

**CURRICULUM VITAE****MOHAMMAD M. N. HAMARSHEH****PERSONAL DETAILS**

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Email address : <a href="mailto:mohammad.hamarsheh@aaup.edu">mohammad.hamarsheh@aaup.edu</a>	Mobile number : + 970 599205978
Date of birth : 20 June 1975	Marital status : Married
Nationality : Palestinian	Gender : Male
Passport : 2373951	

**SUMMARY OF QUALIFICATIONS**

Supervising Many Graduate Students in the fields of	:	Cybersecurity, Machine learning, Deep Learning, Network Forensics, Machine learning, Deep Learning, network security.
Research Publications in the fields of	:	Network Forensics, Cybersecurity, Optical fiber networking systems, Computer networking, Optical CDMA communication systems, optical fiber Bragg gratings, network security.
PhD in Communications and Network Engineering	:	University Putra Malaysia (Malaysia), 2006
MSc in Computer and Comm. Engineering	:	University Putra Malaysia (Malaysia), 2003
BSc (Honours) in Electrical Engineering (Highest grade in the faculty)	:	An-najah National University (Palestine), 1999
Matriculation Certificate (One of the top 10 grades in the state)	:	Ya'bad (Palestine) , 1993

**EDUCATIONAL QUALIFICATIONS**

November 2002 – September 2006	:	<i>PhD in Communications and Network Engineering, University Putra Malaysia.</i>
<ul style="list-style-type: none"> <li>Propose a novel, simple, programmable, and effective OCDMA system based on new family of codes and describes its fundamental principles and implementation solution by: <ul style="list-style-type: none"> <li>Developing an analytical model for the proposed system.</li> <li>Developing simulation model of the proposed system.</li> <li>Conducting the performance analysis of the proposed system, and compare it with the other related research works.</li> </ul> </li> <li>Develop a continuous functional code family to be used with the proposed system using shifted sine function.</li> <li>Reduce the interference and the effect of noise on the system to improve the BER performance.</li> </ul>		

<ul style="list-style-type: none"> <li>• Do further performance improvement of DFH-OCMDA system by signal clipping.</li> <li>• Thesis title: Dynamic Frequency Hopping Optical Code Division Multiple Access Communications systems.</li> </ul>	
<i>November 2000 – January 2003</i>	<i>M.Sc. in computer and communication engineering, University Putra Malaysia.</i>
<p>Studies have been held to relax the fabrication of apodized fiber Bragg grating by using approximated apodization profiles, the title of the thesis is: Effects of Segmentation and Step Sampling on Apodized Fiber Bragg Grating.</p>	
<i>June 1994 – May 1999</i>	<i>BSc in Electrical Engineering, An-najah National University (Palestine).</i>
<p>Final year project: Microprocessor based remote controller has been designed and implemented to control any type of devices, the title of the project is: Microprocessor Based General Purpose Remote Controller.</p>	

#### **ADMINISTRATIVE WORKING EXPERIENCE**

<i>September 2016 – 20 August 2019</i>	<i>: Dean, Faculty of Engineering and Information Technology, Arab American University, Jenin, (AAUJ), Palestine</i>
<p>As dean in the faculty of engineering and IT, the responsibilities include:</p> <ul style="list-style-type: none"> <li>• Manage the faculty affairs according to the rules and regulations</li> <li>• Collaborating with other faculties</li> <li>• Proposing the graduating students' names to the dean's council</li> <li>• Writing to the president of the university</li> <li>• Any other tasks assigned by the president of the university.</li> </ul>	
<i>June 2016 – 20 August 2016</i>	<i>: Acting Dean, Faculty of Engineering and Information Technology, Arab American University, Jenin, (AAUJ), Palestine</i>
<p>As acting dean in the faculty of engineering and IT, the responsibilities include:</p> <ul style="list-style-type: none"> <li>• Manage the faculty affairs according to the rules and regulations</li> <li>• Collaborating with other faculties</li> <li>• Proposing the graduating students' names to the dean's council</li> <li>• Writing to the president of the university</li> <li>• Any other tasks assigned by the president of the university.</li> </ul>	
<i>September 2015 – 2016</i>	<i>: Head of Natural, Applied, and dental sciences Department, Faculty of graduate studies, Arab American University, Jenin, (AAUJ), Palestine</i>
<p>As a department head in the faculty of graduate studies, the responsibilities include:</p> <ul style="list-style-type: none"> <li>• Administration and development of the department.</li> <li>• Execution of all decisions of the university council, the dean's council, the faculty council, the department council, and the dean.</li> <li>• Submit, at the end of each academic year, a report to the Dean and the department council on the activities of the department.</li> <li>• Represent the department internally and externally.</li> </ul>	

