

**Nur Biha Binti Mohamed Nafis**  
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## **EDUCATION**

- 2018-2022      Universiti Teknologi Malaysia
- Doctor of Philosophy (Electrical Engineering)
  - Title: Wideband Mosaic Frequency Selective Surface for Dichroic Surface, Absorber and Directive Antenna Applications (2018-2022)
  - Under Skim Latihan Akademik Bumiputera sponsorship (SLAB) from the Ministry of Education Malaysia (KPT) and Skim Tenaga Akademik Muda (TAM) from UPM
  - Received mobility grant of 3 months duration (9<sup>th</sup> January 2020 to 7<sup>th</sup> April 2020) from Rennes Metropole for the international mobility program (research internship) at Institut d'Électronique et des Technologies du numéRique (IETR), Université de Rennes 1, France.
  - IELTS: 6.5
- 2015-2018      Universiti Putra Malaysia
- Master of Science (Applied Physics)
  - Title: Development of a Microcontroller-based Microwave Instrumentation System for Determination of Moisture Content in Oil Palm Fruits and Ginger
  - CGPA : 3.893/4.000
  - Received “Skim Elaun Penyelidikan Siswazah Khas, S-GRA” (1/9/2017-31/1/2018)
  - Received “Skim Elaun Penyelidikan Siswazah Khas, S-GRA” (1/2/2017-31/8/2017)
  - Received “Fellowship Penyelidikan Siswazah, GRF” (1/9/2016-31/1/2017)
  - Received “Fellowship Penyelidikan Siswazah, GRF” (1/10/2015-31/8/2016)
  - Under MyMaster sponsorship from the Ministry of Education Malaysia (KPT)
- 2011-2015      Universiti Putra Malaysia
- Bachelor of Science (Hon.) Instrumentation Science (First Class)
  - CGPA : 3.879/4.000
  - Received overall best graduate student in Major Science Instrumentation award
  - Received overall best graduate student in Physics Department award
  - Received the Dean's honors achievement award (Semester 1 Sesi 2014/2015)
  - Received the Dean's honors achievement award (Semester 2 Sesi 2013/2014)
  - Received the Vice Chancellor's honors achievement award (Semester 1 Sesi 2013/2014)
  - Received the Vice Chancellor's honors achievement award (Semester 2 Sesi 2012/2013)
  - Received the Dean's honors achievement award (Semester 1 Sesi 2012/2013)
  - Received the Dean's honors achievement award (Semester 2 Sesi 2011/2012)
  - Received the Dean's honors achievement award (Semester 1 Sesi 2011/2012)
  - Under sponsorship from the Public Service Department of Malaysia (JPA)
- 2010-2011      Pusat Asasi Sains Universiti Malaya
- Overall CGPA obtained was 3.78/4.00
  - MUET: Band 3
  - Received “Bantuan Kewangan Pelajar Asasi IPTA”
- 2008-2009      MRSM Alor Gajah
- 9 A's (4A+, 4A, 1A-, 1B+) in Certificate of Education Malaysia (SPM)

## **WORK EXPERIENCE**

- Working as Demonstrators in UPM (first semester 2022/2023)
  - provide guidance and assist final year students regarding the Java programming for course PHY4602
  - provide guidance and assist third year Science Instrumentation students regarding the laboratory works by utilizing the Labview software for course PHY4303
  - provide guidance and assist second year Science Instrumentation students regarding the laboratory works by using the Digiac Instrument for course PHY3304
- Working as Postgraduate Demonstrators in UPM (2016-2018)
  - provide guidance and assist final year Science Instrumentation students regarding the laboratory works for course PHY4304 (first semester 2016/2017; first semester 2017/2018).
  - provide guidance and assist second year Science Instrumentation students regarding the laboratory works for course PHY3303 (second semester 2015/2016; second semester 2016/2017).
- Internship with Syarikat Air Melaka Berhad (2014)
  - 3 months internship under the Non-Revenue Water Department.
  - Gained hands-on experience in handling the instrument such as PRV, meter logger, leakage equipment and etc.
  - Received formal training on the basics of using supervision software for water leakage such as SMART software, District Metering Zone (DMZ ) software and etc .
- Runner/Cashier at Famous Amos (2014)
  - To take orders and deliver them to the customers in a timely manner as well as delivering high standards of customer service.
- Working as substitute teacher at SK Sungai Udang (2011)
  - Taught Mathematics, Science and Sports for standard 3, 4 and 5 students for a month.

