

CURRICULUM VITAE



ASSOC. PROF. DR. SITI BARIRAH AHMAD ANAS

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Education

1. Ph.D in Electronic Systems Engineering, 2009, University of Essex, UK
2. M.Sc. in Communication and Networks Engineering, 2003, Universiti Putra Malaysia
3. B.Eng. Computer and Electronic Systems, 1999, University of Strathclyde, UK

Areas of Interest

1. Optical Communication and Networks
2. Optical Code Division Multiple Access

Professional Qualification/ Membership/ Affiliation

1. Senior Member, Institute of Electronics and Electrical Engineers (IEEE) (#41320048)
2. Member, Optical Society of America (OSA) (#958629)
3. Graduate Member, The Institution of Engineers Malaysia (IEM) (#25476)
4. Member, Board of Engineers Malaysia (BEM)

Appointments

Position	Duration
1. Coordinator, Master by Coursework (Communication Engineering) Department of Computer and Communication Systems Engineering, UPM	1 Jan 2015 - Present
2. Associate Professor, Department of Computer and Communication Systems Engineering, UPM	1 November 2014 - present
3. Academic Coordinator, Department of Computer and Communication Systems Engineering, UPM	1 Aug 2011 – 31 Jul 2013
4. Senior Lecturer, UPM	1 Jan 2010 – 31 October 2014
5. Head, Photonics and Fiber Optics Systems Laboratory, Department of Computer and Communication Systems Engineering, UPM	1 Aug 2009 - 31 Jul 2011
6. Lecturer, UPM	15 Jul 2003 – 31 Dec 2009
7. Tutor, UPM	1 Mar 2000 - 14 Jul 2003
8. Assistant Manager, Internet Services, Telekom Malaysia Berhad	20 Sep 1999 – 28 Feb 2000

Publications

Journals (30 recent journals)

1. **Siti Barirah Ahmad Anas**, Saleh Seyedzadeh, Makhfudzah Mokhtar, and Ratna Kalos Zakiah Sahbudin, (2016) "Variable weight Khazani-Syed code using hybrid fixed-dynamic technique for optical code division multiple access system", *Optical Engineering* 55(10), 106101. **(SA)**
2. Seyedzadeh, S., Moghaddasi, M., **Anas, S.B.A.** (2016), "Effects of Fiber Impairments in Variable Weight Optical Code Division Multiple Access System". *IET Optoelectronics*. 10(6), pp. 221-226. **(SA)**