<ul style="list-style-type: none"> <li>• Submit periodic reports on the work of the department to the dean.</li> <li>• Distribution of courses offered for the members of the teaching faculty in all programs in the department and in accordance with their specialties in coordination with programs coordinators.</li> <li>• Make the necessary arrangements to advice and supervise the graduate students in the department.</li> <li>• Discussing the results of the students and the list of graduating students.</li> <li>• Make the necessary arrangement for the comprehensive exam</li> <li>• Make the necessary arrangements for the thesis defense.</li> <li>• Any other tasks assigned by the Dean or the President.</li> </ul>	
<i>September 2012 –September 2014</i>	<i>: Vice Dean, Faculty of Engineering and Information Technology, Arab American University, Jenin, (AAUJ), Palestine</i>
<p>As a vice dean in the faculty of engineering and IT, the responsibilities include:</p> <ul style="list-style-type: none"> <li>• Manage the budget of the faculty</li> <li>• Assist in handling the academic activities of the faculty</li> <li>• Any other tasks assigned by the Dean or the President.</li> </ul>	
<i>June 2014 – September 2014</i>	<i>: Research visitor, Faculty of engineering, MMU University, Cyberjaya, Malaysia. Zamalah program</i>
<i>July 2013 –September 2013</i>	<i>:Acting Dean, Faculty of Engineering and Information Technology, Arab American University, Jenin, (AAUJ), Palestine</i>
<p>As acting dean in the faculty of engineering and IT, the responsibilities include:</p> <ul style="list-style-type: none"> <li>• Manage the faculty affairs according to the rules and regulations</li> <li>• Collaborating with other faculties</li> <li>• Proposing the graduating student's names to the dean's council</li> <li>• Writing to the president of the university</li> <li>• Any other tasks assigned by the President of the university.</li> </ul>	
<i>September 2010 –September 2012</i>	<i>: Head of Telecommunication Engineering Department, Arab American University, Jenin, (AAUJ), Palestine</i>
<p>As a department head in the faculty of engineering and IT, the responsibilities include:</p> <ul style="list-style-type: none"> <li>• Supervision and follow-up of the academic and administrative department affairs</li> <li>• Execution of all decisions of the university council, the dean's council, the faculty council, the department council, and the dean.</li> <li>• Submit, at the end of each academic year, a report to the Dean and the department council on the activities of the department.</li> <li>• Call for department meetings, lead the department council, sign the minutes of its meetings, and implement its resolutions.</li> <li>• Represent the department internally and externally.</li> <li>• Submit periodic reports on the work of the department to the dean.</li> <li>• Distribution of courses offered for the members of the teaching faculty in the department and in accordance with their specialties.</li> <li>• Assign an academic advisor to students from the department members.</li> </ul>	