## **COMPETITION, CONFERENCES AND WORKSHOPS**

- 2022 International Symposium on Antennas and Propagation (ISAP) conference in Sydney, Australia (31/10/2022 – 3/11/2022)
- 2022 16<sup>th</sup> European Conference on Antennas and Propagation (EuCAP) conference in Madrid, Spain (27/3/2022 – 1/4/2022)
- Participated in “UTM 3 Minutes Thesis 2022 – Category: Engineering” competition (13/2/2022 – 31/3/2022)
- Participated in “UTM 3MT Briefing & Sharing Session” workshop (20/2/2022)
- Attended Compulsory Course “Thesis Template Workshop” (4/7/2021)
- Attended Course “Thesis Writing Journey” (30/6/2021)
- Attended Course “How to Survive PHD Journey” (25/5/2021)
- Attended Workshop “2021 IEEE Malaysia AP/MTT/EMC Joint Chapter Webinar Series 5 by Assoc. Prof. Andres Alayon Glazuniv” (21/4/2021)
- Attended Course “How to Present your Research Effectively” (24/3/2021)
- Attended Course “How to Write and Publish a High Impact Paper” (10/8/2020)
- Attended Workshop “UTM Thesis Template Online Workshop” (4/8/2020)
- Attended Course “The Art of Scientific Writing” (14/7/2020)
- Attended Workshop “Incorporating Large Number of Antennas into a Terminal: Issues and Challenges by Azremi Abdullah Al-Hadi” (19/6/2020)
- Attended Workshop “Thesis Writing” (19/5/2020)
- Attended Forum “Preparing for the Post Covid 19 Looming Crisis of Graduate Unemployment” (14/5/2020)
- Attended “Research Internship: Internship program” (1/1/2020 – 31/3/2020)
- Attended “4<sup>th</sup> International Conference on Electrical, Electronic, Communication and Control Engineering 2019” conference in Melaka, as a presenter (24/11/2019 – 25/11/2019)

- 2019 International Symposium on Antennas and Propagation (ISAP) conference in Xian, China (27/10/2019 – 30/10/2019)
- Finalist for “Student Poster Competition in UTM Engineering-Industry Innovation Day 2019” (11/9/2019 – 12/9/2019)
- Attended Workshop “Practical Microstrip Antenna Design” (19/4/2019)
- Attended Workshop “Publication Workshop (Q1 Journal)” (28/2/2019)
- Attended Course “Smart English – Academic Stream by British Council” (23/7/2018 – 17/8/2018)
- Participated in “Mardi Science & Technology Exhibition – Kategori Pengetahuan” competition and won 2<sup>nd</sup> place-Silver (8/10/2018 – 10/10/2018)
- Attended Workshop “Bengkel Sehari Penulisan Tesis Pantas dan pengurusan Artikel Mendeley” (5/5/2018)
- Involved in the Research Project “Portable Monitoring and Data Logger System for Greenhouse Gasses” (13/10/2017)
- Attended Seminars “UKM Scientific Seminar for Instrumentation and Biocompatibility” (15/8/2017 – 16/8/2017)
- Attended Course “Internet of Thing (IoT) Training with ESP8266” (24/7/2017)
- Involved in the Research Project “Optimization of FFB Grading System for Oil Palm Fruits and Bunches at the Mill using Microwave Techniques” as Research Assistant (1/2/2017)
- Involved in the “Pameran Inovasi Ekspo Petanian 2016” (20/10/2016)
- Attended “Fundamental Science Congress (FSC) – Fundamental Science Basis for Technology Advancement” conference in Universiti Putra Malaysia, as a Presenter (9/8/2016 – 10/8/2016)
- Attended “Palm Oil Milling Technology Colloquium 2016 (POMTeC’16) -Disruptive Technologies for Sustainable Palm Oil Production” conference in Hotel UiTM Shah Alam, as a Presenter (30/3/2016 – 31/3/2016)
- Involved in the Research Project “Dielectric Based Measurement for Assessing Internal Quality of Selected Tropical Fruits” (1/2/2016)
- Attended “Laboratory Safety Course” programme (12/10/2015 – 13/10/2015)
- Completed the “Chinese language Proficiency Course 2013” courses (2013)
- Attended “Seminar Kerjaya dan Keusahawanan Siswa 2012” (10/5/2012)
- Attended “Kursus Permulaan Graduan (Starting School)” (2/10/2011)
- Participated in “Karnival Penyelidikan Saintifik MRSM Alor Gajah 2009” competition and won 3<sup>rd</sup> place (2009)

