

No.	Project Title	Project Leader	Institution	Research Cluster
1	Hardware and Software Design of Body Sensor Network Device	Wong Kiing-Ing	Curtin Universiti of Technology Sarawak, Sarawak Campus, Malaysia	ICT
2	Development of Ontology for Healthcare Information Integration	Sellappan A/L Palaniappan	Malaysia University of Science and Technology	ICT
3	Development of a next-generation Malaysian Tourism Information System (next-MTIS)	Nor Adnan bin Yahaya	Malaysia University of Science and Technology	ICT
4	Intelligent cancer prediction system (ICPS) using data mining techniques	C A T H Tee	Malaysia University of Science and Technology	ICT
5	Development of Decision Support System for University Resource Management Using System Dynamics Modeling Approach	Siti Fariza Mohd Dahlan	Malaysia University of Science and Technology	ICT
6	Semantic-based Multimedia Access to Malay Cultural Heritage	Christopher Messom	Monash University Sunway Campus Malaysia	ICT
7	Omnidirectional Surveillance System For Fossil Power Plant	Wong Wai Kit	Multimedia University	ICT
8	Design of the Cancelable Touchless Fingerprint Verification System	Hiew Bee Yan	Multimedia University	ICT
9	Design and Performance Analysis of Architecture and Contention Resolution in Optical Packet Switching network.	Tan saw Chin	Multimedia University	ICT
10	Modeling And Intervening Under Uncertainty For Conceptual Change: A Bayesian Decision-Theoretic Approach	Ting Choo Yee	Multimedia University	ICT
11	A Bayesian Classification Approach for Threats Identification in Network Intrusion Detection Domain	Khor Kok Chin	Multimedia University	ICT

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12	Robust and Reusable Synchronization Schemes for Object-Oriented Software	Nathar Shah Bin Packier Mohammad	Multimedia University	ICT
13	Development of Palm n' Go Personal Access Control Device with Integrated Touch-less Palm-based Biometrics Authentication System	Goh Kah Ong Michael	Multimedia University	ICT
14	ICT in Support of Crisis Response in Malaysia: An Application of Knowledge Management Systems	Murali Raman	Multimedia University	ICT
15	ICT and Human Capital Impact on East Asia and OECD Economic Growth	Elsadig Musa Ahmed	Multimedia University	ICT
16	Development and Evaluation of Awareness Components for Translation Groupware	Lim Tek Yong	Multimedia University	ICT
17	Development of Biometrics Surveillance System using Partial Face Information	TEO CHUAN CHIN	Multimedia University	ICT
18	The Applicability of Information Technology Governance among Malaysian Companies	Tan Khong Sin	Multimedia University	ICT
19	Development of an Integrated Mechanical CAD/CAE/PDM and Design for Six Sigma System (DFSS) for Product Design in New Product Development	Cher Dong Theng	SIRIM Berhad	ICT
20	Neural Network Systems in benchmarking Customer Satisfaction and Services Quality in Malaysian Commercial and Islamic Banks: Manifestation of computational modeling of cognitive processes and behavior	Khong Kok Wei	Sunway University College	ICT
21	Design and Modeling of Peer-to-Peer Overlay Network for Peer-Casting Media Streaming Applications	Ahmad Tajuddin Samsudin	Telekom Research & Development Sdn Bhd	ICT
22	Free-space Optic (FSO) Links for Quantum Key Distribution (QKD)	Wajdi Al-Khateeb	Universiti Islam Antarabangsa Malaysia	ICT

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23	Vision-Based Road Detection for Autonomous Intelligent vehicles	Othman O. Khalifa	Universiti Islam Antarabangsa Malaysia	ICT
24	The development of a multimedia symbolic package to enhance biotechnology (immunology) education using a Computer Algebra System (CAS)	Yuzita Yaacob	Universiti Kebangsaan Malaysia	ICT
25	Development of Multiband Microstrip and MEMS Antenna for WLAN Applications	Badariah binti Bais	Universiti Kebangsaan Malaysia	ICT
26	Novel Microstrip Antenna Design for RFID Application	Mohammad Tariqul Islam	Universiti Kebangsaan Malaysia	ICT
27	The Development of a Rapid Prototyping Facility called Direct UV Writing for the Fabrication of Novel Integrated Optical Devices	Faisal Rafiq Mahamd Adikan	Universiti Malaya	ICT
28	Expert Pedagogical System	SELVA RANEE SUBRAMANIAM	Universiti Malaya	ICT
29	A Mobile Compliant Web-Based Comparative Analysis Decision Support System	Por Lip Yee	Universiti Malaya	ICT
30	Competency assessment for J-Qaf Teacher using Graphical Method focusing on Kolgomorov Smirnov Test.	Mohd Sahar bin Yahya	Universiti Malaya	ICT
31	WhiteSteg: An Improved Scheme for Information Hiding Using Text Steganography	Por Lip Yee	Universiti Malaya	ICT
32	Enhancement of Classic Heterogeneous Scheduling Algorithms in Grid Environments	Ang Tan Fong	Universiti Malaya	ICT
33	Quality of Service in Mobile Ad-hoc Network	Phang Keat Keong	Universiti Malaya	ICT

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34	Mobile Application for Arabic JQAF Teacher Self-Improvement Using Linear Predictive Coding (LPC) Focusing on Listening & Speaking Module	Hassan Basri Awang Mat Dahan	Universiti Malaya	ICT
35	Web based Online Application for Arabic JQAF Teacher Self Improvement using Hybrid Fuzzy Support Vector Machine Algorithm focusing on Reading & Writing Module	Abdul Ghapor Hussin	Universiti Malaya	ICT
36	Designing A Dedicated Hardware Of Real-Time Speech-To-Text Engine For Jawi Character In Supporting JQAF Learning Module Using DWT Coding	Zaidi Razak	Universiti Malaya	ICT
37	Development Of A Universal Modulator For Software Defined Radio Communication System	Mohd Fareq bin Abd Malek	Universiti Malaysia Perlis	ICT
38	Development of Smart Surveillance System for Real time Object Tracking	Hasliza	Universiti Malaysia Perlis	ICT
39	Development Of Pose Invariant Biometric Identification System Based On Human Face	Kenneth Sundaraj	Universiti Malaysia Perlis	ICT
40	Development and Study of Sensor Network for Intelligent Robot in Daily Human Life	Mohamad Arinal Abd Halim	Universiti Malaysia Perlis	ICT
41	Development of A Computer-based Stuttering Assessment System	Ooi Chia Ai	Universiti Malaysia Perlis	ICT
42	Prototype Development of an Evolutionary Intelligence Engine Using Pareto Neuro-Ensembles for Computer Game AI	Jason Teo Tze Wi	Universiti Malaysia Sabah	ICT
43	Negotiating Agents for Online Auctions	Patricia Anthony	Universiti Malaysia Sabah	ICT
44	Development of an Intelligent Genetic-Based Data Summarisation Technique for Spatial Multi-Relational N-ary Database.	Rayner Alfred	Universiti Malaysia Sabah	ICT

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45	Affordable Long Range Wireless Connectivity for Rural Communities	Khairuddin Bin Ab. Hamid	Universiti Malaysia Sarawak	ICT
46	An Optimized and Weighted Genetic Algorithm approach for PAPR Reduction in Large Sub-Carriers OFDM Systems adopting Peak Reduction Carriers	Tan Chong Eng	Universiti Malaysia Sarawak	ICT
47	A CSI-based Throughput and QoS Enhancement Scheme for TCP over Cooperative Broadband Wireless Networks	Tan Chong Eng	Universiti Malaysia Sarawak	ICT
48	Development of an Intelligent Web Based Tour Planner System	Muhammad Suzuri bin Hitam	Universiti Malaysia Terengganu	ICT
49	Design And Development Of An Integrated Tunable Laser And Amplifier	Ahmad Fauzi Abas	Universiti Putra Malaysia	ICT
50	Web usage mining techiques for improving web document prediction	Norwati Mustapha	Universiti Putra Malaysia	ICT
51	Hybrid Remotely-pumped EDFA/Raman Amplifier for L-band Transmission Window	Mohd Adzir Mahdi	Universiti Putra Malaysia	ICT
52	Development of an Oil Palm Fresh Fruit Bunches (FFB) Image Analyser	Abdul Rashid bin Mohamed Shariff	Universiti Putra Malaysia	ICT
53	Vertical Fast Handoff Technique in MIPv6-Enabled Heterogeneous Networks	Sabira Khatun	Universiti Putra Malaysia	ICT
54	Nonlinear Optical Parametric Amplification in Raman Oscillator	Mohd Adzir Mahdi	Universiti Putra Malaysia	ICT
55	Efficient Arithmetic and Pairing Evaluation in Elliptic Curve Cryptography	Mohamad Rushdan bin Md Said	Universiti Putra Malaysia	ICT

