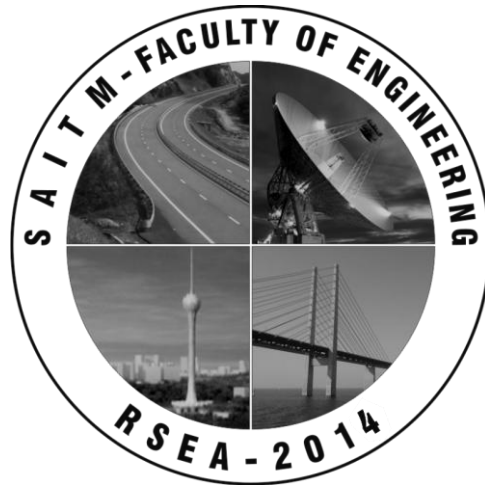


Proceedings of the SAIM Research Symposium on Engineering Advancements

SAITM – RSEA 2014

26th April, 2014



Faculty of Engineering

South Asian Institute of Technology and Medicine [SAITM]
P. O. Box 11, Millennium Drive, Off Chandrika Kumaratunga Mawatha,
Malabe 10115, Sri Lanka.

Major Topics:

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Message from the Chairman

Dr. Neville Fernando MBBS (Ceylon)

President / Chairman

South Asian Institute of Technology and Medicine [SAITM]



It is with a sense of pride that I announce SAIM – The Green Campus, the first multi-faculty institution in tertiary education is fast progressing and establishing itself as the leading seat of higher education from the non-state sector in Sri Lanka.

SAITM faculty of engineering offering B.Sc. Eng. Degree courses in many fields of specialization in affiliation with one of the leading research based universities in the world – Asian Institute of Technology (AIT), Thailand, since its establishment in 2009 has been leading in many innovative and pioneering efforts and has shown tremendous promise and growth.

With more than 500 students enrolled under its wings over the last 4 years, faculty of engineering has already established itself as the best alternative for those students seeking higher education in engineering saving a vast amount of foreign exchange to the country. With the pass out of our engineering graduates from AIT continuously, I am certain a new chapter in engineering profession in Sri Lanka will begin gifting the fruits of our efforts to the nation.

Message from the Dean, Faculty of Engineering

Dr. Sisuru Sendanayake BSc. Eng (Hons) MSc PhD (Moratuwa)

Dean, Faculty of Engineering

South Asian Institute of Technology and Medicine [SAITM]



RSEA is one among many in the event calendar of SAITM Faculty of Engineering that we are truly proud of. Now in its 4th successful edition, this annual research symposium has grown from strength to strength establishing itself as a forum for engineers, researchers and academia of both state and non-state sector at professional as well as student level to share knowledge and ideas in engineering advancements.

With the broad theme of “Sustainable development, planning and strategic management for a sustainable built environment” it is very encouraging to see a large inflow of papers from all quarters and to see the enthusiasm displayed by many including a multitude of sponsors. Looking back, we can indeed be proud of being the first non-state sector higher education institution in engineering in Sri Lanka to have ventured into the important area of research, recognizing the immense value and contribution it can impart on academic development, and we are more than justified by the achievements shown by our past and present students.

I wish RSEA 2014 a resounding success.

Message from the Symposium Chair

Dr. N. P. Miguntanna BSc. Eng (Hons)(Peradeniya), PhD(QUT)

Head - Civil Engineering Research

South Asian Institute of Technology and Medicine [SAITM]



Dear authors and all the participants,

On behalf of the organizing committee, it is my great pleasure to welcome you to “SAITM- Fourth Annual Research Symposium on Engineering Advancements – RSEA 2014” which will be held on 26th of April, 2014 in conjunction with technical workshops to be held on 25th and 27th of April. RSEA is truly a premier event uniquely organized by the SAITM Faculty of Engineering with the aim of further augmenting the involvement of undergraduate students of the faculty in research and to promote and build strong partnerships with the engineering fraternity.

I am delighted to inform you that we have experienced remarkable benefits from the last three research symposiums which were held in 2011, 2012 and 2013 under the participation of more than 500 participants from diverse academic and professional backgrounds including researchers, practitioners from the academia, industry and government and students of both state and non state sector higher education institutes. The popularity of RSEA as a prominent forum for share the knowledge and discuss the technological and scientific challenges, practical barriers, theoretical developments and their applications and limitations has grown over the years and we are expecting more than 600 participants at RSEA 2014.

