2008 Joint 6th National Conference on Telecommunication Technologies (NCTT) & 2nd Malaysia Conference on Photonics (MCP)

Putrajaya, Malaysia
26-28 August 2008

IEEE Catalog Number: CFP08534-PRT
ISBN: 978-1-4244-2214-2

TABLE OF CONTENT

Theme A - Photonics Technology

ID	Paper	Page
9	**Channel Spacing Effects on XPM Crosstalk in WDM Networks for Various Fiber Types** *Yasin M. Karfaa Karfaa (UKM)*	1
19	**Modeling of 980/1550nm PLC WDM Directional Coupler** *Alvin W. P. Law, W. Y. Chong, F. R. M. Adikan & H. Ahmad (UM)*	6
35	**The Development of Computer Controlled Multicolor Illumination Network Using RGB based Light Emitting Diodes** *Pn Rozeha A. Rashid, Mohd Rozaini Abd Rahim, Mohd Adib Sarijari & Esther Cheng (UTM)*	12
45	**Water Quality Measurement Using Transmittance and 90° Scattering Techniques Through Optical Fiber Sensor** *Ahmad Fairuz Omar (OUM) & Mohd Zubir Matjafri (USM)*	17
47	**Enhanced Brillouin-Erbium Fiber Laser with Brillouin Pump Pre-amplification Technique** *Mohammed Al-Mansoori & Mohammed Al-Mansoori (UPM)*	22
55	**A Novel Exponential Structure for Silicon Waveguides for Increasing Net Optical Raman Gain** *Mohammadreza Khorasaninejad (University of Waterloo, Canada) & Amir Hashemi (Amirkabir University of Technology, Iran)*	25
57	**A High Performance Concave Silicon Raman Laser** *Mohammadreza Khorasaninejad (University of Waterloo, Canada) & Hassan Kaatuzian (Amirkabir University of Technology, Iran)*	29
58	**Investigation of Stimulated Brillouin Scattering for the Generation of Millimeter Waves for Radio over Fiber System** *Norizan Mohamed Nawawi (UniMAP) & Sevia Mahdaliza Idrus (UTM)*	33

59	**Modeling of a Series-Shunt Bootstrapping Pre-amplifier Circuit for Free Space Optics** *Arnidza Ramli, Sevia Mahdaliza Idrus, Abu Sahmah Mohd Supa'at (UTM) & Siti Sara Rais (UTHM)*	37
62	**Optical Power Limitations in Spectral-Amplitude-Coding Optical Code-Division Multiple-Access Systems Due to Stimulated Raman Scattering** *Zaineb A. T. Al-Qazwini, Mohamad K. Abdullah & Makhfudzah Mokhtar (UPM)*	42
68	**Double-Pass Chirped Bragg Grating Erbium-Doped Fiber Amplifier: Improved Transmission Distance** *Md Zaini Jamaludin, Fairuz Abdullah (UNITEN), Mohd Khazani Abdullah, Mohd Adzir Mahdi (UPM), Faidz Abdul Rahman (MMU)*	45
69	**Performance of Optical CDMA by Considering Nonlinear Stimulated Brillouin Scattering Effects in Optical Fiber** *Fuad Hatim (UKM)*	48
75	**Design and Fabrication of Dilute Nitride VCSEL by using DBR Mirror** *Mohammed Arif Hasnayeen, Marinah Othman & Faidz Abdur Rahman (MMU)*	52
82	**3×2.5Gbit/s Optical Absolute Polar Duty Cycle Division Multiplexing Transmission Syststem** *Amin Malekmohammadi (UPM)*	56
83	**30Gb/s Absolute Polar Duty Cycle Division Multiplexing In Dispersion Uncompensated Optical Systems** *Amin Malekmohammadi (UPM)*	60
86	**Study of Rain Attenuation Consequence in Free Space Optic Transmission** *Abdul Rahman Kram, Ir.Anuar Mat Safar, Prof.Dr Syed Alwee Aljunid & Junita Mohd Nordin (UniMAP)*	64
92	**Duty Cycle Division Multiplexing (DCDM): A New Electrical Multiplexing Technique for High Speed Optical Communication Systems** *Mohamad Khazani Abdullah, Ghafour Amouzad Mahdiraji, Amin Malek Mohammadi, Makhfudzah Mokhtar & Ahmed Fauzi Abas (UPM)*	71
93	**Analysis of the Transmission Performance of Optical Signals based on Duty Cycle Division Multiplexing (DCDM)** *Ghafour Amouzad Mahdiraji, Mohamad Khazani Abdullah, Ahmed Fauzi Abas, Makhfudzah Mokhtar & Amin Malek Mohammadi (UPM)*	75

