

# Ismaila B. Tijani, SMIEEE

Abu Dhabi Men's College, 19th AlSaadat Street  
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## SUMMARY OF QUALIFICATIONS

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- PhD, Engineering with focus on Unmanned System (Helicopter) Modeling and Control under a funded Research grant.
- Master's degree in Mechatronics Engineering from an accredited program, with research focus on Intelligent modeling and control.
- Bachelor's degree in Electronics and Electrical Engineering from an accredited program, and additional on-the-job training relevant to the field.
- Over 10 years of academic service in teaching and research with more than 30 publications in high quality journals/book chapters and peer review conferences.
- 4 years of industrial skills in electrical and electronics system installation and maintenance.
- Excellent teamwork skills through previous career experience, and able to easily collaborate with different groups and departments.
- Excellent programming skill, Analytical and detail-oriented, allowing for quick troubleshooting and identification of viable solutions.

## CORE COMPETENCIES

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Research and development	Embedded system programming	Modeling, simulation and Control
Teaching	Excellent MATLAB & Python skills	Applied Optimization Algorithm

## PROFESSIONAL EXPERIENCE

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**Higher Colleges of Technology** Abu Dhabi, UAE

2013 – Present

[www.hct.ac.ae](http://www.hct.ac.ae)

*Electronics Engineering Technologist*

Hired as Faculty member in Electronics Engineering technology to provide academic services and administrative support under electronics engineering department of Abu Dhabi college (ADMC), including curriculum and content development, teaching, student mentoring, assessment and applied research of local benefits:

- Review learning attainment based on ABET requirements, and recommend relevant changes to learning outcomes and assessment strategy for various digital electronics courses such as digital systems, microcontroller, embedded system and computer programming as a member of course development team (CDT).
- Course content development and delivery with learning by doing approach for digital control systems, control systems, microcontroller systems, robotics technology, signals and systems, embedded systems, computer programming, etc.
- Pre- and post- final assessment moderation of electronics engineering courses such as control systems, microcontroller systems, robotics technology.
- Students' advising on academics matters, and mentoring for both national and international competitions.
- Engagement in Research collaboration, and dissemination of the research outputs through publications in journals and conferences.
- Documentation and sharing of learning resources among colleagues.

**IIUM** Kuala Lumpur, Malaysia  
<http://www.iium.edu.my/research-management-centre>

2008 – 2012

**Research assistance**

Engaged as research assistance under several funded research projects by the university research management center, to provide support, actively conduct research and disseminate the outputs of the research through publications in journals and conferences including research proposal development, planning, specification and procurements of required materials, regular research progress presentation and documentation under the following titles:

- Artificial intelligent based friction modeling and compensation in DC- Motor driven motion control system. (July 2007 to December 2008)
- Intelligent autonomous UAV helicopter for disaster monitoring ( June 2009 to August 2012)
- A New Parametric Model Order Using Neuro-Fuzzy And Genetic Algorithm (August, 2012 to January 2013)

**IIUM** Kuala Lumpur, Malaysia  
[www.iium.edu.my](http://www.iium.edu.my)

2010 - 2012

**Part-Time Lecturer**

Employed on part-time basis to prepare course content, teach and conduct assessment of several courses:

- Mechatronics Engineering Lab I Semesters I & II 2010/2011
- Complex Analysis and Partial Differential Equation Semester II, 2010/2011
- Instrumentation and Control , Semester II, 2009/2010
- Data Mining: Semester I, 2011/2012
- Statistical Method: SEM I & II 2011/2012

**Moshood Abiola Polytechnic** Ogun state, Nigeria  
<http://www.mapoly.edu.ng/>

2003-2008

The polytechnic is a state-owned institution providing high quality technical-based tertiary education towards the awards of National (ND) and Higher National (HND) diploma in various field of study.

**Lecturer**

Hired as lecturer in the department of electrical/electronic engineering of the polytechnic to provide technical-based teaching and learning together with academic administration including course content development, student projects supervision and mentoring, assessment monitoring and review.

- Taught several courses in electrical/electronic engineering such as Electrical maintenance and repairs, electrical installation and drafting and telecommunication engineering.
- Provide mentoring and supervision for students' end of the program projects and assessments
- Served as member of faculty of engineering examination committee responsible for coordination of exam schedule, production of exam papers and distribution, and results administration.