## **PUBLICATIONS AND AWARDS**

- N. B. M. Nafis, M. K. A. Rahim and M. Himdi, “Bandwidth Enhancement by Interconnecting Double Hexagonal Loops FSS,” *2022 International Symposium on Antennas and Propagation (ISAP)*, 2022, pp. 463-464, doi: 10.1109/ISAP53582.2022.9998697.
- N. B. M. Nafis, M. Himdi, M. K. A. Rahim, and F. Merzaki, “Mosaic Frequency Selective Surface with Wideband Response for the Optically Transparent and Absorber Applications,” in *2022 16<sup>th</sup> European Conference on Antennas and Propagation (EuCAP)*, 2022, pp. 1–5, doi: 10.23919/EuCAP53622.2022.9769471.
- N. B. Mohamed Nafis, M. Himdi, M. K. A. Rahim, O. Ayop, and R. Dewan, “Optically Transparent Tri-Wideband Mosaic Frequency Selective Surface with Low Cross-Polarisation,” *Materials (Basel)*, vol. 15, no. 2, p. 622, Jan. 2022, doi: 10.3390/ma15020622.
- Received “Best Paper Award 2021 (IEEE Malaysia AP/MTT/EMC Joint Chapter)” for Co-authored Paper Entitled High Capacity and Miniaturized Flexible Chipless RFID Tag Using Modified Complementary Split Ring Resonator”
- M. E. B. Jalil *et al.*, “High Capacity and Miniaturized Flexible Chipless RFID Tag Using Modified Complementary Split Ring Resonator,” *IEEE Access*, vol. 9, pp. 33929–33943, 2021, doi: 10.1109/ACCESS.2021.3061792.
- N. B. Mohamed Nafis, M. K. A. Rahim, O. Ayop, H. A. Majid, and S. Tuntrakool, “Characterization of

- the Koch fractal embedded hexagonal loop frequency selective surface structure for X-band application,” *Indones. J. Electr. Eng. Comput. Sci.*, vol. 20, no. 2, pp. 878–886, 2020, doi: 10.11591/ijeecs.v20.i2.pp878-886.
- Patent filing (PI2020006166 - HEXAGONAL LOOP STRUCTURE FOR FREQUENCY SELECTIVE SURFACE), filing date on 23 NOVEMBER 2020
  - N. B. Mohamed Nafis, M. K. A. Rahim, O. Ayop, F. Zubir and H. A. Majid, “A Comparison of Various Double Loops Frequency Selective Surfaces in terms of Angular Stability,” *2019 International Symposium on Antennas and Propagation (ISAP)*, Xi’an, China, 2019, pp. 1-4.
  - M. Sairi *et al.*, “Open-ended coaxial sensor for the assessment of physicochemical and dielectric properties of watermelon,” *ASM Sci. J.*, vol. 13, Special Issue 4, pp. 9–19, 2020.
  - N. Suhaime *et al.*, “Subminiature panel (SMA-P) coaxial sensor for the determination of moisture content of mango cv. Chok Anan,” *Sains Malaysiana*, vol. 48, no. 5, pp. 1111–1119, 2019, doi: 10.17576/jsm-2019-4805-20.
  - N. B. Mohamed Nafis *et al.*, “Microcontroller-based moisture meter for ginger,” *Sains Malaysiana*, vol. 47, no. 11, pp. 2831–2840, 2018, doi: 10.17576/jsm-2018-4711-26.
  - N. Suhaime *et al.*, “Microwave technique for moisture content and pH determination during pre- harvest of mango cv. Chok anan,” *Sains Malaysiana*, vol. 47, no. 7, pp. 1571–1578, 2018, doi: 10.17576/jsm-2018-4707-27.
  - Conference proceeding entitled “Dielectric based measurement system for the determination of watermelon internal quality” in National Conference on Agricultural and Food Mechanization (NCAFM) 2018 in Sarawak.