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56	Knowledge Management In Collaborative Software Maintenance Environment	Rusli Abdullah	Universiti Putra Malaysia	ICT
57	Development of an Automatic Classification Tool for Extrapulmonary Tuberculosis	M. Iqbal Saripan	Universiti Putra Malaysia	ICT
58	Developing a cellular automata-based planning decision support system	Taher bin Buyong	Universiti Putra Malaysia	ICT
59	A Classification and Visualization Approach for Knowledge Management (KM-ClaVis) of a Software Engineering Interest Group	Shahida Binti Sulaiman	Universiti Sains Malaysia	ICT
60	Parallel graph-based algorithm for protein tertiary structure matching	Rosni binti Abdullah @ Mustafa	Universiti Sains Malaysia	ICT
61	The development of a new technique for automated fingerprint enhancement and restoration.	Ghazali bin Sulong	Universiti Teknologi Malaysia	ICT
62	Development of an Automated Redocumentation Process to Support Software Development and Evolution	Suhaimi Ibrahim	Universiti Teknologi Malaysia	ICT
63	Development of Change Impact Analysis Tool to Support Software Maintenance	Suhaimi Ibrahim	Universiti Teknologi Malaysia	ICT
64	Computational Method for Protein Sequence Annotation Using Gene Ontology and Intelligent Techniques	Muhamad Razib bin Othman	Universiti Teknologi Malaysia	ICT
65	The Development of Clustering System for Protein Tertiary Structure Prediction Using Machine Learning Algorithms	Rohayanti binti Hassan	Universiti Teknologi Malaysia	ICT
66	Friend-Assisted Secure Autonomous Mobile Ad Hoc Networks	Shukor Abd Razak	Universiti Teknologi Malaysia	ICT

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67	Mobile Ad Hoc Network Multi Hop Routing Algorithm	Shukor Abd Razak	Universiti Teknologi Malaysia	ICT
68	The Development of an Automated Tool to Support Effective Requirement Change Propagation	Nor Bahiah binti Ahmad	Universiti Teknologi Malaysia	ICT
69	Development of Multi-agent Software Copyright Code Clone Detection Tool Using Machine Learning Algorithms	Ali Selamat	Universiti Teknologi Malaysia	ICT
70	Design Framework of Multi Agent Software Based on Patterns	RADZIAH BINTI MOHAMAD	Universiti Teknologi Malaysia	ICT
71	Development of a novel hybrid approach for Offline Handwriting Recognition of Guesseed Words in Dedicated Environment	Dzulkifli bin Mohammad	Universiti Teknologi Malaysia	ICT
72	Development of Multi-agent Crawling Systems for Mapping of Web E-business Networks Using Machine Learning Algorithm	Md Hafiz bin Selamat	Universiti Teknologi Malaysia	ICT
73	Bioeffects Reduction In Wireless Biosensor Network (Wbsn) For Physiological Monitoring	Liza Abdul Latiff	Universiti Teknologi Malaysia	ICT
74	An Intelligent User Agent For Assessing The Trustworthiness of e-Commerce Website	Ab Razak Che Hussin	Universiti Teknologi Malaysia	ICT
75	A Bio-Inspired Algorithm For Optimizing Accuracy In Decision Making	Halina Binti Mohamed Dahlan	Universiti Teknologi Malaysia	ICT
76	The Development of Low Cost 3D Visualization Tools for MRI Data	Daut bin Daman	Universiti Teknologi Malaysia	ICT
77	Generating Private and Public Keys from Biometric Fingerprint Data Using Fuzzy Extractors	Dzulkifli bin Mohammad	Universiti Teknologi Malaysia	ICT

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78	Optimization of Fuzzy Modeling Using Parallel Bioinspired Algorithm for Breast Cancer Classification	Hishammuddin Asmuni	Universiti Teknologi Malaysia	ICT
79	Development of an Online Personal E-Jotter for Synchronous Communication.	Nazli binti Yahaya	Universiti Teknologi Malaysia	ICT
80	Design and Development of Millimeter-Wave Antenna for HAPS application	Mohamad Kamal bin Abdul Rahim	Universiti Teknologi Malaysia	ICT
81	3D Scene Management to Reduce the Computational Cost of an Immersive Driving Simulator System	Mohd Shahrizal bin Sunar	Universiti Teknologi Malaysia	ICT
82	Development of High-Level Design-for-Testability Method and Digital Testing System for Education	Ooi Chia Yee	Universiti Teknologi Malaysia	ICT
83	Security in Wireless Ad Hoc Sensor Network	Sharifah Hafizah Syed Ariffin	Universiti Teknologi Malaysia	ICT
84	Dynamic Spectrum Access Management System in Cognitive Radio Wireless Sensor Networks	Sharifah Kamilah bt Syed Yusof	Universiti Teknologi Malaysia	ICT
85	Development of Secure Mobile Ad-Hoc Network (MANET) with Critical Nodes Detection and Intrusion Detection System	Abdul Hanan bin Abdullah	Universiti Teknologi Malaysia	ICT
86	A Chaotic-Based Encryption Scheme for Scalable Video Coding	Rashidah Binti Kadir	Universiti Teknologi Malaysia	ICT
87	Development of Multimode Interference (MMI) coupler for variable-ratio power splitter and optimized switching	ABU SAHMAH MOHD SUPA'AT	Universiti Teknologi Malaysia	ICT
88	Antennas for On-Body Communication Systems	Muhammad Ramlee Kamarudin	Universiti Teknologi Malaysia	ICT



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89	Photonic Antenna for WLAN Backhaul Networks	Razali bin Ngah	Universiti Teknologi Malaysia	ICT
90	Magnetic Resonance Image Classification and Detection using Soft Computing techniques and its FPGA implementation	Mohd Fauzi Othman	Universiti Teknologi Malaysia	ICT
91	Smart Antenna System Using Cascaded Butler Matrices	Sharul Kamal bin Abdul Rahim	Universiti Teknologi Malaysia	ICT
92	Human Memory System as Artificial Life For Web Browser Caching	Siti Mariyam binti Hj. Shamsuddin	Universiti Teknologi Malaysia	ICT
93	Cross-Language Plagiarism Detection Tool Using Fuzzy-Swarm Summarization and Data Fusion	Naomie binti Salim	Universiti Teknologi Malaysia	ICT
94	Authentication System of Printed Document Using Watermarking Technique	Subariah binti Ibrahim	Universiti Teknologi Malaysia	ICT
95	The Development of Hand Gesture Interpreter for Standard Malay Text	Abd Manan bin Ahmad	Universiti Teknologi Malaysia	ICT
96	Design and Implementation of High Performance Vision Based Barcode Reader System for Mobile Application	Syed Abdul Rahman bin Syed Abu Bakar	Universiti Teknologi Malaysia	ICT
97	Secure Server Monitoring Using Covert Channel Technique	Md Asri bin Ngadi	Universiti Teknologi Malaysia	ICT
98	An Information Security Policy Framework for Malaysian Higher Learning Institutions	Zuraini Ismail	Universiti Teknologi Malaysia	ICT
99	Development Of Digital Audio Information Hiding Systems For High-Embedding-Capacity Applications	Azizah Bt. Abdul Manaf	Universiti Teknologi Malaysia	ICT

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100	Digital Watermarking And Steganography Systems For Information Security	Azizah Bt. Abdul Manaf	Universiti Teknologi Malaysia	ICT
101	Printed Document Integrity Verification System	Mazleena binti Salleh	Universiti Teknologi Malaysia	ICT
102	GPU-Based Real-Time Terrain Visualization System	Muhamad Najib Bin Zamri	Universiti Teknologi Malaysia	ICT
103	Development of An Integrated Adaptive Web Caching and Prefetching (Pre-Caching) in Mobile Application	Sarina binti Sulaiman	Universiti Teknologi Malaysia	ICT
104	Iterative Nearest Neighbour Based Clustering for Crime Patterns Identification	Siti Zaiton Mohd Hashim	Universiti Teknologi Malaysia	ICT
105	The Development of Clustering System for Rice Yield Prediction in Precision Farming Using Machine Learning Techniques	Ruhaidah binti Samsudin	Universiti Teknologi Malaysia	ICT
106	Ontology Extraction Tool for Quran and Hadith using Fuzzy-Swarm Algorithms	Naomie binti Salim	Universiti Teknologi Malaysia	ICT
107	Dynamic Spectrum Access Management System (DSAM) for High-Altitude Platform (HAP) Networks	Sharifah Kamilah bt Syed Yusof	Universiti Teknologi Malaysia	ICT
108	Development of Web-based Repository and Simulation System to Support Robotics E-Learning	Azlan bin Mohd. Zain	Universiti Teknologi Malaysia	ICT
109	Development of Ubiquitous Early Intervention Support System for Down Syndrome Children under 6 years old	YEO KEE JIAR	Universiti Teknologi Malaysia	ICT
110	Development of Wireless Hybrid Smart Sensor Network for Monitoring and Controlling Weather and Soil Factors on E-Agriculture	Kamalrulnizam bin Abu Bakar	Universiti Teknologi Malaysia	ICT

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111	Wireless Body Area Network in Medical Application Environment	Sharifah Hafizah Syed Ariffin	Universiti Teknologi Malaysia	ICT
112	The Development of Real Time Virtual Reality Games Based on Human Haptic Emotion for Artificial Life Simulation	Nadzari Shaari	Universiti Teknologi Malaysia	ICT
113	Iris Biometric for Identity Document	Puteh binti Saad	Universiti Teknologi Malaysia	ICT
114	Intelligent Fusion of Retrieval Techniques for Chemical Databases	Naomie binti Salim	Universiti Teknologi Malaysia	ICT
115	The Development of Spatial Data Indexing Technique for Spatial Database Management System in Mobile Geographical Information Systems (GIS) Applications.	Mohd Daud bin Kasmuni	Universiti Teknologi Malaysia	ICT
116	Distributed GRID Resource Selection and Optimization Using Intelligent Planning for Multiagent e-Science Application	Rosely Kumoi	Universiti Teknologi Malaysia	ICT
117	Development of Fuzzy Based Simulation System in Human-involved Assembly Lines Balancing	Muhammad Ikhwan Jambak	Universiti Teknologi Malaysia	ICT
118	Developing an Effective Model of Newborn Hearing Screening Based on Innovative ABR Technology	Sheikh Hussain bin Shaikh Salleh	Universiti Teknologi Malaysia	ICT
119	Fundamental Study of Optical Waveguide Coupling for Development of a Novel Optical Access-Card System	Mohd Kamil Abd Rahman	Universiti Teknologi MARA	ICT
120	Assessment Engine For Mathematical Expressions	Arsmah Ibrahim	Universiti Teknologi MARA	ICT
121	Intelligent Decision Support System for employee's performance prediction	Hamidah Jantan	Universiti Teknologi MARA	ICT

