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IESL RoboGames 2020



Best Final Year Undergraduate Project

SRI LANKA SEC

Page 02

Research Initiatives, Accomplishments & Guest Lectures / Talks

Page 04

Academic Programs

Page 06

Conferences & Symposium

Page 07

Student Achievements Exhibitions, Field Trips & Workshops

Page 08

Clubs & Societies UOM Alumni

Research Initiatives, Accomplishments & Disseminations

Knowledge dissemination on ancient dye industry in Sri Lanka

Two newspaper articles written with the contribution of Senior Professor Ajith de Alwis of the Department of Chemical and Process Engineering, Professor Samudrika Wijayapala, Dr. Virajini Medagedara Karunaratne, Dr. Gayathri Ranathunga of the Department of Textile and Clothing Technology, providing valuable insight to Sri Lankans regarding the ancient, sustainable and natural dye industry in Sri Lanka were published in Sunday Times

and Ceylon Today in November 2020. These articles can be accessed through the following URLs.

1. Let's learn lessons from the culture (<https://www.pressreader.com/sri-lanka/sunday-times-sri-lanka/20201108/282707639582950>)
2. Sustainable natural dye industry (<https://ceylontoday.lk/news/sustainable-natural-dye-industry>)

High voltage engineering research group presents papers at IEEE EPEC 2020

Students of the department of Electrical Engineering has presented three papers at IEEE Canada Power and Energy Conference, virtually on November 9-10, 2020.

The paper titled 'Localizing Hotspot in an Oil Immersed Distribution Transformer Using Finite Element Analysis' is based on a final year undergraduate project carried out by Gevindu Ediriweera, Kalpa Wickramasinghe, Irupa Sithmini and Anupa Ekanayake.

The paper titled 'Determination of Magnetization Characteristics of a Three-Phase Transformer Using Inrush

Current Waveform' is based on a final year undergraduate project carried out by Dohitha Yapa, Danuka Benthavithana, Nirodh Rathnaweera and Thushari Wimalaratne.

The paper titled 'Influence of Thickness of Solid Insulators on Creeping Discharges Propagating over Epoxy and Glass Insulators Immersed in Coconut Oil' is based on a Masters by research project carried out by Samapath Ediriweera and Pramod Jayarathna.

The projects were supervised by Dr. Rasara Samarasinghe and Prof. Rohan Lucas.

Guest Lectures / Talks

Keynote presentation at the Vavuniya campus

A keynote presentation on the topic "Lesson from the virus: unlocking the sustainable technology" was delivered by Senior Professor Ajith de Alwis of the Department of Chemical and Process Engineering, University of Moratuwa at the First Annual Research Sessions 2020 (FARS2020), Faculty of Applied Science, Vavuniya Campus on 2nd of December 2020 via zoom.

Keynote presentation at the University of Peradeniya

A keynote presentation on the topic "The role of a Chemical Engineer in the post-pandemic economy" was delivered by Senior Professor Ajith de Alwis of the Department of Chemical and Process Engineering, University of Moratuwa at the VOYAGE Annual Research and Design Symposium organized by the Department of Chemical and Process Engineering, University of Peradeniya, in collaboration with the Society of Chemical and Process Engineering Students (SCaPES), University of Peradeniya on 12th of December 2020 via zoom.

"Ethics in Engineering Research" for SLAAS and IESL Webinar

"Ethics in Engineering Research" webinar under the topic "Ethics in Engineering Research" was delivered by Senior Professor Ajith de Alwis of the Department of Chemical and Process Engineering on the 10th November 2020 via zoom. This webinar was organized by the General Research Committee of the Sri Lanka Association for the Advancements of Science (SLAAS) and Continuing Professional Development Committee of The Institution of Engineers Sri Lanka (IESL).

Building Economics and Management Research Unit (BEMRU) RESEARCH COLLOQUIUM

Building Economics and Management Research Unit (BEMRU) conducted its 69th research colloquium on the “Assessment of demand and supply of Sri Lankan Quantity Surveyors” and “Career Adaptivity: The Effective Adaptation of Quantity Surveyors to Changing Demands” at the Department of Building Economics, University of Moratuwa on 15th December 2020. The guest speakers were Dr. Thanuja Ramachandra, Senior Lecturer and Prof. Udayangani Kulatunga, Professor, attached to University of Moratuwa. The presentations were followed by a lively discussion on the future of quantity surveying profession.