95	**An Experimental Study on S-band Depressed Cladding EDFA** *Siti Aida Daud, S D Emami, Hairul Azhar Abdul Rashis, M R Mokhtar & Z Yusoff (MMU)*	79
114	**Encoder and Decoder Modules of OCDM System Using Fiber-Bragg Grating (FBG) for Metro Area Network** *Shariffah Zarihan Syed Zaharim Helmi & Syed Alwee Aljunid Syed Junid (UniMAP)*	82
118	**A Study of Optimal Mean Photon Number Analysis in Quantum Key Distribution (QKD)** *Lizal Iswady Ahmad Ghazali, Wan Azizun Wan Adnan, Makhfudzah Mokhtar, Ahmad Fauzi Abas, Mohd. Adzir Mahdi. (UPM)*	86
130	**Static Electric Field-Induced Modification of Coherent Nonlinear Response of Exciton-Polariton in the Semiconductor Microcavities** *Suryadi (MIMOS)*	91
132	**Testing Single-Photon Wave Packets by Hong-Ou-Mandel interference** *Piotr Kolenderski & Konrad Banaszek (MIMOS)*	94
134	**Deterministic Minimum Disturbance Measurement on a Polarization Qubit** *So-Young Baek, Yoon-Ho Kim (Pohang University of Science and Technology, Korea) & Yong Wook Cheong (Seoul National University, Korea)*	98
135	**Plug and Play configuration using two modulator on single Mach-Zehnder Interferometer** *Norshamsuri Ali, Salim Ali Al-Kathiri & Suhairi Saharudin (MIMOS)*	100
137	**Four Phase States Eavesdropping with no Quantum Interaction [137]** *Abdulla Abdulqader Al-Attas, Wajdi Al-Khateeb (IIUM) and Suhairi Saharudin (MIMOS)*	105

Theme B - RF and Microwave Engineering

ID	Paper	Page
12	**Analysis of Angle Diversity in MIMO Channel** *Muhammad Rafie' Che Rose, Prof. Dr. Mohamad Kadim Suaidi, Mohamad Zoinol Abidin Abd. Aziz, Muhammad Faiz Abd. Kadir & Dr. Mohamad Kamal Abd. Rahim (UTM)*	110
13	**Design of 1x2, 1x4, and 2x2 Dual Polarization Microstrip Array Antenna** *Mohd Syaiful Redzwan Mohd Shah, Mohamad Zoinol Abidin Abdul Aziz (UTEM) & M.Kamal A.Rahim (UTM)*	113
14	**The Study of Different Impedance Meander Line for Microstrip Antenna Design** *Dalila Misman, Mohamad Zoinol Abidin Abd. Aziz, Mohd Rafie Che Rose, Mohd. Syaiful Redzwan Mohd Shah & Mohd Faiz Abdul Kadir (UTeM)*	117
16	**Design Simulation of Multiple Differential Transceiver at 2.0 GHz for Third Generation Mobile Communication System** *Muhammad Syahrir Johal, Mohamad Kadim Suaidi, Abdul Rani Othman & Hairulisam Mohd Dom (UTeM)*	121
17	**Polarization Diversity in Wireless MIMO Systems** *Muhammad Faiz Abdul Kadir, Mohamad Kadim Suaidi, Mohamad Zoinol Abidin Abdul Aziz & Muhammad Rafie' Che Rose (UTEM)*	128
28	**MIMO Channel Characterization and Optimization** *Zakiah Daud, Mohamad Kadim Suaidi & Mohamad Zoinol Abidin Abdul Aziz (UTEM)*	132
29	**5-6 GHz Front End Low Noise Amplifier** *Mohd Hafizan Che Halim, Mohamad Zoinol Abidin Abdul Aziz, Prof Madya Abdul Rani Othman, Mohd Saiful Azri Samingan@Sahingan & Asreen Anuar Abdul Aziz (UTeM)*	136
33	**Phase Range Analysis of Reflect Array Patch Cells Printed on Liquid Crystal Subtrate** *Yusof Ismail & Ahmad Faizal M.Zain (UTHM)*	140
34	**Low Cross-Polarization Broadband Microstrip Patch Antenna** *Mohammad Tariqul Islam (UKM)*	144