<ul style="list-style-type: none"> <li>Any other tasks assigned by the dean or the president.</li> </ul>	
<i>December 2004 – September 2005</i>	<i>: FBG unit head, Photronix Technologies Sdn. Bhd., Cyberjaya, Malaysia</i>
<p>As a head of the FBG unit head in Photronix technologies the responsibilities include:</p> <ul style="list-style-type: none"> <li>Definition and implementation of the FBG unit production agenda, its strategic alignment to customer's needs, and the maintenance of a global customers and partners network.</li> <li>Handle the customer's inquiries and orders and make the orders available to the production lines.</li> <li>Use research outcome to direct the engineers and technicians to produce different new types of FBGs.</li> <li>Make purchase orders to materials and equipments required for the FBG unit.</li> <li>Recruit FBG unit staff when required after the approval of the company CEO.</li> <li>Plan the information technology and data base strategy of the FBG unit.</li> </ul>	
<i>November 1999 October 2000</i>	<i>: Technical Support Engineer, Palestinian Telecom (Palestine)</i>
<p>Involved in the area of computer networking. Responsibilities include,</p> <ul style="list-style-type: none"> <li>Member of the team to implement, maintain, support WAN/LAN's in 6 cities including the PCs, printers, and network accessories.</li> <li>Member of the committee to open tenders and decide on the suitable one to provide the company with the required network devices and services.</li> </ul>	

#### **ACADEMIC WORKING EXPERIENCE**

<i>September 2017 –present</i>	<i>: Associate professor, Arab American University, Jenin, (AAUJ), Palestine</i>
<p>As an associate professor in the faculty of engineering and IT, the responsibilities include in addition to the responsibilities of assistant professor:</p> <ul style="list-style-type: none"> <li>Teach graduate subjects offered and prepare their syllabus and assessment.</li> <li>Do research and participate in conferences.</li> <li>Supervise graduate students in their master thesis and research activities.</li> <li>Participate in the research groups of the university.</li> <li>Participate in evaluating and developing the graduate programs and syllabuses.</li> </ul>	
<i>September 2008 –2017</i>	<i>: Assistant professor, Arab American University, Jenin, (AAUJ), Palestine</i>
<p>As an assistant professor in the faculty of engineering and IT, the responsibilities include:</p> <ul style="list-style-type: none"> <li>Teach some of the subjects offered and prepare their exams.</li> <li>Do research and participate in conferences.</li> <li>Supervise and guide students in their research, academic, and social activities.</li> <li>Academically advise undergraduate students.</li> <li>Participate in the committees and councils of the university.</li> <li>Do the best to keep the university in its distinguished academic, research and social guiding level.</li> <li>Participate in evaluating and developing the programs and syllabuses.</li> </ul>	

<i>September 2005 – September 2008</i>	<i>Lecturer, Faculty of information science and technology, Multimedia University, Melaka, Malaysia</i>
<p>As lecturer at Multimedia university, the responsibilities include:</p> <ul style="list-style-type: none"> <li>• To engage in teaching and learning activities by making use of up-to-date and state-of-the-art technologies.</li> <li>• To prepare and make available course materials to students and Faculty in various delivery modes including MMLS. These materials include tutorials, assignments, projects and lab experiments.</li> <li>• To be academic advisor to students and to make sure the students get an all-rounded tertiary education of the highest quality.</li> <li>• To supervise undergraduate projects and to make sure that the results of the projects are of the highest standard.</li> <li>• To supervise postgraduate students (at master's and/or PhD levels).</li> <li>• To demonstrate recognition of expertise either through industrial consultancy, invitation to international meetings/conferences as a resource person, or to sit on technical committees of international/national professional bodies/agencies.</li> <li>• To be actively involved in research activities of the various Faculty Centers of Excellence that can bring income or external funding to the faculty.</li> <li>• To assist the Dean to establish links and collaborations with external bodies/agencies this will result in bringing income or funding for the faculty.</li> <li>• To use every best effort and mind to produce publications/patents/products/ services that are of international standard.</li> <li>• To actively involve in Faculty and University activities.</li> <li>• To ensure that all spending and expenditure are prudent and cost-effective.</li> <li>• To always maintain and promote the good name of the Faculty and the University.</li> <li>• To carry out other duties and functions as directed by the Dean of the Faculty.</li> </ul>	
<i>June 1999 - November 1999</i>	<i>Teacher Assistant, An-najah National University (Palestine)</i>
<ul style="list-style-type: none"> <li>• Handle tutorials and discussion classes.</li> <li>• Train students in microprocessors and circuits labs.</li> </ul>	