**Dangote Flour Mills Project** Calabar / Apapa Lagos, Nigeria  
*Graduate Trainee/ Electrical Engineer*

2002 -2003

Hired initially as graduate trainee during National Youth Service program under Flour Mills construction project to work under supervision of senior engineers in various electrical installation works including cabling, piping, panels' contacts and devices fixing, electric motors installation and testing, transformer installation etc. and latter engaged as electrical engineer under another project to supervise electrical installation work including:

- High quality Industrial Electrical Installation: planning, cabling, termination and testing.
- Maintenance and monitoring of the industrial Electrical equipment's: Electric motors, control/electrical panels.

## EDUCATION

<b>International Islamic University Malaysia, Malaysia</b> PhD Eng. (Mechatronics Engineering specialization)	2012
<b>International Islamic University Malaysia, Malaysia</b> Msc Mechatronics Engineering	2009
<b>Obafemi Awolowo University, Ile Ife, Osun State, Nigeria.</b> Bachelor of Science (Hons.) Electronics and Electrical Engineering	2001
<b>The Polytechnic of Ibadan, Oyo State, Nigeria.</b> National Diploma, Electrical engineering	1996
<b>Methodist Secondary Grammar School, Elekuro, Ibadan, Oyo State, Nigeria.</b> High School Certificate (SSCE)	1992

## MEMBERSHIPS

<b>Institute of Electrical and Electronics Engineers (IEEE)</b> Senior Member	2006 - Present
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## SELECTED PUBLICATIONS

- [Journals](#)

**Ismaila B. Tijani** and A. Budiyo, (2016) "Robust Control of an Unmanned Underwater Vehicle with Parametric Uncertainty", the journal of Instrumentation, Automation and Systems, ISIUS, ISSN: 2288-582X

**Ismaila B. Tijani** and A. Budiyo, (2016). "Robust Control using an Extended H-Infinity Approach: Concepts and Application", Journal of Mathematics, Statistics and Applications, ISSN: 2288-7113, vol. 1, 2016.

**Ismaila B. Tijani** and A. Budiyo, (2016). "Control of an Unmanned Underwater Vehicles using an Optimized LQR Method", Marine and Underwater Science and Technology, ISIUS, vol. 1, no. 1, 2016.

**Ismaila B. Tijani**, Rini Akmeliawati, Ari Legowo and Agus Budiyo, (2014). "Optimization of H-infinity Controller for Unmanned helicopter control using Pareto-based Multiobjective Differential Evolution", Journal of Aerospace Engineering and Aircraft Technology, (AEAT), Article in press

**I.B. Tijani**, Rini Akmeliawati, Ari Legowo and Agus Budiyo (2014). "Nonlinear Identification of a Small Scale Unmanned Helicopter using Optimized NARX Network with Multiobjective Differential Evolution", Eng. Appl. of Artif. Intell., Elsevier, vol. 33, May, 2014 (ISI)

**Ismaila B. Tijani**, Rini Akmeliawati, Ari Legowo, Agus Budiyo, and A. G. Abdul Muthalif. "Hybrid DE and PEM Algorithm for System Identification of Small Scale Autonomous Helicopter Model", article in press, Journal of Aerospace Engineering and Aircraft Technology, (AEAT).

**I.B. Tijani** and Rini Akmeliawati, "Support vector regression based friction modeling and compensation in motion control system", Eng. Appl. of Artif. Intell., (EAAI) vol. 25, issue 5, Elsevier, 2012

**Ismaila B. Tijani**, Wahyudi M. and Talib H.H., (2010). "Adaptive Neuro-Fuzzy Inference System (ANFIS) for Friction Modeling and Compensation in Motion Control System", International Journal of Modeling and Simulation, Volume 31, No. 1, 2011, ACTA PRESS.

**Tijani I.B**, Rini Akmeliawati, Ari Legowo, Agus Budiyo, and A. G. Abdul Muthalif, 2010. "Robust Controller for Autonomous Helicopter Hovering Control", Journal of Aerospace Engineering and Aircraft Technology, vol. 83, issue 6 pp. 363-374, EMERALD. December, 2011

Sheroz Khan, AHM Zahirul Alam, Syed Masrur Ahmmad, **Tijani I. B.**, Muhammad Asraful Hasan, Lawal Wahab Adetunji, Salami Femi Abdulazeez, Siti Hana Mohammad Zaini, Siti Aminah Othman, Saman S. Khan, "Analysis and Implementation of Nonlinear Transducer Response over a Wider Response Range", Sensors & Transducers Journal, Vol. 89, Issue 3, March 2008, pp. 61-70

Mahmud Iwan Solihin, Rini Akmeliawati, **Tijani I.B.** and Ari Legowo. "Robust State Feedback Control Design via PSO-based Constrained Optimization". Accepted for Publication in the International Journal of Control and Intelligent System, ACTA PRESS