Guest Lecture on “Role of Facilities Manager in Industry”

An online guest Lecture on “Role of Facilities Manager in Industry” was delivered to the Level I Quantity Surveying and Facilities Management undergraduates of Department of Building Economics on 30th December 2020 by Ms. Amaya Rodrigo, Manager - Sustainability & Compliance, Cinnamon Hotels & Resorts.

Guest Lecture on “ICTAD Price Fluctuation FORMULA”

An online guest Lecture on “ICTAD Price Fluctuation Formula” was delivered to the Level IV Quantity Surveying undergraduates of Department of Building Economics on 17th December 2020 by ChQS. Deepa Samaraweera, Assistant Project Director (Procurement), Strategic Cities Development Programme.

Guest Lecture on “Use of Insurances in Managing Construction Risks”

An online guest lecture on “Use of Insurances in Managing Construction Risks” was delivered to the Level III Quantity Surveying undergraduates of Department of Building Economics on 2nd December 2020 by ChQS. Prasad Jasinghe, Managing director, 3G Consultants Pvt. Ltd.

Professor Priyan Dias delivered the keynote speech on the topic

“Medicine as Engineering” at the Annual Research Symposium 2020 of the Faculty of Medicine at the University of Colombo



Professor Priyan Dias was the chief guest and keynote speaker at the Annual Research Symposium 2020 of the Faculty of Medicine at the University of Colombo on 14th December 2020. He delivered a lecture on the topic “Medicine as Engineering” at the Board Room of the Faculty of Medicine, with the Vice-Chancellor of the University (Prof. Chandrika Wijeyaratne) and Dean of the Faculty (Prof. Vajira Dissanayake) in attendance, but with most participants joining online. The lecture highlighted the fact that both medicine and engineering use science as a central element of their practice; an element however that needs to be overlaid with many layers of professional judgement, involving idealization, margins of safety, and other broader aspects of practice comprising context and a governing philosophy. The lecture concluded by portraying science, engineering and medicine as specializations of the broader everyday human practices of thinking, making and caring respectively.

Presentation to the Hayleys Sustainability Team

An invited presentation to the Hayleys Sustainability Team on the topic “Leadership in Sustainability” was delivered by Senior Professor Ajith de Alwis of the Department of Chemical and Process Engineering, University of Moratuwa on 3rd December 2020.

A discussion on Sri Lanka Maritime Industry during & beyond Covid-19



Society of Transport and Logistics held its 5th webinar of the series of webinars conducted in collaboration with Hayleys Advantis Ltd., on 25th of November 2020. Capt. Lasitha Cumaratunga, Member of Group Management Committee, Hayleys Advantis Limited, Mr. Ricky Barnett, Director of Hayleys Energy Services conducted this webinar on Sri Lanka Maritime Industry during & beyond Covid-19.

EESoc Guest Lecture - Emerging Trends in the Power Industry and Career opportunities for Electrical Engineering Graduates