#### **RESEARCH WORKING EXPERIENCE**

<i>May 2005 – November 2005</i>	<i>Consultant, Photronix Technologies Sdn. Bhd., Cyberjaya, Malaysia</i>
<p>As a consultant to Photronix technologies the responsibilities include:</p> <ul style="list-style-type: none"> <li>• Use research outcome to direct the engineers and technicians to produce different new types of FBGs.</li> <li>• Help in recruiting staff when required.</li> <li>• Advice on the information technology and data base strategy of the company.</li> </ul>	
<i>May 2001 – December 2004</i>	<i>Researcher, FBG Production and research engineer, Photronix</i>

<i>(Malaysia) Sdn. Bhd, Cyberjaya, Malaysia</i>	
<p>As a researcher at Photronix (m), responsibilities include:</p> <ul style="list-style-type: none"> <li>• Conducting research on optical fiber sensing techniques.</li> <li>• Conducting research on optical fiber communication techniques.</li> </ul> <p>As product and research engineer at Photronix (m), responsibilities include:</p> <ul style="list-style-type: none"> <li>• The implementation of high intensity UV laser optical arrangements for in-fiber grating inscription.</li> <li>• Establishing optical test facilities for product characterization.</li> <li>• Handle customer orders and addressing customer needs.</li> <li>• Conducting research on opto-mechanical setup for FBG production.</li> </ul>	
<p>Key skills were obtained by working at Photronix:</p> <ul style="list-style-type: none"> <li>• Broad knowledge of fiber optics, optical physics, and optical sensing techniques.</li> <li>• Experience with fiber optic system design and assembly, and use of laboratory test equipment.</li> <li>• Hands-on experience with high-intensity UV laser systems for the fabrication fiber gratings.</li> <li>• Design and packaging of fiber gratings for sensing and device applications.</li> <li>• Implementation of electronic system control and monitoring architectures, and PC-based data acquisition techniques.</li> </ul>	
<i>November 2002 – July 2005</i>	<i>: Graduate Research Assistant, University Putra Malaysia</i>
<p>Responsibilities include,</p> <ul style="list-style-type: none"> <li>• Handling tutorials and discussion classes for undergraduate students.</li> <li>• Handling optical fiber communication laboratory sessions for final year students.</li> <li>• Actively involved in research in fiber-optic communication systems especially code division multiple access.</li> </ul>	

### **SOME TAUGHT COURSES**

<b>Level</b>	<b>Course name</b>
Maser	Information and network Security
Maser	Cybercrime
Master	Network Forensics
Master	Advanced computer networks
Master	High speed networks
Master	Networks security and management
Bachelor	Computer networks
Bachelor	Probability and random variables
Bachelor	Signals and systems.
Bachelor	Analog communication
Bachelor	Digital communications I

Bachelor	Optical communications
Bachelor	Engineering circuit analysis I
Bachelor	Digital logic design
Bachelor	Cryptography and data security
Bachelor	Information security

**SOME POSTGRADUATE SUPERVISION**

Co Supervising	Montaser Esa	
Supervising	Areej Dweeb	
Graduated February 2025	Ahmad Hamarshe	Effect of Feature Selection and Machine Learning on IDS Performance
Graduated July 2024	Rania Hethnawi	AraBERT-based Approach to Arabic Cyberbullying Detection in Facebook comments
Graduated February 2023	Aref Khalil	Software Implementation of Modified PRESENT Lightweight Cryptography for Low Power Consumption in AVR Microcontroller
Graduated July 2022	Sameer Zuhairi	Performance evaluation for multipath TCP congestion control algorithms
Graduated February 2019	Mariam Yasin	A Novel Wireless Sensor Networks Anti-Jamming Technique Based on a Hybrid DS-CDMA/OFDM/FH
Graduated February 2019	Hasan Khalil	Speed effect on the performance of vertical handover in wifi-3G network