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122	A Research On Intelligent Agent System Using Kansei Engineering	Anitawati binti Mohd Lokman	Universiti Teknologi MARA	ICT
123	Community based E-Museum for Heritage Preservation : Developing the Traditional Malay Textile Knowledge Model	Wan Adilah Wan Adnan	Universiti Teknologi MARA	ICT
124	Biologically Inspired Middleware and Theory Formulation for Self-Healing Ubiquitous Systems	Azween	Universiti Teknologi PETRONAS	ICT
125	Biologically Inspired Protocol Specification Language for Securing Hybrid Mobile Ad Hoc Networks	Azween	Universiti Teknologi PETRONAS	ICT
126	Internet Protocol to Optical Traffic Controller using Fuzzy Logic for Ethernet Passive Optical Network	Norashidah binti Md Din	Universiti Tenaga Nasional	ICT
127	High Resolution Three Dimensional Computational Fluid Dynamics Solver based on Normalized Variable Formulation	Mohd Zamri bin Yusoff	Universiti Tenaga Nasional	ICT
128	The Development of an Instructional Software for Analog and Mixed-Signal Design	Fazrena Azlee bt Hamid	Universiti Tenaga Nasional	ICT
129	The Stacked Ultra Wide band Antenna: Development and Applications in Wireless Personal Area Network (WPAN) Devices	Chandan Kumar Chakrabarty	Universiti Tenaga Nasional	ICT
130	An Artificial Intelligent-Based Smart Antenna System for WiMAX Communication	Tiong Sieh Kiong	Universiti Tenaga Nasional	ICT
131	Interactive News Reader Engine	Syed Malek Fakar Duani	Universiti Tun Abdul Razak	ICT
132	The Development of Data Analyzer for Early Detection of Oil Palm Devastating Fungus	Nazri bin Mohd Nawi	Universiti Tun Hussein Malaysia	ICT

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133	Application of a novel Higher Order Neural Network to improve storm water prediction as precautionary measures to forecast flood disaster in suburban areas	Rozaida Ghazali	Universiti Tun Hussein Malaysia	ICT
134	Development of A Tool for Checking Conformance of UML Specification	Rosziati Ibrahim	Universiti Tun Hussein Malaysia	ICT
135	Chinese Speech-Character Converter For Hearing And Speaking Disabled Persons	Chang Yun Fah	Universiti Tunku Abdul Rahman	ICT
136	Research and Development of an Automated Approach in Detecting Text Regions in Images based on Machine Learning Techniques	Tay Yong Haur	Universiti Tunku Abdul Rahman	ICT
137	Detecting and Recognizing of Intruders Through Behavioural Analysis	Khor Siak Wang	Universiti Tunku Abdul Rahman	ICT
138	Malay Phoneme Recognition for Continuous Utterance	Hong Kai Sze	Universiti Tunku Abdul Rahman	ICT
139	Wireless Intelligent Assistive Navigation Management System Using SmartGuide Devices for Visually Impaired People	Ang Li-minn	University of Nottingham Malaysia Campus	ICT
140	Pipeline riser defect prediction using Support Vector Machines	Dino Isa Amshah	University of Nottingham Malaysia Campus	ICT
141	Development of a scientific project management maturity model to assess the capability of the Malaysian Information, Communications and Technology (ICT) Sector.	Andrew Spowage	University of Nottingham Malaysia Campus	ICT
142	Energy Efficient Re-configurable Wireless Vision Sensor Network for Visual Research and Applications	Ang Li-minn	University of Nottingham Malaysia Campus	ICT
143	Smart Vehicle System to protect drivers and motor cyclists on Malaysian Roads	Dino Isa Amshah	University of Nottingham Malaysia Campus	ICT

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144	Deciphering the use of cancer biomarkers through functional analysis in cell line models	Cheong Sok Ching	Cancer Research Initiatives Foundation	BIOTECHNOLOGY
145	Potential of polysaccharides derived from <i>Leucaena leucocephala</i> as anti-diabetic candidates	Abd. Rashid bin Li	Forest Research Institute of Malaysia	BIOTECHNOLOGY
146	Resistance-modifying and inhibitory potential of plant-based flavonoids against multidrug-resistant <i>Staphylococcus aureus</i> (MRSA) clinical isolates.	Saiful Azmi Johari	Forest Research Institute of Malaysia	BIOTECHNOLOGY
147	Development of cosmetic stick form products from cocoa butter deodorizer distillate	Samuel Yap Kian Chee	Lembaga Koko Malaysia	BIOTECHNOLOGY
148	Identification of genes associated with stress-induced biosynthesis of ellagitannin in dukung anak ( <i>Phyllanthus urinaria</i> ) using subtractive hybridization approach.	Maheswary Vellupillai	Malaysian Agricultural Research & Development Institute	BIOTECHNOLOGY
149	Development of perfect molecular marker for Bph3 gene controlling brown planthopper resistance in rice: High resolution fine genetic mapping of Bph3 gene	Hayati binti Ahmad	Malaysian Agricultural Research & Development Institute	BIOTECHNOLOGY
150	Discovery of oil palm SNPs and their application in the characterization of oil palm genetic resources and breeding materials	Leslie Ooi Cheng-Li	Malaysian Palm Oil Board	BIOTECHNOLOGY
151	Expression profiling of hormone responsive genes during early oil palm tissue culture	Ooi Siew Eng	Malaysian Palm Oil Board	BIOTECHNOLOGY
152	Development of EST-SSR markers and their application for genetic map construction, map integration and quantitative trait loci (QTL) analysis in oil palm.	Rajinder Singh	Malaysian Palm Oil Board	BIOTECHNOLOGY
153	Natural UV Photoprotective Agent From Extracts of Selected Plants.	Zanariah binti Ujang	SIRIM Berhad	BIOTECHNOLOGY
154	Synthesis, Characterization And Drug Delivery Behaviours Of O/W Nanoemulsions By Low-Energy Emulsification Methods For Anti-Cancer Drugs	Mohd Cairul Iqbal bin Mohd Amin	Universiti Kebangsaan Malaysia	BIOTECHNOLOGY

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155	The regeneration of Tooth from Human Dental Pulp Stem Cells	MOHD NAZIMI ABD JABAR	Universiti Kebangsaan Malaysia	BIOTECHNOLOGY
156	Synthesis of Xanthone Derivatives as Potential Anti-inflammatory Agents	Malina Jasamai	Universiti Kebangsaan Malaysia	BIOTECHNOLOGY
157	Endophytic fungi : an assessment of antimicrobial activity and bioactive metabolites	Jacinta Santhanam	Universiti Kebangsaan Malaysia	BIOTECHNOLOGY
158	Development of topical formulation for enhancing normal and delayed wound healing using tocotrienol rich fraction and Centella asiatica (pegaga) - effective doses and type of formulation (gel, cream or ointment).	Musalmah Bt Mazlan	Universiti Kebangsaan Malaysia	BIOTECHNOLOGY
159	Development Of Low-Fouling Nanofiltration Membrane System For Fractionation Of Amino Acids From Protein Hydrolysates	Abdul Wahab bin Mohammad	Universiti Kebangsaan Malaysia	BIOTECHNOLOGY
160	Modulation of signalling cascade proteins and RNA expressions by Tocotrienol Rich Fraction (TRF) in oxidative stress induced aging in C. elegans	Goon Jo Aan	Universiti Kebangsaan Malaysia	BIOTECHNOLOGY
161	The Effect Of Zinc Supplementation On Growth And Bone Health In Paediatric Patients With Thalassaemia	Noor Aini Mohd Yusoff	Universiti Kebangsaan Malaysia	BIOTECHNOLOGY
162	Investigation Of Novel Lyophilised Hydrogels (Wafers) Based On Natural And Synthetic Polymers As Controlled-Release Vehicles For Ibuprofen In Topical Drug Delivery	Shiow Fern Ng	Universiti Kebangsaan Malaysia	BIOTECHNOLOGY
163	Profiling, characterisation and rapid detection of oral microorganisms	Koshy Philip	Universiti Malaya	BIOTECHNOLOGY
164	Reduction of Greenhouse Gas Emissions from Landfills with Biologically Engineered Biocovers	P. Agamuthu	Universiti Malaya	BIOTECHNOLOGY
165	Development of a robust quantitative chimerism analysis program using various polymorphic genetic markers for patients undergoing haematopoietic stem cell transplantation	Hany Ariffin	Universiti Malaya	BIOTECHNOLOGY