39	**The Effects of Slotline on Directivity and Return Loss Characteristics of a Planar UWB Antenna** *Mohammad Hadi Badjian & Chandan Kumar Chakrabarty (UNITEN)*	148
40	**Effects of Varied Stub Width on UWB Bandpass Filters with Notched Bands** *Sanjay Devkumar (UNITEN)*	152
53	**Small Rectangular Parasitic Plane with Diamond Patch Antenna for WLAN Application** *Saidatul Norlyana Azemi, Norra Shiella Razali, Azremi Adullah Al-Hadi, Ping Jack Soh & M.I I brahim (UTeM)*	157
96	**Using Lowpass and Highpass Filters to Form UWB Bandpass Filter** *Sanjay Devkumar (UNITEN)*	162
98	**An Impulse UWB Patch Antenna with Integrated Bandpass Filter** *Mohammad Hadi Badjian & Chandan Kumar Chakrabarty (UNITEN)*	166
99	**Circuit Element Modeling Scheme for a Hairpin Resonator by Using EDA Tool** *Goh Chin Hock, Chandan Kumar Chakrabarty, Sanjay Devkumar & Mohammad Hadi Badjian (UNITEN)*	170
107	**Multi-wavelength Brillouin-Erbium Fiber Laser Utilizing a Fiber Bragg Grating Filter with Intra-Cavity Pre-Amplified Brillouin Pump** *Mohd Narizee Mohd Nasir, Zulfadzli Yusoff, Mohammed Haydar Al-Mansoori, Hairul Azhar Abdul Rashid & Pankaj Kumar Choudhury (MMU)*	174
108	**Comparing Long Wavelength and Short Wavelength Vertical-Cavity Surface-Emitting Lasers** *David Yap, Y.H. Leow (MMU), Johnny Koh & S.K. Tiong (UNITEN)*	178

Theme C - Data Communication and Networking

ID	Paper	Page
20	**Constructing Routing Tree Centralized Scheduling using Multi-Channel System in 802.16d [20]** *Ali Al-Hemyari, Chee Kyun Ng, Nor Kamariah Noordin, Alyani Ismail & Sabira Khatun (UPM)*	**183**
21	**The Need of Traffic Scheduling In Optical Packet Switched Network with QOS Provision [21]**** *Go Yun Ii & Kaharudin Dimyati (UM)*	**188**
38	**PHY and MAC, Cross-Layer optimization and Design** *Alaa Baker, Chee Kyun Ng & Nor Kamariah Noordin (UPM)*	**192**
46	**Effective Design Of Optical Code-Division Multiple Access Network Using Random Diagonal Codes [46]**** *Hilal Adnan Fadhil, Syed Alwee Aljunid Bin syed Junid & R.Badlishah Ahmad (UniMAP)*	**198**
48	**Premeditated Policies To Resource Reservation For Prioritized Traffic In Multi Hop Ad Hoc Networks** *Muhammed Sulleman Memon, Niaz Ahmed Memon (Quaid e Awam University of Enggineering, Pakistan) & Manzoor Hashmani (Mehran University of Enggineering, Pakistan)*	**202**
50	**Novel Approach in MATLAB Memory Management** *Nuwan Gamage & Vineetha Kalavally (Monash, Malaysia)*	**208**
74	**Quality Of Service For Packet Video Over P2p Network Using Active Measurement** *Muhammad Affan Joni, Dr. Sharifah Hafizah Syed Ariffin & Haikal Satria (UTM)*	**213**
77	**Comparison of Switching Cost for Ring Optical Backbone Networks** *Parthiban Rajendran (Monash, Malaysia)*	**218**
78	**Performance Analysis of H.264 Video over Error-prone Transmission Environment** *Yakubu Baguda & Norsheila Fisal (UTM)*	**222**