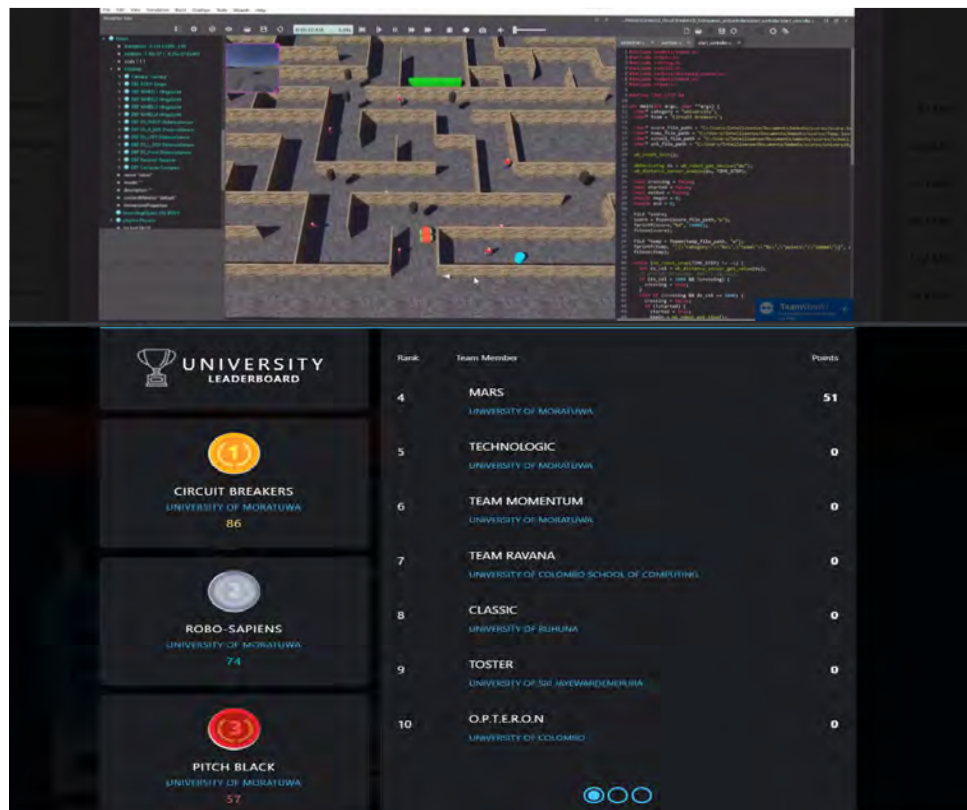
Electrical Engineering Society (EESoc) organized a virtual guest lecture by Dr. Dharshana Muthumuni, which was held successfully on 26th November 2020.

Dr. Dharshana Muthumuni, Managing Director of the Power Systems Technology Centre Manitoba Hydro International Ltd., Winnipeg, Manitoba, Canada shared his experience under the topic, “Emerging Trends in the Power Industry and Career opportunities for Electrical Engineering Graduates”.

Academic Programs

IESL RoboGames 2020

[From front page]



“IESL RoboGames 2020” was held on the 28th of November 2020 as the **first ever virtual robotic competition in Sri Lanka**. RoboGames has been a key event of Institute of Engineers, Sri Lanka (IESL) since year 2013 organized by The Department of Computer Science and Engineering in collaboration with the IT & Sectional committee of the IESL. Sri Lanka Telecom PLC has been powering up the event since year 2017. RoboGames is aimed at promoting and recognizing the talents and skills of the next generation of professionals in a rapidly advancing area like robotics.

This time the competition based on Webots, a robot simulation software platform that offers a prototyping environment for users to access necessary virtual hardware and test their programming capability. The two categories of competitors, namely school category and university category competed with their mobile robots in a maze of a city to complete a task themed on Covid-19 pandemic. The competitors designed a virtual mobile robot with necessary sensors and control and programmed it to navigate through the maze to reach a pre-defined destination from a common initial position. The robot had to avoid the Covid infected pedestrians in the maze and

reach as many sanitizer points as possible to score points along the path. University category was challenged to use computer vision-based navigation while the school category was allowed to react to markers placed on the maze.

A series of successful online workshops and awareness sessions were conducted to introduce the concept of robotics and prepare the competitors. RoboGames 2020 was a success with the registration of over 20 teams in School Category and 44 teams in University Category spanning many districts across the country thus breaking the barrier of lack of knowledge and facilities for robotic fans and newbies. Four teams from the School category and 7 teams from the University category were through to the final.

Eng. Vidula Hasaranga, Eng. Rusiru Boralugoda and Eng. Kushan Sharma were the panel of industry experts at the grand finale and the competition concluded with an exhaustive evaluation to review code quality, robot design, and the competitors’ understanding and creativity with algorithms in addition to the simulation score. Team Trix from Maliyadeva College, Kurunegala won the School Category while Team Circuit Breakers from University of Moratuwa won the University Category.