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166	Gamma-glutamyltransferase, alanine transaminase and aspartate transaminase: Utility in the screening, diagnosis and evolution of gestational diabetes mellitus	Tan Peng Chiong	Universiti Malaya	BIOTECHNOLOGY
167	Extraction and characterization of natural red pigment from dragon fruit ( <i>Hylocereus polyrhizus</i> ) as natural food dye and a potential source of antioxidant.	Chandran Somasundram	Universiti Malaya	BIOTECHNOLOGY
168	Expression and Immunogenicity of Recombinant Clone Myt272 Containing RD6 Region Against Tuberculosis Towards Vaccine Development.	Salmah Ismail	Universiti Malaya	BIOTECHNOLOGY
169	Recombinant expression of chimeric surface antigen SAG1/2 of <i>Toxoplasma gondii</i> by the yeast <i>Pichia pastoris</i> for diagnostic use	Lau Yee Ling	Universiti Malaya	BIOTECHNOLOGY
170	Study of bioactive compounds from indigenous plants in Sabah against protein kinases and phosphatases involved in signal transduction in cancer	Jualang @ Azlan Abdullah Bin Gansau	Universiti Malaysia Sabah	BIOTECHNOLOGY
171	Investigation Of Dengue Virus Infection Of Monocytes And Macrophages: Identification Of Host Response Pathways And Prognostic Biomarkers For Diagnosis.	Magdline Sia Henry Sum	Universiti Malaysia Sarawak	BIOTECHNOLOGY
172	Determining the mode of activity of an extract of <i>Lansium domesticum</i> against <i>Plasmodium falciparum</i> .	Angela Anak Siner	Universiti Malaysia Sarawak	BIOTECHNOLOGY
173	Development of a real-time polymerase chain reaction method using molecular probes for the detection of human adenoviruses.	DAVID PERERA	Universiti Malaysia Sarawak	BIOTECHNOLOGY
174	The response of immunoreactive nerve fibres, inflammatory cells and cytokines in osteoarthritis with gingerol supplement	Shanthi Ganabadi	Universiti Putra Malaysia	BIOTECHNOLOGY
175	XPD/ERCC2 and XRCC1 polymorphisms and the risk of nasopharyngeal carcinoma in Malaysia	Lye Munn Sann	Universiti Putra Malaysia	BIOTECHNOLOGY
176	Expanded bed adsorption chromatography as a method for large scale production of recombinant human epidermal growth factor (rhEGF).	Mohd Puad Abdullah	Universiti Putra Malaysia	BIOTECHNOLOGY



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177	Characterization of bioactive constituents from several Myrtaceous plants based on ichthyotoxicity test.	Intan Safinar Ismail	Universiti Putra Malaysia	BIOTECHNOLOGY
178	Lipid lowering and antioxidant effect of Hibiscus cannabinus (Kenaf) in hypercholesterolemic induced rabbit	Zulkhairi Amom	Universiti Putra Malaysia	BIOTECHNOLOGY
179	Novel Oral Vaccine for Respiratory Syncytial Virus	Khatijah binti Mohd Yusoff	Universiti Putra Malaysia	BIOTECHNOLOGY
180	The characterisation of antiangiogenic molecular determinants of crude and isolated plant extracts of Orthosiphon aristatus (Misai Kusing) and Phyllanthus urinaria (Dukung Anak).	Amin Malik Shah Abdul Majid	Universiti Sains Malaysia	BIOTECHNOLOGY
181	Elucidating The Role Of Cd74, The Membrane Receptor For Migration Inhibitory Protein (Mif) During Development For Potential Application In Cytokine Directed Drug Discovery	Chong Shu Chien @ Alexander	Universiti Sains Malaysia	BIOTECHNOLOGY
182	A study of LDL receptor gene and apo B gene mutations in Malays with familial hypercholesterolemia	Zilfalil bin Alwi	Universiti Sains Malaysia	BIOTECHNOLOGY
183	Identification of in-vivo expressed antigens in Toxoplasma gondii infection	Rahmah binti Noordin	Universiti Sains Malaysia	BIOTECHNOLOGY
184	A study of the transcription factors CTCF/BORIS, YB-1 and MDR-1 in osteosarcoma tumour samples	Shaharum bin Shamsuddin	Universiti Sains Malaysia	BIOTECHNOLOGY
185	Biotransformation of artonin E into compound with enhanced pharmacological activities using locally isolated microorganisms.	Shaza Eva Mohamad	Universiti Teknologi Malaysia	BIOTECHNOLOGY
186	Novel Technique For Detection Of Oral Squamous Cell Carcinoma In Saliva	Khor Goot Heah	Universiti Teknologi MARA	BIOTECHNOLOGY
187	Fractionation and identification of bioactive compounds with promising antimicrobial and anticancer activities from the Leaves of Muntingia calabura and Dicranopteris linearis	Zainul Amiruddin Zakaria	Universiti Teknologi MARA	BIOTECHNOLOGY

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188	In vivo study of hypoglycemic function of floral anthocyanins systems	Lee (Kok) Pat Moi	Universiti Teknologi MARA	BIOTECHNOLOGY
189	Preparation, characterization and in vivo evaluation of biodegradable nifedipine -PLGA nanoparticles for improved oral bioavailability	Javad	Universiti Teknologi MARA	BIOTECHNOLOGY
190	Malaysian endophytes for the development of new green chemistry reactions and syntheses	Sadia Sultan	Universiti Teknologi MARA	BIOTECHNOLOGY
191	Elucidation of the Neuroprotective Properties of the Cellular Prion Protein: Interaction with Parkinson's Disease alpha-Synuclein.	Say Yee How	Universiti Tunku Abdul Rahman	BIOTECHNOLOGY
192	Formulation, gastrointestinal transit and absorption from nano-particular dispersions of amphotericin B	Nashiru Billa	University of Nottingham Malaysia Campus	BIOTECHNOLOGY
193	The potential of palm oil as a natural penetration enhancer in transdermal therapeutic systems	Andrew Morris	University of Nottingham Malaysia Campus	BIOTECHNOLOGY
194	HMG-CoA Reductase Inhibitors from Plant Secondary Metabolites as Hypercholesterolemic Lowering Agents	KHOO TENG JIN	University of Nottingham Malaysia Campus	BIOTECHNOLOGY
195	Development of Smart Drive Build in AC Motors for Optimal Operations	Nader Barsoum	Curtin (Malaysia) Sdn. Bhd.	INDUSTRY
196	Study of Electrical Properties of Palm Oil Using Kerr-effect Technique	Wong Kiing-Ing	Curtin (Malaysia) Sdn. Bhd.	INDUSTRY
197	Development of biofungicide for wood panel products using secondary metabolites of white rot fungi.	Salmiah binti Ujang	Forest Research Institute of Malaysia	INDUSTRY
198	Development of high barrier packaging film filled with nano-structured silica from rice husk ash.	Yusnita binti Yaacob	Malaysian Agricultural Research & Development Institute	INDUSTRY

No.	Project Title	Project Leader	Institution	Research Cluster
199	Development Of Calibration Curves For Dicentric And Translocation Analysis Of Chromosome Aberration	Noriah Binti Jamal	Malaysian Nuclear Agency	INDUSTRY
200	The Study of Multilayered Nanowires with Giant Magnetoresistance (GMR) Property	Kok Kuan Ying	Malaysian Nuclear Agency	INDUSTRY
201	Catalyst-assisted growth of Silicon Nanowires	Ng Inn Khuan	Malaysian Nuclear Agency	INDUSTRY
202	Development of immersion probe for inspection of reactor tank of PUSPATI Reactor Triga Mk II	Mohamad Pauzi Ismail	Malaysian Nuclear Agency	INDUSTRY
203	Bio-Inspired Robotics Devices for Sportsman Screening Service(BIRDSSS)	S. M. Namal Arosha Senanayake	Monash University Sunway Campus Malaysia	INDUSTRY
204	Swarm Robotics: A Study on Foraging Behavior of Swarm Robots Using Swarm Intelligence	Sivalinga G Ponnambalam	Monash University Sunway Campus Malaysia	INDUSTRY
205	Growth of Indium Tin Oxide Nanostructures By Plasma-Assisted Pulsed Laser Deposition	Tou Teck Yong	Multimedia University	INDUSTRY
206	Photonic crystal fiber based Raman amplifier and laser	Zulfadzli Yusoff	Multimedia University	INDUSTRY
207	Design Of Near Field Ultra High Frequency (Uhf) Radio Frequency Identification (Rfid) Antenna	Tiang Jun Jiat	Multimedia University	INDUSTRY
208	Sociable Humanoid With Emotional Intelligence	Loo Chu Kiong	Multimedia University	INDUSTRY
209	Design and Correlation of Grounding Systems at Power Frequency Low-Magnitude and High Impulse Currents for Microwave and Utility Substations	Normiza binti Mohamad Nor	Multimedia University	INDUSTRY

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210	Design, fabrication and characterization of rare-earth doped fiber with optimized dopant distribution profile	Hairul Azhar bin Abdul Rashid	Multimedia University	INDUSTRY
211	Development of Stainless Steel / Silicon Carbide Composite Materials Through Metal Injection Moulding Technique	Fauzi bin Ismail	SIRIM Berhad	INDUSTRY
212	Fabrication of Electrochromic Thin Films using Epoxidised Natural Rubber based Polymer Electrolyte for Smart Windows Applications	Mansor Bin Abdul Hamid	SIRIM Berhad	INDUSTRY
213	Development of high performance gear through warm compaction process	MAZLAN BIN MOHAMMAD	SIRIM Berhad	INDUSTRY
214	Antimicrobial Chitosan Silver Composites for Potential Biomedical Applications	Kartini Noorsal	SIRIM Berhad	INDUSTRY
215	Development of Titanium-Niobium Alloy For Potential Medical And Dental Applications	Mohmad Soib bin Selamat	SIRIM Berhad	INDUSTRY
216	Removal of Binder System Based on Palm Oil Derivative using Supercritical Carbon Dioxide Debinding Technique	Rosdi bin Ibrahim	SIRIM Berhad	INDUSTRY
217	Preparation of Carbon Nanotubes (CNTs) Electrode for Possible Supercapacitor Application by Electrophoretic Deposition	Abdul Hakim bin Hashim	SIRIM Berhad	INDUSTRY
218	Hydroxyapatite Coating on Titanium and Titanium Alloy Substrate by Electrophoretic Deposition	Abdul Hakim bin Hashim	SIRIM Berhad	INDUSTRY
219	Development of Carbon Fiber deposited with Carbon Nanotubes (CNT) using electrophoretic technique	Shahrul Nizam	SIRIM Berhad	INDUSTRY
220	Synthesis of Vanadium doped nanosized TiO <sub>2</sub> for removal of toxicants in air using visible light photocatalysts	SUHAINA BINTI MOHD IBRAHIM	SIRIM Berhad	INDUSTRY