3. Shankar Duraikannan, **Siti Barirah Ahmad Anas**, Borhanuddin Mohd Ali, Zuraidah Zan, Vinesh Thiruchelvam & Pooria Varahram, (2016) "Analysis of mach zehnder modulator response to fiber dispersion in radio over fiber at 60 GHz for multigigabit wireless transmission", *Indian Journal of Pure & Applied Physics (IJPAP)*, Vol. 54, pp. 571-576. **(SA)**
4. Seyedzadeh, S., Moghaddasi, M., Anas, S.B.A. (2016), "Performance Analysis of a Variable-Weight OCDMA System Using Different Detection Schemes", *Journal of Telecommunications and Information Technology (JTIT)*, vol. 3, no. 50, pp. 50-59. **(SA)**
5. (Accepted) Majid Moghaddasi, Ambali Taiwo, Saleh Seyedzadeh, Mohammad Boroon, Salasiah Hitam And **Siti Barirah Ahmad Anas** (2016), "Performance Analysis of SAC-OCDMA In FSO Networks with Multi-Wavelength Laser Source", *Lasers in Engineering*. **(SA)**
6. Moghaddasi, M., Mamdoohi, G., Noor, A.S.M., Hitam, S., **Anas, S.B.A.** (2016), "Evaluation of Optical Code Division Multiple Access (OCDMA) Encoding Techniques for Free Space Optics (FSO)", *Lasers in Engineering*, 33 (4-6), pp. 229-245. **(SA)**
7. Majid Moghaddasi, Ghazaleh Mamdoohi, Ahmad Shukri Muhammad Noor, Mohd Adzir Mahdi and **Siti Barirah Ahmad Anas**, (2015) "Development Of SAC-OCDMA in FSO with Multi-Wavelength Laser Source", *Optics Communication* 356282–289 (ISI Quartile: Q2) **(SA)**
8. Sahbudin, R.K.Z., Chun, T.T.K., **Anas, S.B.A.**, Hitam, S., Mokhtar, M. (2015), "SAC-OCDMA over hybrid FTTx free space optical communication networks", *Journal of Telecommunications and Information Technology*, Issue 2, Pages 52-58.
9. M. Moghaddasi, S. Seyedzadeh, S. Shokri, M. R. Hassan, K. Shameli and **S. B. A. Anas**, (2014) "Investigation of Stimulated Brillouin Scattering Effect on Different Modulation Formats", *Research Journal of Applied Sciences, Engineering and Technology*, vol. 8, no. 4, pp. 481-487. **(SA)**
10. M. I. Md Ali, S. A. Ibrahim, M. H. Abu Bakar, A. S. M. Noor, **S. B. Ahmad Anas**, A. K. Zamzuri, M. A. Mahdi (2014) "Tapered-EDF based Mach-Zehnder interferometer for dual wavelength fiber laser" *IEEE Photonics Journal*, vol. 6, no. 5, pp. (ISI Quartile: Q1)
11. Seyedzadeh, S., Mahdiraji, G.A., Sahbudin, R.K.Z., Abas, A.F., **Anas, S.B.A.**, (2014) "Experimental demonstration of variable weight SAC-OCDMA system for QoS differentiation", *Optical Fiber Technology*, vol. 20, no. 5, pp. 495-500. (ISI Quartile: Q2) **(SA)**
12. Kakaee, M.H., Seyedzadeh, S., Adnan Fadhil, H., **Ahmad Anas, S.B.**, Mokhtar, M., (2014) "Development of Multi-Service (MS) for SAC-OCDMA Systems", *Optics and Laser Technology*, vol. 60, pp. 49 – 55. (ISI Quartile: Q2)
13. Hitam, S., Loong, G.C., Sahbudin, R.K.Z., Mokhtar, M., **Anas, S.B.A.**, Mahdi, M.A. (2014), "Performance analysis in multi-channels ellipsoid structure wireless optical communications", *Optik*, vol. 125, Issue 24, pp. 7182-7185.
14. Seyed Mohammad Saleh Seyedzadeh Kharazi, Ratna Kalos Zakiah Sahbudin, Ahmad Fauzi Abas and **Siti Barirah Ahmad Anas** (2013), "Fiber Non-linear Effects in Multiple-wavelengths Optical CDMA Systems", *IETE Technical Review*, vol. 30, no. 2, pp. 149 – 156. (ISI Quartile: Q3) **(SA)**
15. Sahbudin, R.K.Z., Kamarulzaman, M., Hitam, S., Mokhtar, M., **Anas, S.B.A.** (2013), Performance of SAC OCDMA-FSO communication systems, *Optik*, vol. 124, no. 17, pp. 2868-2870. (ISI Quartile: Q4)
16. Seyed Mohammad Saleh Seyedzadeh Kharazi, Ghafour Amouzad Mahdiraji, Ratna Kalos Zakiah Sahbudin, Ahmad Fauzi Abas and **Siti Barirah Ahmad Anas** (2012), "Effects of Fiber Dispersion on the Performance of Optical CDMA Systems", *Journal of Optical Communication*, vol. 33, no. 4, pp.311 – 320. **(SA)**
17. **S.B.A. Anas**, F.H. Hamat, R.K.Z. Sahbudin and S. Hitam (2012), Hybrid fiber-to-the-x and free space optics for high bandwidth access networks, *Photon Netw Commun*, Vol. 23, Issue 1, pp. 33–39. (ISI Quartile: Q4) **(SA)**
18. Hitam, S., Suhaimi, S.N., Noor, A.S.M., **Anas, S.B.A.**, Sahbudin, R.K.Z. (2012), Performance analysis on 16-channels wavelength division multiplexing in free space optical transmission under tropical regions environment, *Journal of Computer Science*, vol. 8, no. 1, pp. 145-148.