Guest Lecture on “Building materials - Water proofing”

An online guest lecture on “Building materials - Water proofing” was delivered to the Level II Quantity Surveying and Facilities Management undergraduates of Department of Building Economics on 6th November 2020 by ChQS. Chandana Geeganage, Project Director, Salasi Lanka (Pvt) Ltd.

Guest Lecture on “Electrical Supply Systems to Building Facilities”

An online guest lecture on “Electrical Supply Systems to Building Facilities” was delivered to the Level III and Level IV Facilities Management undergraduates of Department of Building Economics on 11th November 2020 by Mr. Indradeva Mendis, Facilities Management Consultant.

PandemiQUIZ 2020, the Intra-departmental online quiz competition, organized by Society of Transport & Logistics

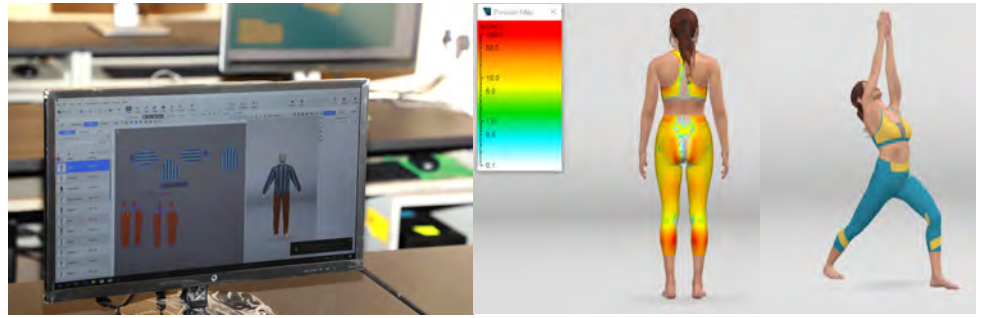


PandemiQUIZ 2020, the Intra-departmental online quiz competition, organized by Society of Transport & Logistics was held on 5th of December 2020. The competition was graced with the presence of the Head of the Department of Transport and Logistics Management, Prof. Amal S. Kumarage and patron of the Society of Transport and Logistics, Dr. Indika Sigera. All four batches from the Department of Transport and Logistics Management participated at the event by forming into four separate groups.

Establishment of 3D CAD tool for Virtual prototyping at the Department of Textile & Apparel Engineering



3D clothing simulation has become an integral part of digital product development and, it generates smart workflow in mass production to cater personalized products. The virtual prototyping by 3D CAD systems provides an accurate representation of the fit of clothing based on technical inputs. In line with this digitalization, the CAD Laboratory- 1 has recently acquired 3D CAD software tools for virtual prototyping in fulfilling a long-felt need of the Department. This 3D CAD resource consists of three



VStitcher workstations and thirteen Gerber AccuMark 3D workstations. The undergraduate students and postgraduate students will be able to master those tools within their academic curriculum in future. Further, this resource establishment will lead to excel links in collaborative Research

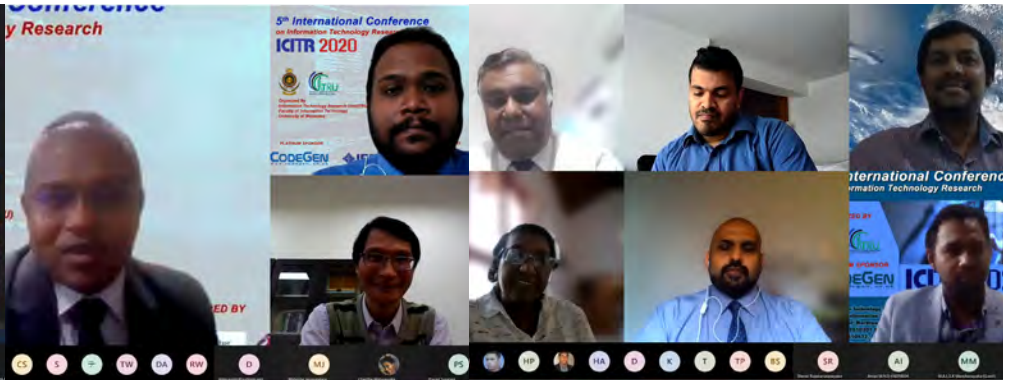
and Development activities. Contact Dr. Jayamali De Silva, Senior lecturer in apparel CAD teaching, for further details of this project. This project has carried out under the guidance of Head of the Department Prof. (Mrs) Samudrika Wijayapala.