- **Book Chapters**

Momoh-Jimoh E. Salami, **Ismaila B. Tijani**, Abdussamad U. Jibia and Za'im Bin Ismail (2012). Matlab-Based Algorithm for Real Time Analysis of Multiexponential Transient Signals, MATLAB - A Fundamental Tool for Scientific Computing and Engineering Applications - Volume 1, Vasilios N. Katsikis (Ed.), ISBN: 978-953-51-0750-7, InTech, Available from: <http://www.intechopen.com/books/matlab-a-fundamental-tool-for-scientific-computing-and-engineering-applications-volume-1/matlab-based-algorithm-for-real-time-analysis-of-multiexponential-transient-signals>

**Ismaila B. Tijani**, Rini Akmeliawati, and Momoh-Jimoh E. Salami, (2011). Artificial Intelligent Based Friction Modelling and Compensation in Motion Control System. In Advances in Mechatronics, ISBN 978-953-307-373-6, available on <http://www.intechopen.com/articles/show/title/artificial-intelligent-based-friction-modelling-and-compensation-in-motion-control-system>

**Ismaila B. Tijani**, Rini Akmeliawati, Ari Legowo and A. G. Abdul Muthalif, (2011). Optimized LQR Control For 3dof Helicopter Using Multiobjective Differential Evolution (Mode). In Computational Intelligent in Robust Control, IIUM Press.

- **Conferences**

**Ismaila B. Tijani**, (2016). "Teaching Fundamental Concepts in Robotics Technology using Matlab Toolboxes", accepted for presentation in the 7th IEEE Global Engineering Education Conference, ECUCON, 2016, April 10-13th, 2016, Abu Dhabi, UAE.

**Ismaila B. Tijani**, Rini Akmeliawati and Ari Legowo, (2014). "Real-Time Implementation of H $\infty$  Controller for UAV Helicopter using MATLAB-based Embedded Programming Approach", Accepted for presentation at The 10th Asian Control Conference 2015 (ASCC 2015) 31st May - 3rd June, Sutera Harbour Resort, Sabah, Malaysia.

Salami, Momoh-Jimoh E., **Tijani, Ismaila B.**, Abdullateef, Ayodele.I.; Aibinu, Musa A., "Two level Differential Evolution algorithms for ARMA parameters estimation," Industrial Electronics and Applications (ICIEA), 2013 8th IEEE Conference on , vol., no., pp.1337-1342, 19-21 June 2013

**Tijani, Ismaila B.** Akmeliawati, Rini; Abdullateef, Ayodele.I., "Control of an inverted pendulum using MODE-based optimized LQR controller," Industrial Electronics and Applications (ICIEA), 2013 8th IEEE Conference on , vol., no., pp.1759-1764, 19-21 June 2013

Momoh-Jimoh E. Salami, **Ismaila B. Tijani**, Musa A. and Ayodele I. A., " ". In proceedings of the 5th International Conference on Mechatronics, 2013 (ICOM'13), KL, Malaysia

**Ismaila B. Tijani**, Akmeliawati, Ari Legowo, and A. G. Abdul Muthalif., "System Identification and Characterization of Parameterized State-Space Model of a Small Scale UAV Helicopter". In proceeding of the 20th international symposium on Mathematical Theory of Networks and Systems, 2012 (MTNS 2012) Melbourne Australia

**Ismaila B. Tijani**, Akmeliawati, Ari Legowo, A. G. Abdul Muthalif. And and Tun Muzamil L.A., "Matlab-based low-cost autopilot for UAV helicopter deployment", in proc. of the 8th International Conference on Intelligent Unmanned Systems (ICIUS-2012), SIM university, Singapore.

**Tijani I.B**, Rini Akmeliawati, Ari Legowo, and A. G. Abdul Muthalif. "Robust H-infinity controller synthesis using Multi-Objectives Differential Evolution Algorithm (MODE) for Two-mass-spring system". In proceedings of the 4th International Conference on Modelling, Simulation and Applied Optimization 2011, KL Malaysia. (ICMSAO'11)

**Tijani I.B**, Rini Akmeliawati, Ari Legowo, and A. G. Abdul Muthalif. "Optimization of PID controller for Flexible link system using a Pareto-based Multi-Objective differential (PMODE) evolution", In proceedings of the 4th International Conference on Mechatronics, 2011 (ICOM'11), KL, Malaysia

Momoh-Jimoh E. Salami, **Tijani I.B**, Abdussamad U. Jibia.