In addition to the preeminent research presentations and productive technical discussions this year RSEA will deliver a stimulating, informative and delightful program which encompasses technical workshops and poster exhibits. RSEA 2014 framework has specially being designed to provide a multi-disciplinary platform which comprises a number of emerging fields of engineering such as Structural Engineering and Finite Element Analysis, Highway Construction and Transportation Engineering, Renewable Energy, Consumption and Management, Water Resources and Environmental Engineering, Communication and Information Engineering, Image and Signal Processing, Quality Control and Management, Robotics, Control and Automation, Bio-systems and Food technology and Town Planning & Urban Management. Notably, RSEA 2014 is graced by Prof. J. B. Disanayake as the Chief Guest and three renowned senior academics, Dr. A. G. Thusitha Sugathapala, Director General, Sustainable Energy Authority of Sri Lanka, Prof. Rohan Munasinghe, University of Moratuwa and Prof. H. S Thilakasiri , University of Moratuwa as keynote speakers. After subjecting to a comprehensive peer review process we selected papers that present recent results and new knowledge and propose and design new applications which could lead to the sustainable development a practical reality.

I take this opportunity to convey my sincere thank to all the sponsors of the event, review panel and the members of the organizing committee for their untiring dedication and commitment. I wish each of you successful deliberations, stimulating discussions, new friendships and finally a rewarding experience both technically and socially. I look forward to seeing you at the RSEA 2014.

SAITM RSEA 2014 - Programme Committee

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Table of Contents

KEYNOTE SPEECHES

DEVELOPMENT OF RENEWABLE ENERGY IN SRI LANKA – OPPORTUNITIES AND CHALLENGES Dr. A. G. Thusitha Sugathapala	1-1
ROBOTICS: OUR FUTURE Prof. Rohan Munasinghe	2-2
GETTING READY TO FACE FUTURE CHALLENGES IN FOUNDATION ENGINEERING IN SRI LANKA Prof. H. S. Thilakasiri	3-3
RESEARCH PAPERS PRESENTED ON 26TH APRIL, 2014	
EVALUATION OF SOLAR THERMAL DRYING POTENTIAL RELATED WITH EXPORT AGRICULTURAL PRODUCT IN SRI LANKA S. Abeygunasekara	4-7
ENHANCE THE EFFICENCY OF AUTOMOTIVE AC SYSTEM BY USING EXHUAUST HEAT S. Abeygunasekara, S. K. Chandrasiri	8-11
NUMERICAL MODELLING FOR SHOCK ABSORBER HEALTH MONITORING OF PASSENGER CARS UNDER HARSH DRIVING CONDITION S. Abeygunasekara, T. Weerasinghe	12-15
GOOGLE SKETCHUP: 3D ENVIRONMENTAL MODELING TOOL FOR SUSTAINABLE LANDSCAPE DESIGNING D. A. M. S. Silva, D. Tal	16-22
ANALYSIS OF NON LINE OF SIGHT PROPAGATION ENVIRONMENT FOR RADIO FREQUENCY IDENTIFICATIO (RFID) INDOOR APPLICATIONS M. W. P. Maduranga, A. Taparugssanagorn	23-26
EXTRCTION AND CHARACTERIZATION OF PECTIN FROM YELLOW PASSION FRUIT (<i>Passiflora edulis f.flavicarpa</i> L) ENDOCARP PEEL S. Simmaky, G. Jaanaki	27-29
EFFECT OF WATER RECIRCULATION, AERATION AND pH OF SOAKING WATER ON MOISTURE ABSORPTION RATE OF PADDY DURING SOAKING G. G. K. P. S. Kumari, H. G. A. Udyani, D. A. N. Dharmasena, J. Mannapperuma	30-32
SIMULATION BASED STUDY ON METHODS OF REDUCING INDUCED DRAG ON LOW ASPECT RATIO WINGS A. L. N. A. Perera	33-36
A STUDY ON THE RELATIONSHIP BETWEEN THE MARTENSITE LAYER THICKNESS AND THE YIELD STRENGTH OF TMT REINFORCING BARS P. D. I. K. Karunaratne, S. L. Udawatta, S. P. Guluwita	37-38
EVALUATION OF CFRP/STEEL BOND PERFORMANCE UNDER TROPICAL ENVIRONMENTAL CONDITION IN SRI LANKA S. Abeygunasekara, T. I. Amarasinghe	39-42