5th International Conference on Information Technology Research (ICITR 2020)



The 5th International Conference on Information Technology Research (ICITR 2020) was held from 2nd to 4th December 2020. This is an annual event organized by the Information Technology Research Unit (ITRU), which is the research dissemination arm of the Faculty of Information Technology, University of Moratuwa, Sri Lanka. Considering the restrictions made in the light of the COVID-19 pandemic the event was held as an innovative virtual conference.

The theme of the conference was 'Towards the New Digital Enlightenment'. The conference's main focus was to provide a forum to discuss the rapid advances being made in research and development in Digital Transformation. The conference scope included subareas of ICT including but not limited to Web Intelligence, Network Mobility Management, Embedded Systems, Decision Making and Risk Management, Psycholinguistics and Language Processing, Cognitive Mechanisms of Decision Making, Artificial Intelligence, etc.



Prof. Kento Morita, Assistant Professor, Graduate School of Engineering, Mie University, Japan, Dr. Varuna De Silva, Senior Lecturer in Machine Intelligence at Loughborough University, the United Kingdom and Prof. Genci Capi, Professor Department of Mechanical Engineering, Hosei University, Japan delivered the key note speeches at the Session 1, Session 2 and Session 3 respectively.

The conference offered a panel discussion on the topic 'The Role of Information Technology in Tomorrow's World'. Mrs. Vishaka Nanayakkara, Chairperson-Centre for Open & Distance Learning (CODL), University of Moratuwa; Mr. Nuwan Perera, Vice President Commerce, IFS R&D International Ltd; Mr. Thilan Kannangara, Manager, Digital Customer Service, Hutchison Telecommunications Lanka (Pvt) Ltd. served as the panel members. The panel was moderated by the Professor Chandimal Jayawardena, Dean, Faculty of Computing, Sri Lanka Institute of Information Technology.

ICITR 2020 was technically co-sponsored by IEEE Sri Lanka Section, IEEE Computer Society of Sri Lanka (CSSL) and IEEE Robotics and Automation Society, Sri Lanka Section. All the accepted papers to the ICITR 2020 indexed in IEEE Xplore Database. The main financial sponsor of the conference was CodeGen (Pvt) Ltd. ICITR 2020 received around 65 research papers, and 26 papers were accepted by maintaining the acceptance ratio around 42%. Papers which were not selected for full paper publication in ICITR 2020 had been considered as short papers for the ITRU Research Symposium 2020 with the aim of providing constructive feedback for young researchers.

The 6th International Conference on Information Technology Research (ICITR 2021) will be held 1-3 December, 2021 at the University of Moratuwa, Moratuwa, Sri Lanka.

Conferences & Symposium

Transport Research Forum (TRF 2020) organized by the Transportation Engineering Division of the Department of Civil Engineering

The annual conference, Transport Research Forum (TRF) organised by the Transportation Engineering Division of the Department of Civil Engineering, University of Moratuwa was held on 11th and 12th December 2020 for the 13th consecutive year. Due to the COVID-19 pandemic situation, it was conducted as a virtual conference this year, but with a

prolific number of around 30 technical papers split between 2 parallel oral sessions with the participation of practitioners, researchers and academics including several international experts in the areas of Highway Engineering, Transportation Engineering and Planning along with representatives from the industry and the related government institutions of

Sri Lanka. Prof. WK Mamppearachchi of the Department of Civil Engineering, University of Moratuwa was the Conference Chair, while Mr. Prageeth Gunarathna and Chamod Hettiarachchi delivered the keynote speeches of the 2 parallel oral sessions as guest speakers.