19. R. Sonee Shargh, M.H. Al-Mansoori, **S.B.A. Anas**, R.K.Z. Sahbudin, A.K. Zamzuri and M.A. Mahdi, (2011), Improvement of comb lines quality employing double-pass architecture in Brillouin-Raman laser, *Laser Physics Letters*, Vol. 8, No. 11, pp. 823–827. (ISI Quartile: Q1)
20. R. Sonee Shargh, M.H. Al-Mansoori, **S.B.A. Anas**, R.K.Z. Sahbudin and M.A. Mahdi, (2011), OSNR enhancement utilizing large effective area fiber in a multiwavelength Brillouin-Raman fiber laser, *Laser Physics Letters*, Vol. 8, No. 2, pp. 139–143. (ISI Quartile: Q1)
21. Woon Wen Xing, **Siti Barirah Ahmad Anas**, Fatin Hamimi Hamat@Mustafa, Salasiah Hitam, Ahmad Shukri Muhammad Noor, Seyyed Mohamad Saleh Seyyedzadeh, (2011), Triple-Play to The Last Mile Over Free Space Optics, *Jurnal Teknologi Keluaran Khas*, Vol. 55, pp. 233–240. **(SA)**
22. R.K.Z. Sahbudin, M.K. Abdullah, M. Mokhtar, S. Hitam and **S.B. Ahmad Anas**, (2011) Design and Cost Performance of Decoding Technique for Hybrid Subcarrier Spectral Amplitude Coding-Optical Code Division Multiple Access System, *Journal of Computer Science* 7 (10): 1525-1531.
23. Salasiah Hitam, Tan Kah Lin, Ratna Kalos Zakiah Sahbudin, Makhfudzah Mokhtar, **Siti Barirah Ahmad Anas** and Aduwati Sali, (2011), Digital Visual Schedule and Training System for Centre of Autistic Children, *Journal of Applied Sciences*, vol. 11, No. 5, pp. 788-796.
24. R. K. Z. Sahbudin, M. K. Abdullah, M. Mokhtar, **S. B. A. Anas**, S. Hitam, (2011) Performance of Subcarrier- OCDMA System with Complementary Subtraction Detection Technique, *World Academy of Science, Engineering and Technology* vol., 75, pp. 1422-1427.
25. **S.B. Ahmad Anas**, T.J. Quinlan and S.D. Walker, “Service differentiated drop code unit for metro ring optical networks,” *IET Optoelectron.*, vol. 4, no. 1, pp. 46-50. Feb. 2010. (ISI Quartile: Q3) **(SA)**
26. **SB Ahmad Anas**, MK Abdullah, M Mokhtar, SA Aljunid and SD Walker, ‘Optical domain service differentiation using spectral-amplitude-coding, *Opt. Fiber Technol.*, vol. 15, no. 1, pp. 26-32, Jan. 2009. (ISI Quartile: Q2) **(SA)**
27. W.J.M. Al-galbi, M. Mokhtar, A.F. Abas, **S.B.A. Anas**, R.K.Z. Sahbudin, “Solving the near-far problem in dynamic frequency hopping-optical code division multiple access using power control”, *Journal of Computer Science*, vol. 5, no. 6, pp. 413-418, Jun. 2009.
28. **S. B. Ahmad-Anas**, M. K. Abdullah, M. Mokhtar and S. D. Walker, “Multiple access interference elimination with enhanced chromatic dispersion tolerance in SAC OCDMA”, *IEICE Electron. Express*, Vol. 5, No. 16, pp.617-62, 2008. (ISI Quartile: Q4) **(SA)**
29. S. Kabir, M.K. Abdullah, S. Khatun, **S.B.A. Anas** and M.A. Mahdi, “Performance evaluation of a buffer based CSMA/CD protocol for single channel optical Ethernet LAN”, *Opt. Fiber Technol.*, vol. 11, no. 4, pp. 378-387, 2005. (ISI Quartile: Q2)
30. S. A. Aljunid, Z. Zan, **S. B. Ahmad Anas**, M. K. Abdullah, “A New Code for Optical Code Division Multiple Access Systems”, *Malaysian Journal of Computer Science*, Vol. 17. No. 2, Dec. 2004, pp. 30-39.