APPLICATION OF SPACE SYNTAX, SPACEMATRIX AND MXI MODEL TO EXPLAIN URBAN MATURATION IN COLOMBO K. D. P. P. Jayasinghe, W. M. A. Bandara	43-46
LEACHING OF ALUMINUM AND ITS INCORPORATION TO RICE DURING COOKING UNDER DIFFERENT FLUORIDE CONCENTRATIONS IN WATER A. G. D Amarasooriya, H. A. Dharmagunawardhana	47-50
ANALYSIS OF THE EFFECT OF PLASMA CUTTING ON DEFORMATION OF THIN STEEL PLATES IN HULL CONSTRUCTION S. P. Guluwita, M. N. M. Faizer, G. H. T. D. Dharmarathne	51-52
EFFECT OF SOIL MOISTURE CONTENT ON <i>Jatropha curcas L.</i> DURING EARLY GROWTH STAGE N. C. Y. Jayasundara, L. W. Galagedara, D. K. N. G. Pushpakumara, J. Weerahewa	53-57
EVALUATING THE EFFECTIVENESS OF THE LOGISTIC NETWORK OF SRI LANKA (EXISTING VS PROPOSED) USING MULTIPLE CENTRALITY ASSESSMENT (MCA) J. Fahima, A. B. Jayasinghe	58-61
INTEGRATED REMOTE SENSING AND GIS IN LINEAMENT MAPPING FOR GROUNDWATER EXPLORATION – A CASE STUDY IN AMBALANTOTA, SRI LANKA W. L. Weerasekera, B. B. Mayadunne, I. P. Senanayake, D. M. D. O. K. Dissanayake	62-65
TIME ALIGNED VIDEO QUALITY MEASUREMENTS OF LONG HAUL SKYPE CALLS J. M. N. D. B. Jayasekara, T. Gunarathne, W. G. C. W. Kumara	66-69
EVALUATION AND COMPARISON OF AUTOMOBILE FUEL SYSTEMS, MOST APPROPRIATE TO SRI LANKAN AUTOMOBILE STANDARDS S. Abeygunasekara, V. P. Henry, G. D. D. L. A. Perera	70-74
SYNTHESIS OF GRAPHENE AND GRAPHENE OXIDE BASED NANOCOMPOSITES AND THEIR CHARACTERIZATION K. T. Dissanayake, K. M. N. de Silva, W. R. M de Silva, A. R. Kumuarasinghe	75-78
ANALYSIS OF TEXTILE SLUDGE TO DEVELOP A SLOW RELEASING ORGANIC FERTILIZER T. D. Maddumapatabandi, W. R. M. de Silva, K. M. N. de Silva	79-82
SYNTHESIS OF IRON OXIDE NANOPARTICLES AND FUNCTIONALIZATION WITH SILICA FOR DNA PURIFICATION W. T. D. Perera, W. R. M. de Silva, N. V. Chandrasekharan, K. M. N. de Silva	83-85
“WINSEER” FAILURE PREDICTION FOR DECISION MAKERS IN DATA CENTERS USING DATA MINING D. G. S. M. Wijayarathne, W. K. S. D. Fernando, M. P. L. Mendis, J. S. D. Fernando, A. S. M. S. Sharfaan, C. D. Manawadu	86-90
THE IMPORTANCE OF SOFTWARE METRICS: PERSPECTIVE OF A SOFTWARE DEVELOPMENT PROJECTS IN SRI LANKA W. K. S. D. Fernando, D. G. S. M. Wijayarathne, J. S. D. Fernando, M. P. L. Mendis, I. Guruge	91-95
STRESS ANALYSIS OF BICYCLE PADDLE AND OPTIMIZED BY FINITE ELEMENT METHOD S. Abeygunasekara, T. M. M. Amarasekara	96-100
RAINFALL INTENSITY-DURATION-FREQUENCY RELATIONSHIP FOR COLOMBO REGION IN SRI LANKA R. Suthakaran, K. Perera, N. Wikramanayake	101-104