**MEMBERSHIP AND OTHERS**

September 2024 - present		Member of the faculty of IT council, AAUJ.
September 2015 - present		Member in the engineering association membership committee, Palestine.
September 2015 – 2019.	:	Member of the faculty of engineering and IT council, AAUJ.
September 2015 – 2017	:	Member in the engineering association training council, Palestine.
September 2015 – 2016	:	Member of the faculty of graduate studies council, AAUJ.
September 2012 – 2016	:	Counselor of the IEEE AAUJ student Branch.
September 2012 – 2014	:	Member of the IEEE Palestine Chapter committee
September 2012 – 2013	:	Member of the AAUJ University council.
September 2009- 2014	:	Member of the faculty of engineering and IT council, AAUJ.

September 2011 - 2012	:	Member of the University Quality Control and Assurance committee, AAUJ.
September 2009- 2011	:	Member of the University Research committee, AAUJ.
December 2007	:	M2USIC symposium technical committee member, MMU  This symposium is held to promote R&D activities and to provide a global forum of discussion for academicians, leading technologists and engineers in multimedia technologies in the Asia Pacific region.
July 2007	:	MIT Final Project coordinator, MMU  Coordinate the Project for master students and prepare the documents, forms and flow of activities.
June-2006	:	Celcom program coordinator, MMU  Appointed by FIST Dean to Cooperate with Celcom to conduct lectures and hands on labs for staff and students on using mobile web services.

#### **SCHOLARSHIPS AND FUNDS**

2016	:	Arab American university Seed Fund (7000 JD) for Making DWDM system.
2012	:	Arab American university Seed Fund (7000 USD) for Making lensed fiber.
2008	:	“Commercial Development of Fibre Optic Sensors For Civil Engineering Applications”, Technofund, Ministry of Science, Technology and Innovation, Malaysia. Amount of (5 million RM ~ 1.6 million USD)
2006	:	Projek Perintis Penggunaan Pengesanan Fiber Optik Dalam Sistem Amaran Awal Tanah Runtuh di Taman Hillview, Ampang (Pilot Project on Using Fibre Optical Sensor In Landslide Early Warning System At Taman Hillview, Ampang), Jabatan Kerja Raya Malaysia, Agreement No.: JKR/IP/CKC/81/2006, Project Value: RM701,239.00.
2002-2005	:	Graduate Research Assistantship, University Putera Malaysia, Malaysia.
Jul-Aug 1998	:	Scholarship to attend training on computer aided design and manufacturing programming, Phosphate Mines Company, Jordan.
1994-1999	:	Scholarship for undergraduate studies, An-najah National University, Palestine.

#### **TRAINING**

September 2006	2 Days	Development of mobile content, Celcom, Melaka, Malaysia
January 2003	2 Weeks	Certified Labview programmer, National Instrument, Kuala Lumpur, Malaysia
Jul-Aug 1998	40 days	Computer aided design and manufacturing programming, Phosphate Mines Company, Aqabah, Jordan.



### **COMPUTER LITERACY**

Experience with LabView, MathCad, Matlab, and C++. General skills include the use of Windows operating system, Microsoft word, excel, outlook, PowerPoint.

### **LANGUAGES**

English, Arabic, and basics of Bahasa Malaysia.

### **RESEARCH INTERESTS**

Computer and Network Forensics, Cybersecurity, Machine learning, Deep Learning, Optical fiber networking systems, Computer networking, Optical CDMA communication systems, Passive and active optical components, optical fiber Bragg gratings, network security.