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221	Development of Degassing Treatment of Cast Al-Si-Mg Alloy	Ani Haryati Abdul Aziz	SIRIM Berhad	INDUSTRY
222	Toolkit for Rapid Safety Assessment of Consumer Cleaning Products	T. Letchumi a/p Thannimalay	SIRIM Berhad	INDUSTRY
223	Development of Process for Production of Nanometal and Nanometal Oxide Suitable for Catalyst Application by High Intensity Ultrasound Approach	Norhanita binti Mohd Yusof	SIRIM Berhad	INDUSTRY
224	Advanced High Performance Compact Microwave Filters For Communication	Su Hieng Tiong	Swinburne University of Technology, Sarawak Campus	INDUSTRY
225	Fabrication of optical fiber for use as radiation dosimeters.	Abdul Aziz b. Mat Hassan	Telekom Research & Development Sdn Bhd	INDUSTRY
226	Development of Membrane Technology Air to Air Heat Exchanger for Thermal cooling system	MD HISAM HANAPEI	Telekom Research & Development Sdn Bhd	INDUSTRY
227	Improving The Performance of Electrical Discharge Machining (EDM) in machining Titanium Alloys By using Cryogenic Cooling of Electrodes	Dr. Ahsan Ali Khan	Universiti Islam Antarabangsa Malaysia	INDUSTRY
228	Magnetic Behaviour Of Polyurethane Composites Containing Polyaniline-Coated Manganese-Zinc Ferrite	Khairiah binti Haji Badri	Universiti Kebangsaan Malaysia	INDUSTRY
229	Development of compact dual purpose solar continuous adsorption system for refrigeration and domestic water heating	Mohammad Alghoul	Universiti Kebangsaan Malaysia	INDUSTRY
230	Development of anti-blooming agent for confectionary fats	Nazaruddin Ramli	Universiti Kebangsaan Malaysia	INDUSTRY
231	Development of Solar Assisted Heat Pump Dryer With Advanced Multifunctional Solar Thermal Collector	Mohd Hafidz bin Haji Ruslan	Universiti Kebangsaan Malaysia	INDUSTRY

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232	Nanoparticles Substituted Yttrium Iron Garnet For Magneto-Optic Application	Noor Baa'yah binti Ibrahim	Universiti Kebangsaan Malaysia	INDUSTRY
233	Development of a Novel Processing Method for Metal Matrix Composites (MMC)	Mohd Zaidi Omar	Universiti Kebangsaan Malaysia	INDUSTRY
234	Studies on Hydrogen-Methane blend as Fuel for Extra Low-Emission Spark Ignition Engines	Taib Iskandar bin Mohamad	Universiti Kebangsaan Malaysia	INDUSTRY
235	Development of a cost-competitive internally mixing natural gas conversion system for Malaysian manufactured automotive engine using Spark Plug Fuel Injector	Taib Iskandar bin Mohamad	Universiti Kebangsaan Malaysia	INDUSTRY
236	Development of an environmental index to predict workers comfort, performance and productivity in Malaysian industries	Siti Zawiah binti Md. Dawal	Universiti Malaya	INDUSTRY
237	Study of Corrosion and Tribo-Corrosion of Automotive Components and Their Durability in Palm Oil Based Biofuel	A.S.Md. Abdul Haseeb	Universiti Malaya	INDUSTRY
238	Palm Diesel Properties Enhancement Study for Automotive Application	Masjuki bin Hj.Hassan	Universiti Malaya	INDUSTRY
239	Development of Brain Control Wheel Chair for the Elderly and Disable Persons	Norrima binti Mokhtar	Universiti Malaya	INDUSTRY
240	Design and Development of High Energy Efficiency Permanent Magnet Synchronous Motors (PMSM) Vector Drive System with Regenerative Capability	Hew Wooi Ping	Universiti Malaya	INDUSTRY
241	Design and Implementation of a Hybrid Multilevel Inverter-Fed Permanent Magnet Synchronous Motor DTC Drive	Saad Mekhilef	Universiti Malaya	INDUSTRY
242	Preliminary Study on Double-Clad Yb-Doped Fiber Lasers for the Development of a Kilowatt High Power Fiber Laser System	Sulaiman Wadi Harun	Universiti Malaya	INDUSTRY

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243	Experimental Investigation On Control System Reliability In High Energy Gas-Liquid Two-Phase Flow	Mohd Zamri bin Zainon @ Baharom	Universiti Malaya	INDUSTRY
244	Design and Development of a 1kW Interior Permanent-Magnet Synchronous Motor (IPMSM) for Industrial Fans Application	Nasrudin bin Abd Rahim	Universiti Malaya	INDUSTRY
245	Design and development of hydraulic regenerative braking device for automotive vehicles	Mohd Hamdi bin Abd Shukor	Universiti Malaya	INDUSTRY
246	Investigations into Effects of Temperature and Time on the Microstructure and Material Behaviour of a New 718+ Superalloy for Application in Turbine Blades of Energy-Efficient Gas-Turbine Engines	Zainul Huda	Universiti Malaya	INDUSTRY
247	Production of Fructo-oligosaccharides from Natural Coconut for Diabetic using A Novel Enzymatic Membrane Reactor	MIMI SAKINAH BINTI ABDUL MUNAIM	Universiti Malaysia Pahang	INDUSTRY
248	Development of a Design Evaluation System Software for Home Appliances Remanufacturing	Kumaran a/l Kadirgama	Universiti Malaysia Pahang	INDUSTRY
249	The optmization of mobile robot navigation algorithm using a hybrid navigation system	Abdul Hamid Adom	Universiti Malaysia Perlis	INDUSTRY
250	Advanced Flash Memory Development for 32nm Technology Node and Beyond.	Ramzan b Mat Ayub	Universiti Malaysia Perlis	INDUSTRY
251	New Real-Time Motion Control for Stable-Target Trajectory Tracking of a Nonholonomic Mobile Robot	Hazry Desa	Universiti Malaysia Perlis	INDUSTRY
252	Development Of Biomembrane Coating Particle For Controlled Release And Stabilisation Of Antioxidant	Duduku Krishnaiah	Universiti Malaysia Sabah	INDUSTRY
253	An investigation into the stabilization of peat soil and application of lightweight foundation	Mohammad Ibrahim Safawi	Universiti Malaysia Sarawak	INDUSTRY

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254	Cellulose Based Biopolymer Electrolytes as Proton Conductor Towards the Development of Battery.	Mohd Ikmar Nizam b. Mohamad Isa	Universiti Malaysia Terengganu	INDUSTRY
255	Dielectrophoretic (DEP) separation of microorganisms using wire cloth electrode from textile technology	Zurina Zainal Abidin	Universiti Putra Malaysia	INDUSTRY
256	Cement Column Stabilization of Peat Soils	Bujang bin Kim Huat	Universiti Putra Malaysia	INDUSTRY
257	Power Amplifiers Linearization Based On Digital Predistortion For Wireless Applications	Roslina binti Mohd Sidek	Universiti Putra Malaysia	INDUSTRY
258	A Randomised Leader Progression Model For Backflashover Studies And Evaluation Of Lightning Performance On Transmission And Substation	Mohd Zainal Abidin bin Ab Kadir	Universiti Putra Malaysia	INDUSTRY
259	Passive Device Components For Wireless High Temperature Sensors Applications	Mohd Nizar Hamidon	Universiti Putra Malaysia	INDUSTRY
260	Development of framework for implementing lean manufacturing tools and techniques in a textile industry	Mohd Rasid Osman	Universiti Putra Malaysia	INDUSTRY
261	Control of microstructure and phase formation for enhancing the critical current density in high temperature superconductors for high field applications	Chen Soo Kien	Universiti Putra Malaysia	INDUSTRY
262	Novel breadmaking process with the aid of ultrasonic treatment	Chin Nyuk Ling	Universiti Putra Malaysia	INDUSTRY
263	Development of Nanoporous Gamma-alumina Functional Membrane using Vanadium Oxide Nanotubes as Template and its Application for Styrene Oxidation Reactions	Abdul Latif bin Ahmad	Universiti Sains Malaysia	INDUSTRY
264	Utilization Of Epoxy Based Nanocomposites For The Development Of Heat-Resistant Structural Panel	Chow Wen Shyang	Universiti Sains Malaysia	INDUSTRY