OPTIMAL CONTROL OF URBAN SEWER SYSTEMS – WHERE DO WE STAND TODAY? U. S. Rathnayake	105-109
AN ASSESSMENT OF SEASONAL WATER QUALITY VARIATION IN THE INLETS OF DIYAWANNA LAKE, SRI LANKA U. Y. I. L. Dharmasoma, R. U. K. Piyadasa	110-112
GROUNDWATER QUALITY VARIATION IN KALPITIYA PENINSULA- SRI LANKA D. S. Mathara Arachchi, R. U. K. Piyadasa, D. Wikramasingha	113-115
USE OF BRICKS AS AN ALTERNATIVE FILTER MEDIA FOR PEBBLE MATRIX FILTERS (PMF) N. S. Miguntanna, C. P. G. Jayalath, C. Kariyawasam, H. A. K. C. Perera, S. M. Sriwarnasinghe, W. M. R. I. Wijerathna	116-118
WILLINGNESS TO PAY FOR WATER IN TOWNS EAST OF COLOMBO S. Gallege	119-122
TRAVEL SPEEDS AND TIME VARIATION ALONG A ROAD PROFILE: CASE STUDY ON KATUGASTOTA KURUNEGALA ROAD (A10) G. Galappaththi, L. Perera	123-123
WATER QUALITY CHARACTERIZATION OF MAJOR LAKES IN ANURADHAPURA AND IDENTIFICATION OF MAJOR POLLUTANT SOURCES, POTENTIAL MITIGATION AND MANAGEMENT STRATEGIES K. L. P. S. Perera, N. D. Imbulana, K. M. A. T. Kondasinghe, K. D. Salwathura, I. M. Chathuranika, L. B. Ellikewela, N. P. Miguntanna	124-130
CHALLENGES OF SUSTAINABLE WATER SUPPLY FOR CITIES LESSONS LEARNT IN REDUCTION OF NON REVENUE WATER IN COLOMBO, SRI LANKA W. B. G. Fernando	131-132
FACTORS INFLUENCING THE SELECTION PATTERN OF MULTI FORMAT FOOD ITEMS AMONG UNIVERSITY COMMUNITY IN MALABE, SRI LANKA M. Rajapakse, S. Wickramasinghe, N. Ludowyke, U. Abesinghe, D. Sooriyaarachchi, A. Gamage	133-136
COMPARISON OF WATER QUALITY STATUS OF MAJOR RIVERS IN SRI LANKA S. D. L. M. Welagedara, W. N. C. De Silva, U. K. Ilangasinghe, S. M. Iqbal, R. M. V. Araliya, N. P. Miguntanna	137-145
A SELF-BALANCING QUADCOPTER DESIGN WITH AUTONOMOUS CONTROL H. S. M. M. Caldera, B. W. S. Anuradha, D. M. G. K. P. Udgeethi, A. A. T. Surendra, B. R. Y. Dharmarathne, R. D. Ranaweera, D. Randeniya	146-150
SHEAR STRENGTH OF REINFORCED CONCRETE BEAMS WITH MINIMUM PERCENTAGE OF SHEAR REINFORCEMENT M. Gunathilake, I. Weerasinghe, C. Dharmasiri, P. Balasooriya, T. Jayasree, H. Premaratne, K. K. Wijesundara, U. I. Dissanayake	151-154
AUTOMATED DEFORMATION DETECTION USING REAL TIME GEOMETRICAL MEASUREMENTS FOR QUALITY CONTROL IN A PRODUCTION LINE J. K. M. Perera, M. D. C. Madapatha, D. B. Ilangasinghe, H. D. P. Madushanka, M. A. Musni, K. L. P. Shanika, R. M. T. P. Rajakaruna	155-158
AUTOMATED PRINTED CIRCUIT BOARD (PCB) DRILLING MACHINE WITH EFFICIENT PATH PLANNING P. L. S. C. Alwis, A. S. Premarathna, Y. P. Fonseka, S. M. Samarasinghe, J. Wijayakulasooriya	159-162
AUTONOMOUS OBSTACLE AVOIDING DIFFERENTIAL WHEEL DRIVEN ROBOT S. A. S. Yapa, K. Nerojan, D. Mahipala, C. L. Waga Arachchi, J. Wijayakulasooriya	163-166