### **SOME PUBLICATIONS**

- [1] H. Younis and M. M. N. Hamarsheh, "ONOS Flood Defender: A Real-Time Flood Attacks Detection and Mitigation System in SDN Networks," *Concurr Comput*, vol. 37, no. 4–5, Feb. 2025, doi: 10.1002/cpe.8388.
- [2] Y. Salem and M. M. N. Hamarsheh, "Forensically analyzing IoT smart camera using MAoIDFF-IoT framework," *Forensic Science International: Digital Investigation*, vol. 51, p. 301829, Dec. 2024, doi: 10.1016/j.fsidi.2024.301829.
- [3] A. Hamarsheh, H. I. Ashqar, and M. Hamarsheh, *Detection of DDoS Attacks in Software Defined Networking Using Machine Learning Models*, vol. 700 LNNS. 2023. doi: 10.1007/978-3-031-33743-7\_51.
- [4] H. M. A. Hijawi and M. M. N. Hamarsheh, "Performance analysis of multi-path TCP network," *International Journal of Computer Networks and Communications*, vol. 8, no. 2, 2016, doi: 10.5121/ijcnc.2016.8213.
- [5] M. Abu-Zant and M. Hamarsheh, "A COMPARISON OF CONGESTION CONTROL VARIANTS OF TCP IN REACTIVE ROUTING PROTOCOLS MANET," *International Journal of Computer Science & Information Technology (IJCSIT)*, vol. 9, no. 6, 2017, doi: 10.5121/ijcsit.2017.9602.
- [6] M. Ameen Abu-Zant, S. Jabaren, A. Rattrout, and M. M. N. Hamarsheh, "Enhancing AODV Routing Protocol to Predict Optimal Path Using Ant Colony Algorithm in MANET," *Article in International Journal of Applied Engineering Research*, 2018, Accessed: Feb. 27, 2025. [Online]. Available: <http://www.ripublication.com>
- [7] M. Yasin, A. Yasin, A. Abu Jazar, and M. Hamarsheh, "A Novel Wireless Sensor Networks Anti-jamming Technique Based on a Hybrid DS-CDMA/ OFDM/ FH," *International Journal of Applied Engineering Research*, vol. 13, pp. 11454–11460, 2018, Accessed: Feb. 27, 2025. [Online]. Available: <http://www.ripublication.com>
- [8] H. Khalil and M. Hamarsheh, "Speed effect on the performance of vertical handover in wifi-3G network," *International Journal of Simulation: Systems, Science and Technology*, vol. 19, no. 3, 2018, doi: 10.5013/IJSSST.a.19.03.01.
- [9] N. A. Zidan and M. M. N. Hamarsheh, "Implementation of Border Gateway Protocol (BGP) Attributes," 2016, Accessed: Feb. 27, 2025. [Online]. Available: <https://www.researchgate.net/publication/299989244>
- [10] T. Eltaif, H. M. H. Shalaby, S. Shaari, and M. M. N. Hamarsheh, "Analysis of spectral amplitude coding OCDMA successive interference cancellation scheme," in *Pacific Rim*

*Conference on Lasers and Electro-Optics, CLEO - Technical Digest*, 2009. doi: 10.1109/CLEOPR.2009.5292619.