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265	Development of Porous Zinc Alloy Anode for Rechargeable Zinc-air Batteries	Ahmad Azmin Bin Mohamad	Universiti Sains Malaysia	INDUSTRY
266	Development of on-line temperature control for batch polymerisation reactor	Suhairi Abdul Sata	Universiti Sains Malaysia	INDUSTRY
267	Diffusion of active components through nano-coated membranes in granules/pellets doped with fertilizers: Experimental and modeling studies.	Weeramundage J N Fernando	Universiti Sains Malaysia	INDUSTRY
268	Synthesis of novel macroporous supported carbon molecular sieve membranes from phenolic resin	Mohd Azmier Bin Ahmad	Universiti Sains Malaysia	INDUSTRY
269	Synthesis of Multiwalled Carbon Nanotube/Poly(vinyl alcohol) Membranes and Their Application to Pervaporation Dehydration of Isopropanol and Water Mixture	Tan Soon Huat	Universiti Sains Malaysia	INDUSTRY
270	On-line Dynamic Optimization Studies of Batch Reactors in the Presence of Parametric Uncertainties and Disturbances	Norashid bin Aziz	Universiti Sains Malaysia	INDUSTRY
271	Development of SiC-based Hydrogen Sensor for Harsh Environment Applications	Cheong Kuan Yew	Universiti Sains Malaysia	INDUSTRY
272	Groundwater Potential In Kerian Irrigation Scheme By Using Isotopic Hydrological And Geophysical Techniques	Syafalni	Universiti Sains Malaysia	INDUSTRY
273	Development of Susceptor Materials to Improve Microwave Energy Absorption on the CaCu <sub>3</sub> Ti <sub>4</sub> O <sub>12</sub> Electroceramics Processing	Sabar Derita Hutagalung	Universiti Sains Malaysia	INDUSTRY
274	Characterisation of Abrasion Loss, Clogging Behaviour and Binder Creep to Enhance Properties of Porous Asphalt	Meor Othman Hamzah	Universiti Sains Malaysia	INDUSTRY
275	Development of a Database For Biofuel Combustion Properties	Mohammad Nazri Mohd. Jaafar	Universiti Teknologi Malaysia	INDUSTRY

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276	Selective Separation of Carbon Dioxide from Natural Gas by Emulsion Liquid Membrane (ELM) in Rotating Disc Contactor (RDC).	Khairul Sozana Nor binti Kamarudin	Universiti Teknologi Malaysia	INDUSTRY
277	Development of brake squeal suppression technique using structural modifications	ABD RAHIM ABU BAKAR	Universiti Teknologi Malaysia	INDUSTRY
278	Development of Static Compensators (STATCOM) Multilevel Converter for Power Quality Improvement in Medium Voltage Networks	Abdul Halim bin Mohamed Yatim	Universiti Teknologi Malaysia	INDUSTRY
279	Heteroepitaxial Growth of SiC Thin Film on Si Substrate using Cat-CVD Method	Norlaili binti Mat Safri	Universiti Teknologi Malaysia	INDUSTRY
280	Synthesis and Characterization of Functionalized Silica Based Materials for Mercury Removal from Natural Gas	Hanapi Bin Mat	Universiti Teknologi Malaysia	INDUSTRY
281	Development of degradable thermoformed packaging product from rice straw/starch and polyolefinic for food	Wan Aizan binti Wan Abdul Rahman	Universiti Teknologi Malaysia	INDUSTRY
282	Development of cation exchange resins for removal of heavy metals from industrial waste water using locally produced polyethylene.	Mohamed Mahmoud El-Sayed Nasef	Universiti Teknologi Malaysia	INDUSTRY
283	Development of Transmission Use of System Charges Scheme for Malaysia Power System	Mohammad Yusri Hassan	Universiti Teknologi Malaysia	INDUSTRY
284	Development Of Novel Electrolyte Hollow Fibre For Solid Oxide Fuel Cell	Suhaila Mohd Sanip	Universiti Teknologi Malaysia	INDUSTRY
285	Development of less water-dependent proton exchange membranes for PEM fuel cells.	Mohamed Mahmoud El-Sayed Nasef	Universiti Teknologi Malaysia	INDUSTRY
286	Design & Synthesis of Nano-ZnO/ZrO <sub>2</sub> Solid Super Acid Catalyst for Hydroisomerization of Straight Alkane.	Sugeng Triwahyono	Universiti Teknologi Malaysia	INDUSTRY

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287	Development And Characterization Of Polymer/Inorganic Composite Membrane For Direct Methanol Fuel Cell	Abdul Halim Bin Mohd Yusof	Universiti Teknologi Malaysia	INDUSTRY
288	Development Of Anaerobic Stage Reactor Prototype To Reduce Organic Pollutants In Recalcitrant Wastewater.	SHREESHIVADASAN	Universiti Teknologi Malaysia	INDUSTRY
289	The Growth of Sapphire doped with Titanium using Automatic Diameter Control-Crystal Growth System	Zuhairi Ibrahim	Universiti Teknologi Malaysia	INDUSTRY
290	Power Quality and Performance Study of a Fuel Cell Based Power Electronics System	Makbul Anwari	Universiti Teknologi Malaysia	INDUSTRY
291	Development and Evaluation of an Intelligent Active Vibration Control for Flexible Structure Using Smart Material	Intan Zaurah Mat Darus	Universiti Teknologi Malaysia	INDUSTRY
292	Pulse Detonation Combustion For Propulsion Purpose	Mazlan Abdul Wahid	Universiti Teknologi Malaysia	INDUSTRY
293	A Novel FACTS Devices Controlled Techniques for Power Flow and Damping Oscillations	Mohd Wazir bin Mustafa	Universiti Teknologi Malaysia	INDUSTRY
294	System Identification and Controller Design of an Industrial Hidraulic Actuator with Servo Valve	Mohd. Fua'ad bin Hj. Rahmat	Universiti Teknologi Malaysia	INDUSTRY
295	Development Of Novel Nanomaterials As An Additive Of Drilling Mud	Ariffin bin Samsuri	Universiti Teknologi Malaysia	INDUSTRY
296	Development of Microwave Sensors for Characterize the Rice Quality in Malaysia	You Kok Yeow	Universiti Teknologi Malaysia	INDUSTRY
297	Design and Application of Multiphase Steel Materials for Components Subjected to Fatigue Loading	Yunan Prawoto	Universiti Teknologi Malaysia	INDUSTRY

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298	Design and Development of Intelligent Assistive Robotic System for Hemiplegic/Hemiparetic Patients	Mohamed Hussein	Universiti Teknologi Malaysia	INDUSTRY
299	Novel Sound Absorber of Light Weight Aluminium Composite Material of Perforated Wall Panel With Geometric Patterns	Mohd. Ngasri bin Dimon	Universiti Teknologi Malaysia	INDUSTRY
300	Water Purification and Recovery of Dyes From Batik Industry Wastewater Using Emulsion Liquid Membrane System	NORASIKIN BT OTHMAN	Universiti Teknologi Malaysia	INDUSTRY
301	Small Scale Integrated Renewable Energy Supply for Remote Office Employing the Use of PV Source	Nor Salwa Damanhuri	Universiti Teknologi MARA	INDUSTRY
302	Seismic Performance on Multi-storey Precast Buildings (IBS) in Malaysia Subjected to Long-Distant Earthquake Excitation	Nor Hayati Binti Abdul Hamid	Universiti Teknologi MARA	INDUSTRY
303	Controllable Single-phase Electronic Transformer	Ngah Ramzi Hamzah	Universiti Teknologi MARA	INDUSTRY
304	Novel Intelligent Virtual Instrumentation for Multivariable Batch Process Control	Zuriati Janin	Universiti Teknologi MARA	INDUSTRY
305	Textile Coloration Using Colour Extracted from Local Bacterial Isolates	Wan Yunus bin Wan Ahmad	Universiti Teknologi MARA	INDUSTRY
306	Implementation of lead zirconate titanate-based passive monolithic microwave integrated circuit (MMIC) elements	Zaiki Awang	Universiti Teknologi MARA	INDUSTRY
307	Design of controlled-release melt agglomerates.	Wong Tin Wui	Universiti Teknologi MARA	INDUSTRY
308	Optimised Pulse Width Modulation Generator for Advanced Power Electronics Converter with Bidirectional Capabilities	Azilah Saparon	Universiti Teknologi MARA	INDUSTRY

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309	Development of a novel, lightweight and porous material formed via strong covalent organic frameworks for hydrogen storage.	Yin Chun Yang	Universiti Teknologi MARA	INDUSTRY
310	Miniaturized Bandpass Filter for Digital Broadcasting	Robi'atun Adayiah awang	Universiti Teknologi MARA	INDUSTRY
311	Linear and Nonlinear System Identification of a New Steam Distillation Essential Oil Extraction System Based on Auto-Regressive with Exogenous Input Structure	Mohd Hezri Fazalul Rahiman	Universiti Teknologi MARA	INDUSTRY
312	Biosorption of Cu(II), Pb(II) and Ni(II) using sawdust colonised by Pleurotus ostreatus fungal mycelium from mushroom farming waste.	SUHAIMI BIN ABDUL TALIB	Universiti Teknologi MARA	INDUSTRY
313	Synergetic Effect of Fe <sub>3</sub> O <sub>4</sub> and MnFe <sub>2</sub> O <sub>4</sub> Biphase Nanocatalysts as the Driving Force For Higher Ammonia Yield	Noorhana Yahya	Universiti Teknologi PETRONAS	INDUSTRY
314	Development of iron and cobalt nanocatalysts for the Fischer-Tropsch reaction	Noor Asmawati Mohd Zabidi	Universiti Teknologi PETRONAS	INDUSTRY
315	Mix Design Development For High Permeable Concrete Pavement	Bashar S. Mohammed	Universiti Tenaga Nasional	INDUSTRY
316	Development of a Prototype Liquid Nitrogen Cooled Superconducting Motor for Applications in Industry	Nasri bin A. Hamid	Universiti Tenaga Nasional	INDUSTRY
317	Enhancement of Car Crashworthiness Subject to an Impact with a Heavy Vehicle	Faris Tarlochan	Universiti Tenaga Nasional	INDUSTRY
318	The extraction of silica and alumina from coal fly ash using microwave irradiation for the synthesis of zeolites	Rose Aini Kamarudin	Universiti Tenaga Nasional	INDUSTRY
319	Development of Self-Compacting Concrete With Good Fire Spalling Properties	Kamal Nasharuddin Bin Mustapha	Universiti Tenaga Nasional	INDUSTRY