Conference Proceedings (30 recent Conference Proceedings)

1. Idriss, Y., Sahbudin, R.K., Hitam, S., **Ahmad Anas, S.B.**, “Performance comparison of indoor VLC system employing SAC-OCDMA technique”, 2016 IEEE 6th International Conference on Photonics, ICP 2016, Kuching, Sarawak, Malaysia, March 2016.
2. Moghaddasi, M., Sahbudin, R., Mokhtar, M., **Anas, S.B.A.**, “Investigation of circulation noise effect on SAC-OCDMA system with ring topology”, 2016 IEEE 6th International Conference on Photonics, ICP 2016, Kuching, Sarawak, Malaysia, March 2016.
3. Mas Izyani Md Ali, Mohd Adzir Mahdi, Ahmad Shukri Muhammad Noor, **Siti Barirah Ahmad Anas**, Muhammad Hafiz Abu Bakar, “Stable dual-wavelength fiber laser utilizing tapered-EDF as comb filter in hybrid Raman-EDF gains”, IEEE 5th International Conference on Photonics, Kuala Lumpur, Malaysia, ICP2014, 2-4 September 2014.
4. Majid Moghaddasi, Salasiah Hitam, Ahmad Fauzi Abas, Ahmad Shukri Muhammad Noor, **Siti Barirah Ahmad Anas**, “OCDMA Multi Service with Zero Cross Correlation Code in Free Space Optics”, IEEE 5th International Conference on Photonics, Kuala Lumpur, Malaysia, ICP2014, 2-4

September 2014.