ISERME 2020: International Symposium on Earth Resources Management & Environment



“ISERME 2020”, the fourth consecutive International Symposium, organized by the Department of Earth Resources Engineering was held on 22nd December 2020 on a virtual platform. However, the inauguration was done at the Conference Room of the FGS on hybrid mode. The symposium was an international forum for participants from various countries to come together and showcase their latest findings across a broad range of disciplines

related to Mining and Earth Resources Engineering in the themes of Mining, Tunnel Engineering & Rock Blasting, Engineering Geology & Geotechnical Engineering, Mineral Exploration & Groundwater Studies, Mineral Processing & Value Addition, Ocean Resources Engineering & Petroleum Engineering, and Disaster, Resources Management & Environmental Engineering.



The event helped the department to further strengthen its network with relevant local and international industrialists, academics and researchers.

SNLP Symposium 2020 : Symposium on Natural Language Processing - 2020



The 6th annual Symposium on Natural Language Processing - 2020 (SNLP 2020) took place as a virtual event, organised by the National Language Processing Centre

of University of Moratuwa which aimed to foster the NLP based research work in Sri Lanka. This symposium facilitates linguists, computer linguists, computer scientists to

share and discuss their research and ideas. The keynote speaker was Prof. Asif Ekbal from the Department of Computer Science and Engineering, IIT, Patna who delivered a speech on Teaching Conversational Machines with Human Affects. Around 27 studies were submitted and presented in this symposium, and they are mainly from University of Peradeniya, University of Colombo School of Computing, Sabaragamuwa University, University of Moratuwa, Eastern University, Sri Lanka Institute of Information Technology, National School of Business Management, and Department of Official Languages.

Student Achievements

Best Final Year Undergraduate Project of 15 Batch of Department of Electrical Engineering - Develop A Series-Arc Fault Detector To Minimize The Risk Of Domestic Electrical Fires [From front page]



The project titled “Develop a Series-arc Fault Detector to minimize the risk of domestic electrical fires” has been selected by the Department of Electrical Engineering as

the best final year undergraduate project of 15 batch. The group members are Sachini Somathilaka, Nadun Senarathna, Hasinthaka Hewapathirana, Kaushalya

Sumathipala, and the project is supervised by Prof. Udayanga Hemapala, Prof. Rohan Lucas and Dr. Narendra De Silva.

The project was also awarded the Best Poster Award at MERCon 2019, the Eng. EW Karunarathna Award for the Best Undergraduate Project in Electrical Engineering 2019 / 2020 (Awarded by Institute of Engineers Sri Lanka), and Manamperi Main Award 2019 for the Best Inter University Final Year Undergraduate Project in Engineering - Group Category (Awarded by Sri Lanka Association for the Advancement of Science). We would like to congratulate the team members for a job well done.

Exhibitions, Field Trips & Workshops

361 CV Development Session



361 Program conducted a very successful panel discussion with the collaboration of two experienced human resource professionals on 26th of November 2020 with the purpose of providing a clear guidance on CV development for the final year undergraduates. Mrs. Sunali Govipalgoda, Human resource Manager at MAS Holdings and Mrs. Eroscha Fernando, Human resource Manager at Nestlé acted

as the resource persons of the panel and they provided clear insights on how CV needs to be built up. Moving beyond the traditional lecture delivering model, the session was conducted with an exact focus of solving the issues arise for the students during CV development process. Department of Chemical & Process Engineering, University of Moratuwa would like to extend sincere gratitude towards Mrs. Eroscha Fernando and Mrs. Sunali Govipalgoda for their valuable participation in the panel discussion and wish all the very best to both professionals for their future endeavors.

Electrical Engineering Undergraduate Students Received the Best Paper Award at The IESL Young Members' Technical Conference 2020

The paper submitted by the final year project group “Smart Device for DC Side Fault Detection and Prediction for Solar PV Systems” of Electrical Engineering Department won the “Eng. Chandrasena Award” for the Best Paper at the IESL Young Member Technical Conference 2020. The project group comprises with PW Dewapura, MMSD Ranasingha, BDS Premanath and KM Ramanayake and the group is supervised by Dr. Asanka Rodrigo.

Senior Professor Ajith de Alwis participated in the ISO 14000 (ISO/TC 207) as the Head of Delegation in Sri Lankan country group

Senior Professor Ajith de Alwis of the Department of Chemical and Process Engineering, University of Moratuwa participated in the ISO 14000 (ISO/TC

207) Virtual Plenary Session as the Head of Delegation (Sri Lankan country group) on the 19th and 20th November 2020.