CONTROLLING MOVEMENTS OF A ROBOTIC ARM THROUGH CAPTURING AND REPLICATING MOTION OF HUMAN ARM K. E. Kulenthiiaran, M. K. Hettihewa, R. M. C. H. Jayasinghe, H. M. K. P. Kulathunga, R. S. Dahanayake, R. M. T. P. Rajakaruna	167-170
DESIGN AND DEVELOPMENT OF AN AUTONOMOUS QUAD-COPTER G. G. Bhanuka, N. D. Silva, C. M. Liyanawadu, R. M. T. P. Rajakaruna	171-175
LASER PROJECTOR USING A SINGLE COLUMN OF LASERS TO DISPLAY MESSAGES A. Y. Abeysekara, N. C. Gammanage, Y. I. Gamage, I. M. Kaluarachchi, S. Dharmasena, J. Wijayakulasooriya	176-176
MECHANICAL GRIPPER DESIGN FOR HANDLING SOFT OBJECTS WITHOUT USING ELECTRONIC SENSORS G. Kodithuwakku, I. Katugampola, A. C. G. Perera, P. Hettihewa, S. Krishnananthan, S. Bandara, R. D. Ranaweera, D. Randeniya	177-180
TREEBOT: AN AUTONOMOUS TREE CLIMBING ROBOT UTILIZING FOUR BAR LINKAGE SYSTEM B. C. Widanagamage, T. N. Gallege, S. Salgado, J. Wijayakulasooriya	181-185
VALIDITY OF RANK SIZE RULE (GEORGE ZIPE, 1949), LAW OF PRIMATE CITY (MARK JEFFERSON, 1939) AND RANK SIZE CLASS CONCEPTS CASE OF SRI LANKA A. B. Jayasinghe, M. K. N. P. K. Dissanayake	186-191
AN ASSESMENT OF CONSUMERS' KNOWLEDGE, ATTITUDES AND HABITS IN RELATION TO FUNCTIONAL FOODS M. P. N. De Zoysa, D. M. E. Dissanayaka, S. D. N. C. Gunawardena, A. B. Wijesinghe, G. N. Shashikala, G. U. D. Nipunajith, P. Dias	192-196
EFFECTIVENESS OF FILTRATION IN CADMIUM REMOVAL IN A LOW COST DOMESTIC WATER PURIFICATION SYSTEM S. D. Jayasena, Y. U. A. Bandara, W. D. C. R. Wanniarachchi, S. K. Gunawardana, W. R. P. I. Weerakkody, U. D. N. N. Udawattha, R. Mallawaarachchi, N. P. Miguntanna	197-199
DESIGNING AND MODELLING OF A SINGLE SPAN ARCH BRIDGE TO THE EXISTING NINE ARCH BRIDGE IN DEMODARA K. Ramapriya, P. R. Kodikara, Mohammed Shameer, N. Gunasekara, N. Priyatharsana, S. W. Gunasekara, K. K. Wijesundara	200-200
IMPROVING THE PROPERTIES OF CONCRETE USING CARBON NANOTUBES U. Abinayaa, D. Chetha, S. Chathuska, N. Praneeth, R. Vimantha, K. K. Wijesundara	201-204
INVESTIGATION OF AIR POLLUTION IN SRI LANKA USING SATELLITE OBSERVATIONS P. L. S. Liyanage, M. A. M. Minsar, P. T. Munasinghe, M. T. M. Nishad, R. M. G. R. Rajapaksha, S. M. Wettewa, R. S. Mallawarachchi, A. P. Kaduwela	205-210
INVESTIGATION ON MECHANICAL PROPERTIES OF YELLOW BAMBOO J. H. Gallege, N. P. Kaluarachchi, P. G. M. P. Gallage, M. A. Dharmapriya, K. K. C. Panditha, M. H. Jameel, R. S. Mallawaarachchi	211-211