5. Majid Kaka, Saleh Seyedzadeh, Shawnim Essa, **Siti Barirah Ahmad Anas**, Makhfudzah Mokhtar, "Proposal of Multi-Service (MS) Code to Differentiate Quality of Services for OCDMA Systems", IEEE 5th International Conference on Photonics, Kuala Lumpur, Malaysia, ICP2014, 2-4 September 2014.
6. Amin Noura, Ghazaleh Mamdoohi, Mohd Hanif Yaacob, Muhammad Hafiz Abu Bakar, **Siti Barirah Ahmad Anas**, "Optimization of Hybrid Brillouin-Raman-EDF Amplification Fiber Laser in Long Distance FBG Sensor System", IEEE 5th International Conference on Photonics, Kuala Lumpur, Malaysia, ICP2014, 2-4 September 2014.
7. S. Seyedzadeh, R.K.Z. Sahbudin, AF. Abas, **S.B.A Anas**, "Weight Optimization of Variable Weight OCDMA for Triple-Play Services", IEEE 4th International Conference on Photonics, Melaka, Malaysia, ICP2013, 28-30 October 2013.
8. M. H. Kakaee, S. Seyedzadeh, H. A. Fadhil, **S. B. Ahmad Anas**, and M. Mokhtar "New Dynamic Technique for SAC-OCDMA System", IEEE 4th International Conference on Photonics, Melaka, Malaysia, ICP2013, 28-30 October 2013.
9. A. Noura, S. Seyedzadeh, **S.B.A. Anas** "Simultaneous Vibration and Humidity Measurement Using a Hybrid WDM/OCDMA Sensor Network", IEEE 4th International Conference on Photonics, Melaka, Malaysia, ICP2013, 28-30 October 2013.
10. R. Sonee Shargh, M. H. Al-Mansoori, **S. B. A. Anas**, R. K. Z. Sahbudin, M. H. Abu Bakar¹, and M. A. Mahdi, "Effect of Raman Pump Direction on Conventional Multiwavelength Brillouin-Raman Fiber Laser", IEEE 3rd International Conference on Photonics, Penang, Malaysia, ICP2012, 1-3 October 2012.
11. M.H. Kakaee, S.M.S Seyedzadeh Kharazi, **S.B.Ahmad Anas**, H.A. Fadhil, R.K.Z. Sahbudin and M. Mokhtar, "Performance Analysis of Hybrid SACOCDMA/WDMA System Using Random Diagonal Code", IEEE 3rd International Conference on Photonics, Penang, Malaysia, ICP2012, 1-3 October 2012.
12. Seyedzadeh Kharazi, S.M.S. Amouzad Mahdiraji, G. Sahbudin, R.K.Z. Mokhtar, M. Abas, A.F. **Anas, S.B.A.**, "Performance analysis of a variable-weight OCDMA system under the impact of fiber impairments", IEEE 2nd International Conference on Photonics, Kota Kinabalu, Sabah, Malaysia, ICP2011, 17-19 October 2011.
13. Md Ali, M. I.; Musa, B.; Noor, A.S.M.; **Anas, S. B. A**; Zamzuri, A.K; Mahdi, M. A., "Characterization of tapered-erbium doped fiber in co-propagating amplifier", IEEE 2nd International Conference on Photonics, Kota Kinabalu, Sabah, Malaysia, ICP2011, 17-19 October 2011.
14. Mohamad, H.; Yusoff, N. Md.; Abu Bakar, M.H.; Shahabuddin, N.S.; Abdul-Rashid, H.A.; Yusoff, Z.; Ismail, A.; **Ahmad Anas, S. B.**; Mahdi, M.A., "Ultrashort pulse laser generation in ring-type EDFL using carbon-nanotube saturable absorber", IEEE 2nd International Conference on Photonics, Kota Kinabalu, Sabah, Malaysia, ICP2011, 17-19 October 2011.
15. L.M. Sheng, C. K. Ng, **S. B. Ahmad Anas**, M. Mokhtar, B. Mohd Ali, M. F. Abas, M. I. Saripan and S.J. Hashim, "A New Fast Handoff Mechanism for Mobile Wimax", 4th International Symposium on Broadband Communications, Melaka, Malaysia, ISBC093, 11-14 July 2010.
16. M. Thakur, T. Quinlan, **S. B. Ahmad Anas**, D. Hunter, S. Walker, D. Smith, A. Borghesani, D. Moodie, "Multi-Wavelength 3.42 Gbps UWB Radio-over-Fibre Demonstration Featuring a Reflective Electro-Absorption Transceiver and Low-Cost DWDM Grid VSELS", OFC/NFOEC'09, California, USA, OTuJ4, March 22-26, 2009.
17. M. Thakur, T. Quinlan, **S. B. Ahmad Anas**, D. Hunter, S. Walker, D. Smith, A. Borghesani, D. Moodie, "Triple-Format, UWB-WiFi-WiMax, Radio-over-Fibre Co-Existence Demonstration Featuring Low-Cost 1308/1564nm VCSELS and a Reflective Electro-Absorption Transceiver", OFC/NFOEC'09, California, USA, OTuJ2, March 22-26, 2009.
18. W. T. P'ng, M. K. Abdullah, S. Khatun, **S. B. Ahmad-Anas**, and S. Shaari, "A novel protection scheme for Ethernet PON FTTH access network", Proc. SPIE Vol. 7009, 700918 (Mar. 5, 2008)
19. Abdullah MK, Aljunid SA, **Anas SBA**, Sahbudin RKZ, and Mokhtar M, 'A New Optical Spectral



Amplitude Coding Sequence: Khazani-Syed (KS) Code', ICICT 2007, 7-9 March, Dhaka, Bangladesh, pp. 266-278.