90	**Performance Analysis of Sub Carrier Multiplexed System for Radio over Fiber Technology [90]**** *Mahyuddin Arsat, Sevia Mahdaliza Idrus (UTM) & Norizan Mohamed Nawawi (UniMAP)*	**226**
94	**Simulation Study on Bandwidth Utilization of DiffServ Traffic using ns-2** *Norashidah Md Din, Hazlinda Hakimie, Nagaletchumi Balasubramaniam & Zulkifli Ishak (UNITEN)*	**230**
104	**A New RZ/NRZ Bipolar Code [104]**** *Mahfudzah Mokhtar, Ahmad Fauzi Abas (UPM), T Quilan & Stuart Walker (University of Essex, UK)*	**234**
109	**Statistical Analysis of The Pulse Propagation in Free Space Optic [109]** *David Yap, Mohd. Tahir M.A.E (MMU), Johnny Koh & S.K. Tiong (UNITEN)*	**238**
113	**Wireless Home Security and Automation System Utilizing ZigBee based Multi-hop Communication** *Mohd. Adib Sarijari, Rozeha A.Rashid, Mohd.Rozaini A.Rahim & Nur Hija Mahalin (UTM)*	**242**
119	**VoIP over Myren** *Mohd.Taufiq Norhizat, Nurul Azira Mohd Zorkifli, Hazlinda Hakimie & Norashidah Md Din (UNITEN)*	**246**
124	**Random Early Detection Improved by Progressive Adjustment Method** *Guan-Yi Su & Chian C. Ho (National Yunlin University of Science and Technology)*	**250**

Theme D – Telecommunication: Network Design, Architecture and Instrumentation

ID	Paper	Page
2	**Adaptive Smooth-Windowed Wigner-Ville Distribution for Digital Communication Signals** *Jo Lynn Tan & Ahmad Zuri Sha'ameri (UTM)*	**254**
3	**Signal Analysis and Classification of Digital Communication Signals using Adaptive Smooth-Windowed Wigner-Ville Distribution** *Jo Lynn Tan & Ahmad Zuri Sha'ameri (UTM)*	**260**
10	**Evaluation of Modulation Coding Schemes For Adaptive HF Data Communication System** *Abd Rahim Mat Sidek & Ahmad Zuri Sha'ameri (UTM)*	**267**
25	**Coverage Degree in Mobile Nodes Wireless Sensor Network [25]** *Samer Bani Awwad, Nor Kamariah Noordin & Mohd. Fadlee A.Rasid (UPM)*	**273**
32	**Digital Modulation Identification in terms of Software Defined Radio for Traffic Management System [32]** *Ahmed Bakhraiba, Sabira Khatun, Nor Kamariah Noordin, Alyani Ismail (UPM) & Borhanuddin Mohd Ali (MIMOS)*	**278**
37	**Maximizing the Energy Efficiency in MS-MAC Using a Dynamic Approach [37]** *Nesa Mouzehkesh (UPM)*	**284**
41	**Energy Efficiency in MAC 802.15.4 for Wireless Sensor Networks [41]**** *Mohammad Hossein Fotouhi Ghazvini, Maryam Vahabi , Mohd Fadlee A. Rasid & Raja Syamsul Azmir Raja Abdullah (UPM)*	**289**
42	**The Impact of Modulation Adaptation and Power Control on PAPR Clipping Technique in OFDM of 4G Systems** *Ibrahim Al-kebsi (UKM)*	**295**
56	**Performance Analysis of Signal-to-Noise Ratio Estimators in AWGN and Fading Channels** *Lenin Gopal (Curtin University of Technology, Malaysia) & Moh Lim Sim (MMU)*	**300**