Staff Development Programme on Research Support Activities



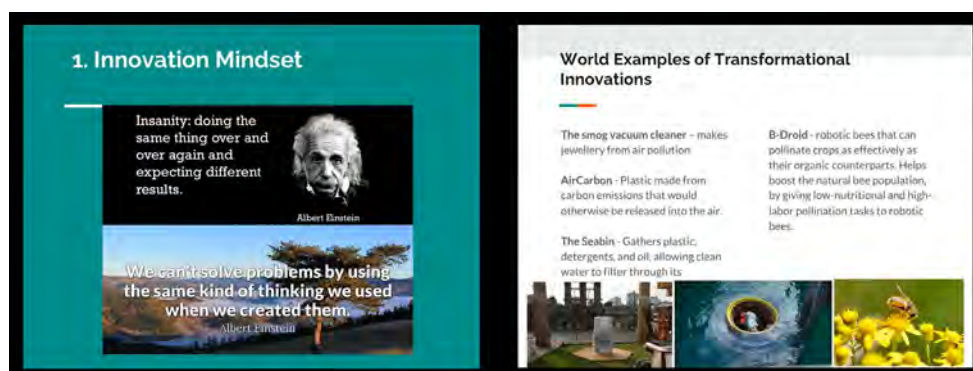
In order to expand the research support services, Library, University of Moratuwa commenced a Staff Development Programme. Two guest

lectures were conducted on 9th December, 2020 in the Library Auditorium. Dr. (Eng.) Ranil Shanaka Sugathadasa, Senior Lecturer, Department of Transport

and Logistics Management and the Founder of The Motivator conducted a session on “The Miracle Power of Little Bit : Bringing Research Support Activities of UoM Library to Next Level.” Dr. Ranga Rodrigo, Senior Lecturer, Department of Electronic and Telecommunication Engineering joined the session via Zoom to share his views on “Research Needs and Expectations of Faculty of Engineering to Expand the Current Role of Library” in the staff development programme.

Clubs & Societies

Explorer 2.2: Developing an innovative mindset



Explorer 2.2', the second session of the Explorer series in 2020/2021, organized by the Research for Undergraduates (R4U) club of Department of Chemical

and Process Engineering, was held on the 13th of November 2020 via the Zoom Video conferencing platform and with the participation of the guest speaker,

Dr. Pujitha Silva, senior lecturer of Department of Electrical and Telecommunication Engineering. The session was on “Developing an innovative mindset”, including self-awareness, mindset shift, self-evaluation, handling stress, and current world problem and how to give engineering-based solutions to them. The audience for the session were the undergraduates of the Faculty of Engineering, University of Moratuwa and the academic staff members of DCPE. More than 45 participants were present for the session and it concluded with an interactive question and answer session.

UOM Alumni

Book donation from Distinguished Professor Buddhima Indraratna



The Library of University of Moratuwa wishes to acknowledge Distinguished Prof. Buddhima Indraratna, Director, Transport Research Centre, School of Civil and Environmental Engineering, University of Technology, Sydney, Australia (<https://profiles.uts.edu.au/Buddhima.Indraratna>) for his valuable book and

journals donation, offered from his personal library.

The donation containing books, conference proceedings and journals contributes vastly to develop the collection which contains valuable international literature mainly in the field of soil engineering.

In this donation, special thanks and appreciation go to Mr. Rohitha Silva, Technical Director, Bridge & Civil Structures, Beca, Sydney, Australia, for the interest and all efforts taken to send the donation, bearing the total shipping

costs including custom duties and delivery charges to library door step.

Our appreciations also go to PhD research students of Prof. Buddhima's both University of Moratuwa (UoM) and University of Ruhuna (UoR) alumni who helped to sort out the books and bring them from University of Wollongong to Sydney and to Indunil Kariyakanage, UoM, alumni, who helped to pack and deliver books to Trico, Sydney for shipment.

Vice Chancellor University of Moratuwa truly appreciates the support to UOM staff and students and for selecting Library, UOM to donate this invaluable donation.

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