20. S.J. Hashim, C. K. Ng, **S. B. Ahmad Anas**, M. Mokhtar, B. Mohd Ali, A. F. Abas and M. I. Saripan, "A new backhaul architecture for fast and seamless mobile WIMAX handoff utilizing ETHERNET over WDM", World Engineering Congress 2010, Conference on Electrical and Electronic Technology, 2nd – 5th August 2010, Sarawak, Malaysia.
21. Naimullah, B.S.S., Hitam, S., Shah, N.S.M., Othman, M., **Anas, S.B.A.**, Abdullah, M.K., "Analysis of the effect of haze on free space optical communication in the Malaysian environment", IEEE Proc. of MICC, May 2007, pp. 391-394.
22. S. Hitam, M.T. Cha, **S.B.A. Anas**, W.A.W. Adnan, M.K. Abdullah, "Double Carrier Modulation/Differential Detection for Multi-Gigabits-per-second, Free Space Optical", NCS2005 proceeding, Krabi, Thailand, April 2005.
23. P'ng, W.T., Abdullah, M.K., Khatun, S., **Ahmad-Anas, S.B.**, Shaari, S., "Protection Networking of Ethernet PON FTTH Access Network", IEEE Proc. Of LFNM, Sept. 2005, pp. 180-183.
24. Cheah, C.L., Abdullah, M.K., **Anas, S.B.A.**, Mahdi, M.A., Ali, B.M., "An adaptive error correction scheme for SDH based wavelength division multiplexed optical networks", IEEE Proc. of MICC, 6 pp., Nov. 2005.
25. Cheah, C.L, **Anas, S.B.A.**, Ali, B.M., Mahdi, M.A., Abdullah, M.K., "A SDH based adaptive error correction scheme for WDM networks", IEEE Proc. of AVFOP, pp. 15-16, Sept. 2005.
26. B.S.S.Naimullah, S.Hitam, **S.B.A. Anas**, M.K.Abdullah, "Analysis of the Effect on Rainfall Rate for Free Space Optical Communication in Malaysia Enviroment", ROVISP05 International Conference, Penang, July 2005.
27. Khabir, S., Khatun, S., Abdullah, M.K, Mahdi, M.A., **Anas, S.B.A.**, "Throughput analysis of an enhanced CSMA/CD based single channel fast Ethernet optical LAN", IEEE Proc. of ICACT, Feb. 2005, South Korea, pp. 1102-1106.
28. Hanafi, M., Abdullah, M.K., Shaari, A.Z., **Anas, S.B.A.**, Shaari, S., "Development of a variable fiber optic coupler", IEEE Proc. of MICC, 4 pp., Nov. 2005.
29. Zan, Z., Aljunid, S.A., Yaacob, M.H., **Anas, S.B.A.**, Abdullah, M.K., Shaari, S., "Design of parallel and serial configurations of encoder and decoder modules for spectral amplitude coding (SAC) optical code division multiple access (OCDMA) based on fiber Bragg gratings (FBGs)", IEEE Proc. of MICC, 5 pp., Nov. 2005.
30. M. S. Z. Abidn, A. W. Naji, M. H. Almansoori, **S. B. A. Anas**, M. H. Yaacob, F. R. M. Adikan and M. A. Mahdi, "Optimization of Remotely Pumped EDFA Location in Repeaterless Transmission Systems", Proceeding of IEEE LEOS Malaysian Conference on Photonics, pp. 30 – 33, 2004.

Books

1. **Siti Barirah Ahmad Anas**, Service Differentiation in the Optical Domain: A Physical Layer Approach Using Optical Code Division Multiple Access Techniques, LAP Lambert Academic Publishing, Saarbrucken, 2010. (ISBN: 978-3-8433-8512-1)

Chapter in Books

1. M.K. Abdullah, S.A. Aljunid, M.D.A. Samad, **S.B.A. Anas**, R.K.Z. Sahbudin and M. Mokhtar, "Unified KS-code," in Encyclopedia of Multimedia Technology and Networking, 2nd ed., M. Pagani (Ed.) (Information Science Reference, Hershey, New York) Vol. III O-Z, pp. 1473-1479, 2009. (ISBN 978-1-60566-014-1)

Research Grants

Project Leader

No	Project Title	Amount	Duration	Source of Fund
1.	Double Carrier Modulation (DCM) for Free Space Laser (FSL) Communication	183,000	2004 - 2006	IRPA (MOSTI)