**Ismaila B. Tijani**, Wahyudi and Talib H.H., "AI-Based Friction Identification and Compensation for Motion Control System using ANFIS". In proceeding of the 2009 International Conference on Information Management and Engineering (ICIME 2009), April 3-5th, 2009, Kuala Lumpur, Malaysia.

**Ismaila B. Tijani**, Wahyudi M. and Talib H.H., "Friction Modeling and Compensation in Motion Control System Using Support Vector Regression (SVR)", Proceeding of the 5th International Colloquium on

Signal Processing and its Applications (CSPA 2009), Kuala Lumpur, Malaysia, on 6 &ndash; 8 March 2009.

**Ismaila B. Tijani**, Wahyudi M. and Talib H.H., &ldquo;Friction compensation in Dc-motor drive system using Adaptive Neuro-Fuzzy Inference System (ANFIS)&rdquo;, Proc. of the 2nd International Conference of Mechatronics (CIM 2009), Utm Malacca, Malaysia, June 2-3, 2009.

Wahyudi and **Ismaila B. Tijani**, &ldquo;Friction Compensation for Motion Control System using Multilayer Feed forward Network&rdquo;, Proceeding of the 5th International Symposium on Mechatronics and its Applications (ISMA08), Amman, Jordan, May 27-29, 2008

M. I. Iqbal, A. M. Aibinu, M. Nilsson<sup>1</sup>, **I. B. Tijani**, and M. J. E. Salami, &ldquo;Detection of Vascular Intersection in Retina Fundus Image Using Modified Cross Point Number and Neural Network Technique&rdquo;, Proceedings of the International Conference on Computer and Communication Engineering 2008, May, 2008

**Ismaila B. Tijani**, and Wahyudi M, &ldquo;Social and Ethical Implications of Intelligent Machines&rdquo;, Proceeding of the International Conference on Engineering Professional Ethics and Education (ICEPEE&rsquo;08), May, 2008

**Ismaila B. Tijani**, Wahyudi M. and Talib H.H., &ldquo;A Non-Parametric Friction Model for Accurate Positioning Control using v-Support Vector Regression (v-SVR)&rdquo;, Proc. of the 2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics will be held on July 14-17, 2009 in Suntec International Convention and Exhibition Center, Singapore.

Abdullateef Ayodele Isqeel, Momoh Jimoh Eyiomika Salami, **Ismaila Bayo Tijani**, Onasanya Mobolaji Agbolade. &ldquo;Novel technique for detecting electricity theft on low voltage distribution network&rdquo;, National conference on electrical and electronic engineering, Universiti Tun Hussein ONN Malaysia, Johour, Malaysia, 8-9, May, 2012.

Salami, M. J. E., **Tijani, I. B.**, Abdullateef, A. I., & Aibinu, M. A. (2013). Hybrid algorithm for NARX network parameters' determination using differential evolution and genetic algorithm. IOP Conference Series: Materials Science and Engineering, 53(1), 012062.

- [\*\*Thesis\*\*](#)

**Tijani Ismaila B. (2013)**. Multi objective Differential Evolution H&infin; Controller for Autonomous Helicopter. PhD thesis, Mechatronics Engineering Department, Faculty of Engineering, IIUM, Malaysia.

**Tijani Ismaila B. (2009)**. Friction Identification and Compensation in Motion Control System Using ANFIS and SVM. Master thesis submitted to department of Mechatronics Engineering, Faculty of Engineering, IIUM, Malaysia.

## **SELECTED PROFESSIONAL DEVELOPMENT**

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- National Instruments: Labview, cDAQ & ELVIS Training
- Professional development session Organized by HCT&rsquo;s Center of Excellence for Applied Research and Training.
- A customized 3-day teaching intensive course in faculty training and development (with a micro-teaching component) April 8th -10th, 2013 at ADMC, HCT, UAE.
- Flipped Classroom: Strategies and Tips micro course, Online course by the California University of Pennsylvania's Desire2Learn (D2L), June 3 - 21, 2013
- The 5th International Summer School on Signal Processing and its Applications (ISSSPA 2008):City Campus of University Teknologi Malaysia, Kuala Lumpur, June, 2008

## **HONORS AND AWARDS**

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- IIUM, IRIE 2012, 3 Bronze Medals
- IIUM IRIE, 2011, Bronze Medal
- IIUM, KERIE 2009 Bronze Medal Award

## **PERSONAL INFORMATION**

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Gender & Status: Male & Married.

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Current Correspondence Address

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Profile Online

LinkedIn:

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ResearchGate: [https://www.researchgate.net/profile/Ismaila\\_Tijani](https://www.researchgate.net/profile/Ismaila_Tijani)