61	**Equalizer Sharing in Wireless Communications: Simulation Study** *Mohd Fadzil Ain, Mutamed Khatib, Syed Idris Syed Hassan (USM) & Farid Ghani (UniMAP)*	**305**
63	**Performance Evaluation of Multi-Layered Space Frequency Time Codes for MIMO-OFDM Systems [63]** *Samir Al-Ghadhban (King Fahd University of Petroleum and Minerals , Saudi Arabia)*	**309**
67	**AND Subtraction Detection Scheme Performance Analysis Based On Enhanced Double Weight code** *Ihssan Hmud (UKM)*	**314**
71	**WCDMA Network Planning and Optimisation** *Ken Ting Yeo (Alcatel-Lucent Malaysia) & Teck Chai Tiong (Curtin University of Technology, Sarawak)*	**317**
73	**Implementing Wireless Monitoring for Substations on the Field Programmable Logic Arrays (FPGA)** *Razali Jidin, Yasmin Syuhada Harmin, Asraf Mohamed Moubark & Tze Yee Lim (UNITEN)*	**323**
76	**Network Dimensioning and Optimisation using Aurora** *Aravinthan Srinivasan & Parthiban Rajendran (Monash, Malaysia)*	**327**
80	**4G Wireless Technology: Will it be Feasible for Malaysian Operators?** *Yasangi Randeni & Parthiban Rajendran (Monash, Malaysia)*	**333**
85	**GA-Based QoS Route Selection Algorithm for Mobile Ad Hoc Networks** *Jiwa Abdullah, M.Y. Ismail, N.A. Cholan & S.A. Hamzah (UTHM)*	**339**
91	**LBAODV: A New Load Balancing Multipath Routing Algorithm for Mobile Ad hoc Networks [91]** *Amir Darehshoorzadeh (Iran University of Science and Technology, Iran), Nastooh Taheri Javan & Mehdi Dehghan (AmirKabir University of Technology, Iran)*	**344**
101	**Dual-tone Multifrequency Signal Detection using Support Vector Machines [101]** *Jawad Nagi, Sieh Kiong Tiong, Keem Siah Yap & Syed Khaleel Ahmed (UNITEN)*	**350**

102	**Embedded Parallel Distributed Artificial Intelligent Processors for Adaptive Beam Forming in WCDMA System [102]** *Prajindra Sankar Krishnan, Sieh Kiong Tiong, Siaw Paw Johnny Koh (UNITEN) & Fook Weng David Yap (MMU)*	**356**
103	**Hybrid Artificial Intelligence Algorithm for Call Admission Control in WCDMA Network [103]** *Yee Kai Tee, Sieh Kiong Tiong & Siaw Paw Johnny Koh*	**362**
111	**A Binary Approach for Range-Free Localization [111]**** *Yahya Forghani & Sayed Ehsan Yasrebi (Toos Institute of Higher Education, Iran)*	**367**
117	**An Improved Version of Persian/Arabic Text Steganography Using "La" Word** *Mohammad Shirali-Shahreza & M. Hassan Shirali-Shahreza (Sharif University of Technology)*	**372**
120	**Cooperative Sensing under Limited Band Control Channel in Cognitive Radio Networks** *Rania Mokhtar, Sabira Khatun, Abdulrhman Ramli (UPM) & Borhanuddin Ali (MIMOS)*	**377**
122	**Simulation Study Of UWB Interference Effects on each WLANa Frequency Band [122]** *Azlina Abdullah, Yanti Erana Jalil, Ayuniza Ahmad, Sharifah Azwa Shaaya & Mohd Suhaimi Sauti (UNITEN)*	**381**
123	**Simulation Study Of UWB Interference Effects on GSM 900 System [123]** *Azlina Abdullah, Sharifah Azwa Shaaya, Yanti Erana Jalil, Ayuniza Ahmad & Intan Shafinaz Mustafa (UNITEN)*	**386**
125	**Performance Evaluation of Vertical Handoff in Fourth Generation (4G) Networks Model** *'Aini Syuhada Md Zain, Mahamod Ismail, Wan Nur Suryani Firuz Wan Ariffin, Hasliza A Rahim & Aznor Hanah Abdul Halim (UniMAP)*	**392**
126	**WiMAX Capacity Estimation Through Channel Characteristic Simulation [126]** *Keng Harng Goh, Tiong Sieh Kiong, Johnny Koh (UNITEN), David Yap (MMU)*	**399**