2.	Fibre impairment effects on variable weight OCDMA Systems	118,000	2010 - 2012	RUGS (UPM)
3.	Design and Development of Service Differentiated ROADM Based on OCDM	187,100	2012 - 2014	Sciencefund (MOSTI)
4.	Mitigating Fiber Nonlinearity Using Nonlinear Companding Technique in CO-OFDM	15,000	2014 - 2016	Geran Putra IPS (UPM)
5.	Optical CDMA Provision in Wireless Optical Communication Networks Using Spectral Amplitude Coding	15,000	2014 - 2016	Geran Putra IPS (UPM)

Project Member

No	Project Title	Amount	Duration	Source of Fund
1.	Double Carrier Modulation (DCM) for Free Space Laser (FSL) Communication	183,000	2004 - 2006	IRPA (MOSTI)
2.	Fundamental Studies Of Metal Nanoparticles For Surface Plasmon Resonance	44,000	2010 - 2012	FRGS (MOHE)
3.	Derivation and Analysis of Correlation Bound based on Gaussian Mixture Models	32,000	2011 - 2013	RUGS (UPM)
4.	Development of Semiconductor Optical Amplifier (SOA) functionality for all-optical wavelength conversion and noise reduction	152,800	2012 - 2014	Sciencefund (MOSTI)
5.	Multi-transceiver Free Space Optical 3-Dimensional Structures for The Last- Mile	150,240	2012 - 2014	Sciencefund (MOSTI)
6.	Highly Reliable and Robust Security in WSN for Military Application	189,000	2012 - 2014	Sciencefund (MOSTI)
7.	Development of High Dimensionality Carrierless Amplitude Phase (CAP) Modulation in Radio over Fiber (RoF) for Access and In-Home Networks.	149,900	2013 - 2016	FRGS (MOHE)
8.	Compensating the nonlinearity effects in all-optical orthogonal frequency-division multiplexing (AO-OFDM) systems	97,750	2013 - 2016	ERGS (MOHE)

Awards/Recognition

Num	Name of awards	Title	Award Authority	Award Type	Year
1.	Anugerah Pekerja Cemerlang	-	Universiti Putra Malaysia	University	2011
2.	Anugerah Pekerja Cemerlang	-	Universiti Putra Malaysia	University	2005
3.	Bronze medal	Web-based real-time ECG & heartbeat monitoring	Invention and Innovation Exhibition 2005 (PRPI'05)	University	2005



4.	Bronze medal	Enhanced protocol of single channel CSMA/CD LAN.	Invention and Innovation Exhibition 2005 (PRPI'05)	University	2005
5.	Gold medal	Optical fiber duplexer module. Utilizing DCM/Diff-D technique	International Exhibition – Ideas – Inventions – New Products, IENA 2004, Nuremberg, German	International	2004

Professional Services/Consultation

No	Year	Title	Authority	Amount
1.	August 2010 – August 2011	Telecommunication Fundamentals Short Course	ZOHL Consultancy Sdn. Bhd.	
2.	July 2011	Optical Communication Training: Fiber-to-the-Home	CCSE Department	

Students Supervision

PhD (Main Supervisor)

No.	Name	Title	Status
1.	Majid Moghaddasi	OCDMA over Free Space Optics	Graduated
2.	Kharina Khairi	Repeaterless Optical Transmission	On-going
3.	Amin Noura	Optical Sensor Networks	On-going
4.	Shankar Duraikannan	Optical Orthogonal Frequency Division Multiplexing	Thesis Submitted

MS with thesis (Main Supervisor)

No.	Name	Title	Status
1.	Seyyed Mohammad Saleh Seyyedzadeh Kharrazi	Performance Analysis of Variable Weight Optical Code Division Multiple Access System	Graduated
2.	Mustafa Qays Olewi	Vibration Effects in 2D-OCDMA System	On-going
3.	Rawa Muayyad	Bidirectional transmission of quadruple play services in PON	On-going
4.	Intan Nor Sazwani Shamsuddin	Experimental demonstration of reconfigurable OCDMA encoder -decoder pair	On-going
5.	Hafiz Muhammad Noor	Radio over Fiber deploying polarization multiplexing	On-going
6.	Mostafa Nouman	OFDM Passive optical networks	On-going