- [11] T. Eltaif, H. M. H. Shalaby, S. Shaari, and M. M. N. Hamarsheh, "Analysis of spectral amplitude coding OCDMA successive interference cancellation scheme," in *Optics InfoBase Conference Papers*, 2009.
- [12] T. Eltaif, H. M. H. Shalaby, S. Shaari, and M. M. N. Hamarsheh, "Performance enhancement of successive interference cancellation scheme based on spectral amplitude coding for optical code-division multiple-access systems using Hadamard codes," *Optical Engineering*, vol. 48, no. 4, 2009, doi: 10.1117/1.3119303.
- [13] T. Eltaif, H. M. H. Shalaby, S. Shaari, and M. M. N. Hamarsheh, "Successive interference cancellation for optical CDMA systems: Fundamental principles," *WSEAS Transactions on Communications*, vol. 8, no. 7, 2009.
- [14] T. Eltaif, H. M. H. Shalaby, S. Shaari, and M. M. N. Hamarsheh, "Performance analysis of successive interference cancellation with modified quadratic congruence and hadamard codes for optical CDMA," in *International Conference on Advanced Communication Technology, ICACT*, 2009.
- [15] T. Eltaif, H. M. H. Shalaby, S. Shaari, and M. M. N. Hamarsheh, "Performance analysis of a hybrid fiber Bragg grating-based spectral-amplitude-coding/successive interference cancellation for optical CDMA systems," *Opt Commun*, vol. 282, no. 1, 2009, doi: 10.1016/j.optcom.2008.09.054.
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- [17] T. Eltaif, H. M. H. Shalaby, S. Shaari, and M. M. N. Hamarsheh, "Performance analysis of successive interference cancellation scheme for optical CDMA systems using modified prime sequence codes," in *Proceedings of SPIE - The International Society for Optical Engineering*, 2008. doi: 10.1117/12.755327.
- [18] T. Eltaif, H. M. H. Shalaby, S. Shaari, and M. M. N. Hamarsheh, "Analytical comparison of optical code-division multiple-access systems with and without a successive interference cancellation scheme using modified prime-sequence codes," *Optical Engineering*, vol. 47, no. 9, 2008, doi: 10.1117/1.2977525.
- [19] T. Eltaif, H. M. H. Shalaby, S. Shaari, and M. M. N. Hamarsheh, "Analysis of successive interference cancellation scheme using OOC code in optical CDMA systems," in *International Conference on Advanced Communication Technology, ICACT*, 2008. doi: 10.1109/ICACT.2008.4494184.
- [20] M. M. N. Hamarsheh, M. K. Abdullah, S. Khatun, and H. M. H. Shalaby, "Fast frequency modulation optical code division multiple access communication system," *Opt Laser Technol*, vol. 39, no. 3, 2007, doi: 10.1016/j.optlastec.2005.10.002.
- [21] M. M. N. Hamarsheh, M. K. Abdullah, S. Khatun, and H. M. H. Shalaby, "Configuration design and performance analysis of a fast frequency modulation optical CDMA communication system," *Malaysian Journal of Computer Science*, vol. 19, no. 1, 2006.
- [22] M. M. N. Hamarsheh, M. K. Abdullah, S. Khatun, and H. M. H. Shalaby, "Design and analysis of a dynamic spectral encoding code-division multiple-access communication system," *Optical Engineering*, vol. 45, no. 10, 2006, doi: 10.1117/1.2359455.
- [23] M. M. N. Hamarsheh, M. K. Abdullah, S. Khatun, and H. M. H. Shalaby, "Design and analysis of synchronous dynamic frequency hopping code division multiple access communication system," *Optical Fiber Technology*, vol. 12, no. 4, 2006, doi: 10.1016/j.yofte.2006.03.001.
- [24] M. M. N. Hamarsheh, M. K. Abdullah, M. A. Mahdi, S. Khatun, and H. M. Shalaby, "Dynamic optical code division multiple access communication system analysis and

- performance enhancement by signal clipping,” in *2005 1st International Conference on Computers, Communications and Signal Processing with Special Track on Biomedical Engineering, CCSP 2005*, 2005. doi: 10.1109/CCSP.2005.4977173.
- [25] M. M. N. Hamarsheh, M. K. Abdullah, M. A. Mahdi, S. Khatun, and H. M. H. Shalaby, “Performance enhancement of a dynamic optical code division multiple access communication system by signal clipping,” in *2005 13th IEEE International Conference on Networks jointly held with the 2005 7th IEEE Malaysia International Conference on Communications, Proceedings*, 2005. doi: 10.1109/ICON.2005.1635611.
- [26] M. M. N. Hamarsheh, H. M. H. Shalaby, and M. K. Abdullah, “Design and analysis of a dynamic code division multiple access communication system based on tunable optical filter,” *Journal of Lightwave Technology*, vol. 23, no. 12, 2005, doi: 10.1109/JLT.2005.858232.
- [27] M. N. Hamarsheh and M. K. Abdullah, “Analysis of fiber Bragg gratings apodized with linearly approximated segmented Gaussian function,” in *APCC 2003 - 9th Asia-Pacific Conference on Communications, in conjunction with 6th Malaysia International Conference on Communications, MICC 2003, Proceedings*, 2003. doi: 10.1109/APCC.2003.1274333.