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320	Power System Dynamic Analysis for Self Healing Grid System	Halimatun Binti Hashim	Universiti Tenaga Nasional	INDUSTRY
321	Investigations on the Effects of Warm Forming on the Mechanical Properties and Microstructure of Sintered Parts	Md. Mujibur Rahman	Universiti Tenaga Nasional	INDUSTRY
322	Fabrication of magnetic field sensors from bulk $\text{Ln}(1-x)\text{A}(x)\text{MnO}_3$ ( $\text{Ln} = \text{La}, \text{Pr}$ and $\text{Nd}$ ); $\text{A} = \text{Ca}, \text{Sr}$ ) perovskite.	EWE LAY SHENG	Universiti Tenaga Nasional	INDUSTRY
323	Development of an On-Line Genetic Algorithm-Based High Precision Dispenser System for High Viscosity Material	Johnny Koh Siaw Paw	Universiti Tenaga Nasional	INDUSTRY
324	Intelligent Manufacture for STEP-NC Compliant Machining	Yusri Yusof	Universiti Tun Hussein Malaysia	INDUSTRY
325	Establishing The Performance Curve For Eqwin Turbine	Abas bin Ab Wahab	Universiti Tun Hussein Malaysia	INDUSTRY
326	Unsteady State Hardness Prediction of Industrial Quenched Steel Bar and Welding Joint	Ahmad Mujahid Ahmad Zaidi	Universiti Tun Hussein Malaysia	INDUSTRY
327	New design of pure Titanium metal on metal total hip replacement with ion implanted wear resistance surface.	Haryanti Samekto	Universiti Tun Hussein Malaysia	INDUSTRY
328	Development of a Fuel Injection Retrofit Kit for Small Gasoline Engines	AHMAD JAIS ALIMIN	Universiti Tun Hussein Malaysia	INDUSTRY
329	Development of Integrated Concentrating Photovoltaic-Stirling Engine System Using Triple-Junction Solar Cells and Indigenous Non-Imaging Focusing Technology.	CHONG KOK KEONG	Universiti Tunku Abdul Rahman	INDUSTRY
330	Modeling and characterization of fiber grating sensor devices with nano-structured Au coating	Faidz Abd Rahman	Universiti Tunku Abdul Rahman	INDUSTRY

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331	Biogas Generation as Renewable Energy from Palm Oil Mill Effluent (POME) using Mixed Culture Microbes via Hybrid Anaerobic-Aerobic Bioreactor	Chong Mei Fong	University of Nottingham Malaysia Campus	INDUSTRY
332	Gasification Behaviour and Hydrogen Generation Potential of Agricultural Wastes in Malaysia	Svenja Hanson	University of Nottingham Malaysia Campus	INDUSTRY
333	Preparation of Low-cost Activated Carbon from Malaysia Agricultural By-products for Adsorption of Heavy Metal Ions from Industrial Wastewaters	Lee Lai Yee	University of Nottingham Malaysia Campus	INDUSTRY
334	Novel Strategy of Ultrasonic Cavitation for the Generation of Nanoemulsions and Nanosuspensions in Pharmaceutical preparations	SIVAKUMAR MANICKAM	University of Nottingham Malaysia Campus	INDUSTRY
335	Detailed chemical kinetics and CFD modelling for the combustion of palm oil biodiesel in a light-duty diesel engine	Ng Hoon Kiat	University of Nottingham Malaysia Campus	INDUSTRY
336	Development of a New Environmentally Benign Solvent for CO2 Absorption	Law Chung Lim	University of Nottingham Malaysia Campus	INDUSTRY
337	Development of An Integrated Miniaturised Viscometer Cell Utilising Microfluidics and MEMS Technology	Chin Jit Kai	University of Nottingham Malaysia Campus	INDUSTRY
338	Real Time Target Classification by A Polarimetric FMCW Imaging Radar	Chan Yee Kit	Multimedia University	SEA TO SPACE
339	Characteristic and distribution of atmospheric surfactants from marine ecosystems	Mohd Talib Latif	Universiti Kebangsaan Malaysia	SEA TO SPACE
340	Development Of New Ceramic Coating For Marine Structure Application	Mariyam Jameelah Ghazali	Universiti Kebangsaan Malaysia	SEA TO SPACE
341	Compilation and Analysis of M Star Atlas Spectrum Using Astronomical Spectroscopy Technique	Mohd Zambri bin Zainuddin	Universiti Malaya	SEA TO SPACE

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342	Zooplankton Communities Between Mangrove Forests and Coral Reefs	Shaharudin bin Ab. Razak	Universiti Malaya	SEA TO SPACE
343	Ecology and conservation of <i>Orcaella brevirostris</i> (Irrawaddy dolphin) and <i>Sousa chinensis</i> (Indo-Pacific humpback dolphin) in Cowie Bay, Sabah.	SAIFULLAH A. JAAMAN	Universiti Malaysia Sabah	SEA TO SPACE
344	A study on the heavy metals and hydrocarbons (Aliphatics and PAHs) in the biota (fishes, crabs) and ambient environment of the coral reefs ecosystem of Redang Island, Terengganu	Nor Antonina Abdullah	Universiti Malaysia Terengganu	SEA TO SPACE
345	Moonsoon and Seasonal Effects on Distribution of Hydrocarbon and Related Organic Biomarker Compounds in South China Sea Sediments Off Kemaman Coast.	Norhayati binti Mohd Tahir	Universiti Malaysia Terengganu	SEA TO SPACE
346	Formulation of Polyunsaturated Fatty Acids (PUFA) microcapsule enrichment regime as health enhancement of a scleractinian coral, <i>Galaxea fascicularis</i>	Hii Yii Siang	Universiti Malaysia Terengganu	SEA TO SPACE
347	Development of 3-D Laser Ranger for Building Surveying	Makhfudzah Mokhtar	Universiti Putra Malaysia	SEA TO SPACE
348	Effects of nonuniform temperature gradients on the onset of Marangoni convection with a prescribed heat flux	Norihan Md. Arifin	Universiti Putra Malaysia	SEA TO SPACE
349	Detection Of Fractures And Cavities In Karstic Terrain Using Geoelectromagnetic Methods For Engineering Purpose	HUSAINI OMAR	Universiti Putra Malaysia	SEA TO SPACE
350	A study of the application of oscillating sub-boundary layer vortex generators	Kamarul Arifin B Ahmad	Universiti Sains Malaysia	SEA TO SPACE
351	Flow Resistance and Discharge Estimation for Flooding River	Lai Sai Hin	Universiti Sains Malaysia	SEA TO SPACE
352	The Development of WPInet GPS Services for Precise Real-Time Positioning, Mapping & Navigation	Tajul Ariffin Musa	Universiti Teknologi Malaysia	SEA TO SPACE



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353	Development of Two Seater Wing in Ground Effect (WIG) Craft	Agoes Priyanto	Universiti Teknologi Malaysia	SEA TO SPACE
354	A New Fuel Cell Powered Aerospace Propulsion System.	Thomas Arthur Ward	Universiti Teknologi MARA	SEA TO SPACE
355	A New Approach Of Broadband Antenna Using Metamaterial	Ahmad Asari Sulaiman	Universiti Teknologi MARA	SEA TO SPACE
356	A Longitudinal Comparative Study On The Quality Of Ground Water Versus Treated Water Supply	Stephen Periathamby Ambu	International Medical University	S&T CORE
357	Insect diversity in enhancing nature tourism in Sabah	Arthur Chung Yaw Chyang	Jabatan Perhutanan Sabah	S&T CORE
358	Nutrient Dynamic Study of Oil Palm on deep Tropical Peat	LULIE JOSHUA MELLING	Jabatan Pertanian Sarawak	S&T CORE
359	Factors contributing to nephropathy in Diabetic mellitus	ANUAR ZAINI BIN MD.ZAIN	Monash University Sunway Campus Malaysia	S&T CORE
360	Pedagogic-Driven Learning Resources Aggregator	Tengku Putri Norishah bte. Tengku Shariman	Multimedia University	S&T CORE
361	Modelling and discrete simulations of landslide processes and their impacts	Lim Sin Liang	Multimedia University	S&T CORE
362	Applications of Casimir effect in nanotechnology	CHIN WEN CHEONG	Multimedia University	S&T CORE
363	Evaluation and Application of dynamic long-range dependence volatility in Malaysian Financial markets	CHIN WEN CHEONG	Multimedia University	S&T CORE