## **EXTRA CURRICULAR ACTIVITIES**

### **UNIVERSITI TEKNOLOGI MALAYSIA**

2022 - Participant in “Hospital Melaka Run & Ride 2022”

### **UNIVERSITI PUTRA MALAYSIA**

2017 - Facilitator for Workshop on Labview 2017 at UPM

2016 - Session Assistant for Fundamental Science Congress Fundamental Science Basis for Technology Advancement (FSC) at UPM

2015 - Participant in “UPM Rainbow Run 2015” in UPM

2014 - Participant in “The 13<sup>th</sup> CHINESE BRIDGE Chinese Proficiency Competition for Foreign College Students Malaysia Regional Preliminary 2014

- Participant in “Kejohanan Badminton antara UPM dan USIM” at Stadium UPM

2013 - Publicity Committee and Facilitator “Kem Gerak Ilmu Fizik Sesi 2013/2014”, Physics Club, Faculty Of Science, UPM

- Souvenir committee “Faculty of Science Annual Dinner 2013 – Malam Inspirasi Gemilang”

- Food Committee and Facilitator “Program Jejak Ilmu Kembara Minda”, Physics Club, Faculty Of Science, UPM

- Facilitator for Outreach Physics Camp 2013 at SMK Bundu Tuhan, Ranau, Sabah, Physics Club, UPM

2012 - Protocol Committee for “Karnival Filem Pendek Kolej 15”

### **MRSM ALOR GAJAH**

2009 - Treasurer of the Bowling Club

- Committee member of the Robotic club

- Participant in “Karnival Penyelidikan Saintifik MRSM Alor Gajah 2009” and won 3<sup>rd</sup> place

- 2008
- Participant in “Kejohanan TAEKWONDO MRSM Se-Malaysia Kali ke-6” at MRSM Transkrian , Pulau Pinang
  - Participant in “1<sup>st</sup> Gewinn League Taekwondo Championships 2009 ” at Stadium Badminton Cheras
  - Participant in “Taekwondo Promotion Test to Grade 3”
  - Participant in “Kejohanan TAEKWONDO MRSM Se-Malaysia Kali ke-5” at MRSM Pendang, Kedah

## **SKILLS**

- Computer Skills

<b>Computer skill</b>	<b>Year</b>	<b>Proficiency</b>
✓ MS Office Word	9	Intermediate
✓ MS Office Excel	9	Intermediate
✓ MS Office Power Point	9	Intermediate
✓ Flowcode	3	Intermediate
✓ Microwave Office	2	Intermediate
✓ COMSOL Multiphysics	2	Intermediate
✓ CST Microwave Studio	4	Intermediate

- Languages

<b>Language</b>	<b>Spoken</b>	<b>Written</b>
✓ Bahasa Melayu	10	10
✓ English	10	10
✓ Mandarin	10	10
✓ German	2	2

- Good interpersonal and communication skills
- Able to work well in teams as well as individually
- Fast learner, having the ability to grasp skills and knowledge quickly

## **REFERENCES**

- Prof. Dr Mohamad Kamal A. Rahim, Professor, Advanced RF & Microwave Research Group (ARFMRG), Faculty of Electrical Engineering, Universiti Teknologi Malaysia, 81310 UTM Johor Bahru, Johor Darul Takzim, Malaysia.  
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Email : [mkamal@fke.utm.my](mailto:mkamal@fke.utm.my)
- Prof Mohamed Himdi, Professor, Bât. 11 D, Université de Rennes 1 - Campus de Beaulieu, 263 Avenue du Général Leclerc - CS 74205, 35042 RENNES Cedex, FRANCE.  
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