.
- Hishamuddin Zainuddin, Ahmed Bouketir, **Abubaker Ahmed Mohamed Siddig**, F.P. Zen & Nurisya Mohd Shah Group-Theoretic Quantization on Triply-Punctured Two-Sphere *Jurnal Fizik Malaysia* 27 (2006) 135-139.
- Hishamuddin Zainuddin and **A.A. Siddig**, Maass Cusp Forms on Singly Punctured Two-Torus and Triply Punctured Two-Sphere. *Quantum Theory and Symmetries*, Lexington, Kentucky, USA, July 2009.
- A.A.M. Siddig**, N.M. Shah and H. Zainuddin, Maass Cusp Forms ON Singly Punctured Two-Torus, American Institute of Physics, Proceeding of International Meeting on Frontiers of Physics, Jan 2009, Genting, Malaysia.
- A.A. Siddig** and Hishamuddin Zainuddin, PUNCTURED SPHERES AND REGULAR GRAPHS: RELATIONSHIPS AND METHOD OF CONSTRUCTION. *PERFIK* 2004, 5-7 October 2004, Kuala Lumpur
- A.A. Siddig** and Hishamuddin Zainuddin, MATHEMATICA PACKAGE FOR SOLUTIONS OF SCHRÖDINGER EQUATION WITH VARIOUS DOUBLE WELL POTENTIALS. Proceeding of Advanced technology congress, 2003.

A.A. Siddig and Hishamuddin Zainuddin, A MATHEMATICA PACKAGE FOR SOLVING INFINITE DOUBLE POTENTIAL WELL. Proceeding of post graduate seminar, 2002, 163.

A.A. Siddig and Hishamuddin Zainuddin, QUANTUM MECHANICS ON MULTIPLY CONNECTED SPACES: PATH INTEGRAL APPROACH. Proceeding of postgraduate seminar, 2000, 28.

A.A. Siddig and Hishamuddin Zainuddin, MATHEMATICA PACKAGE FOR SOLUTIONS OF SCHRODINGER EQUATION WITH VARIOUS DOUBLE WELL POTENTIALS, Bronze Medal University Putra Malaysia, 2003.

Workshops

- Theoretical Studies Laboratory (TSL) Expository Lecture Series I, January 9, 2003, Institute of Advanced Technology Research (ITMA), UPM, Serdang, Malaysia.

- Path Integral In Chemical Physics by Prof. Yoshitaka Tanimura (Institute of Molecular Sciences, Japan).
- Quantum Gravity on Computer by Prof. Tetsuyuki Yukawa (Graduate University of Advanced Studies/KEK, Japan).

- Theoretical Studies Laboratory (TSL) Expository Lecture Series II, 22-26 May, 2003, Institute of Advanced Technology Research (ITMA), UPM, Serdang, Malaysia.

- Quantum Computing and Quantum Information.
- String Theory.
- Molecular Computing.

- Colloquium Reactor Interest Group (RIG), Exploiting RTP strategizing National Capacity & Capability, 25-26 June 2004, Hotel Marriott, Putrajaya, Malaysia.

- Theoretical Studies Laboratory (TSL) Expository Lecture Series III, 5-7 July, 2004, Institute of Advanced Technology Research (ITMA), UPM, Serdang, Malaysia.

- Hyperbolic Geometry (Prof. John Stillwell, University of San Francisco, USA).
- Deformation Quantization (Prof. Jorga Ibrahim, Institut Teknologi Bandung, Indonesia).
- Quantum Singularity (Prof. Izumi Tsutsui, KEK, Japan).