No.	Project Title	Project Leader	Institution	Research Cluster
364	Development of a Decision Support System to Manage Severe Floods in Malaysia	Abdullah-AI-Mamun	Universiti Islam Antarabangsa Malaysia	S&T CORE
365	Screening And Isolation Of Bioactive Constituents From The Stem Bark Extracts Of Entada Spiralis (Akar Sintok) For The Development Of Cosmeticeutical Products	SITI ZAITON BT MAT SO'AD	Universiti Islam Antarabangsa Malaysia	S&T CORE
366	Reka Bentuk Dan Pembangunan Sistem Indeks Berasas Web Bagi Integrasi Ict Dalam Pendidikan Di Sekolah Menengah Di Malaysia (Wis-Icted) (The Design And Development Of A Web-Based Index System For The Integration Of Ict In Education (Wis-Icted) For Secondary Schools In Malaysia)	Norazah Mohd Nordin	Universiti Kebangsaan Malaysia	S&T CORE
367	Development Of Nickel Oxyhydroxide (Niooh) As An Electrocatalyst And Electrode	Mohamed Rozali bin Othman	Universiti Kebangsaan Malaysia	S&T CORE
368	The evaluation of occupational and environmental risk indicators for pesticides exposure in paddy growing areas of the IADP Kerian-Sg.Manik.	Ismail bin Sahid	Universiti Kebangsaan Malaysia	S&T CORE
369	Exploiting quantum confinement for application to third generation solar cell	Mohamad Yusof Sulaiman	Universiti Kebangsaan Malaysia	S&T CORE
370	Structural and biological activities studies on the complexes of second and third series transition elements and lanthanide with specific ligands	Ibrahim bin Baba	Universiti Kebangsaan Malaysia	S&T CORE
371	Pest Thrips (Thysanoptera) on Flower Crops of Malaysia and Development of Identification System in CD-ROM as a Diagnostic Tool	Dr Ng Yong Foo	Universiti Kebangsaan Malaysia	S&T CORE
372	Establishment of Optimum Performance Through Biomechanics Engineering Analysis During In-Step Kicking for Malaysian Footballer	Ahmad Rasdan Ismail	Universiti Kebangsaan Malaysia	S&T CORE
373	Evaluation of Nutrition Intervention Programme to Improve Anorexia and Sarcopenia in Elderly People	Suzana bt. Shahar	Universiti Kebangsaan Malaysia	S&T CORE
374	Textile industries wastewater treatment by electrochemical oxidation technique using bimetallic composite electrodes: Decolorization of textile dyes	Mohamed Rozali bin Othman	Universiti Kebangsaan Malaysia	S&T CORE

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375	Incorporation of the soil-root matrix reinforcement effect into the slope stability analysis	NORMANIZA OSMAN	Universiti Malaya	S&T CORE
376	Malaysian Entrepreneurship: A Study of Its Social Construction and The Contribution of Thinking Styles and Organizational Innovation.	Malini Ratnasingam	Universiti Malaya	S&T CORE
377	The Role of Literature and Organized Programmes in Promoting Environmental Awareness and Literacy	Agnes Yeow Swee Kim	Universiti Malaya	S&T CORE
378	Comparing Healthcare Services Provided by Public and Private Hospitals	Rajah Rasiah	Universiti Malaya	S&T CORE
379	Development of Engineering Mathematics teaching modules for undergraduates	Zubaidah Ismail	Universiti Malaya	S&T CORE
380	Early Predictors of Severe Dengue (EPOD) Study	Lucy Lum Chai See	Universiti Malaya	S&T CORE
381	The prevalence and vertical transmission rates of parvovirus, cytomegalovirus, coxsackie virus, toxoplasma gondii, varicella virus and rubella virus in an unselected population of Malaysian births	Noor Azmi bin Mat Adenan	Universiti Malaya	S&T CORE
382	Microbiological profiling of sewage treatment plants	Lee Choon Weng	Universiti Malaya	S&T CORE
383	Evaluation of metals concentrations in fish tissue and risk factors using chemometric techniques	Sharifuddin M Zain	Universiti Malaya	S&T CORE
384	Design and Development of a Smart Camera for Intelligent Traffic Surveillance System (ITSS) using 32-Bit Embedded Based System and GNU/Linux	R.Badlishah Ahmad	Universiti Malaysia Perlis	S&T CORE
385	Design and Development of OCDMA Encoder and Decoder for Access Networks	SYED ALWEE ALJUNID BIN SYED JUNID	Universiti Malaysia Perlis	S&T CORE

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386	The Promotion of Transportation in Tourism Development	liew heng mei	Universiti Malaysia Sabah	S&T CORE
387	Pengurusan Stres Wanita Luar Bandar dari Pelbagai Etnik: Satu Pengujian Rawatan dan Penghasilan Modul Latihan	Rosnah Bt Ismail	Universiti Malaysia Sabah	S&T CORE
388	Studies on reproductive cycle and some aspects of phenology of five rattan species in Sabah	Aminuddin bin Mohamad	Universiti Malaysia Sabah	S&T CORE
389	Molecular And Cytological Study On The Phegopteris Group Of Thelypteridaceae In Sabah	Idris Moht Said	Universiti Malaysia Sabah	S&T CORE
390	Synthesis, characterization and biochemical studies of novel organotin(IV) complexes with 2-acetyl/2-benzoylpyridine N(4)-cyclohexyl thiosemicarbazone ligands having NNS donor atoms	Md. Abu Affan	Universiti Malaysia Sarawak	S&T CORE
391	A GIS based air particulate matter and rainwater chemistry in a coastal region in Kuala Terengganu: Monitoring the dispersion of trace metals and inorganic ions.	Norhayati binti Mohd Tahir	Universiti Malaysia Terengganu	S&T CORE
392	Akulturası dan Konsumerisme Masyarakat Orang Asli di Semenanjung Malaysia Dalam Era Globalisasi	Sarjit Singh a/l Darshan Singh	Universiti Putra Malaysia	S&T CORE
393	Biotransformation Of Curcuminoid Compounds Into High Value Products By Microorganisms	Atan Mohd Sharif	Universiti Putra Malaysia	S&T CORE
394	Anti-diabetic and antioxidant Effects of oil palm fronds and mahogany (Swietenia macrophylla) seeds and pods	Suhaila binti Mohamed	Universiti Putra Malaysia	S&T CORE
395	Inflammatory markers and antioxidant status as predictors of diabetes risk among Malaysians	Hazizi Abu Saad	Universiti Putra Malaysia	S&T CORE
396	The Effect Of Trans Fatty Acid Consumption On Lipid Composition Of Human Milk In Malaysia	Norhaizan bt Mohd Esa	Universiti Putra Malaysia	S&T CORE

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397	Lifestyle Modification (Nutrition And Physical Activity) And Educational Intervention For Breast Cancer Survivors – Promotion Of A Healthy Weight For Better Survival	Zalilah binti Mohd Shariff	Universiti Putra Malaysia	S&T CORE
398	Natural rubber latex allergy in healthcare workers.	NORASHIKIN SHAMSUDIN	Universiti Putra Malaysia	S&T CORE
399	Isolation and identification of bioactive compounds from Callicarpa pentandra.	Faridah Abas	Universiti Putra Malaysia	S&T CORE
400	Professionalizing Nursing: Developing A Competency Profile For Malaysian Oncology Nurses	Mazanah binti Muhamad	Universiti Putra Malaysia	S&T CORE
401	Generalized Partially Linear Model for Longitudinal Categorical Data	Noor Akma binti Ibrahim	Universiti Putra Malaysia	S&T CORE
402	Craniofacial Mapper System	Zulkepli Majid	Universiti Teknologi Malaysia	S&T CORE
403	Design And Development Of Wireless Process Monitoring System For Chilli (Capsium Annum) Plantation	Robiah Ahmad	Universiti Teknologi Malaysia	S&T CORE
404	Design and Realization of Trisomy 21 Early Detection System Based on Ultrasound Fetal Images and Maternal Health Data	Eko Supriyanto	Universiti Teknologi Malaysia	S&T CORE
405	Development Of Urban Design Guidelines For Urban Waterfront Regeneration In Malaysian City Centres	shuhana shamsuddin	Universiti Teknologi Malaysia	S&T CORE
406	Development of Malay Computer Based Speech Therapy & Rehabilitation System	Tan Tian Swee	Universiti Teknologi Malaysia	S&T CORE
407	Development of New Method in Integrity Prediction of Pipelines under Seabed Sediment	Nordin bin Yahaya	Universiti Teknologi Malaysia	S&T CORE

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408	Effects and Determinants of Cross-Border Mergers and Acquisitions (CBMA) in Five East Asian Countries	SONG SAW IMM	Universiti Teknologi MARA	S&T CORE
409	Compact optical polarization rotator based on low refractive index slotted waveguide	Mohd Hanapiah Mohd Yusoff	Universiti Teknologi MARA	S&T CORE
410	A novel automatic technique to detect the health and physical state of newborn babies	Wahidah Mansor	Universiti Teknologi MARA	S&T CORE
411	A Novel Approach for the Composite Power System Expansion Planning	Muhammad Murtadha	Universiti Teknologi MARA	S&T CORE
412	Determination of Transmission Reliability Margin by Means of Parametric-Bootstrap Technique	Muhammad Murtadha	Universiti Teknologi MARA	S&T CORE
413	Simulation Model of Environmental Sustainability in Malaysia using System Dynamics	Margaret Chan Kit Yok	Universiti Teknologi MARA	S&T CORE
414	Muscle Fatigue Solutions for Prolonged Standing at Workplace Using Electromyography (EMG) and Customer Reliability Methodology	Abdul Rahman bin Omar	Universiti Teknologi MARA	S&T CORE
415	Behaviour Of Palm Oil Biodiesel Contaminated Soils	Lee Choon Yong	Universiti Tenaga Nasional	S&T CORE