



iMEDiTEC 2021
INTERNATIONAL MEDICAL DEVICES AND TECHNOLOGY CONFERENCE

3rd ICBME2021
INTERNATIONAL CONFERENCE ON BIOSCIENCES AND MEDICAL ENGINEERING



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

iMEDiST

INTERNATIONAL JOINT CONFERENCES ON
MEDICAL ENGINEERING, SCIENCE & TECHNOLOGY

FACULTY OF ENGINEERING, UNIVERSITI TEKNOLOGI MALAYSIA, JOHOR BAHRU
29th - 30th JUNE 2021

'SYNERGY FOR FUTURE SUSTAINABILITY'

CONFERENCE PROGRAMME BOOK

Organisers



UTM
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School of
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and Health Sciences



iHumEn
Institute of Human Centered Engineering



MEDiTEC
Medical Devices and Technology Centre

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'SYNERGY FOR FUTURE SUSTAINABILITY'

iMEDiST2021 is an international conference which will be held virtually on 29th – 30th June 2021 in Universiti Teknologi Malaysia, Johor Bahru, Malaysia. This 2-day virtual conference is a joint conference between International Conference on Medical Devices and Technology (**iMEDiTEC2021**) and International Conference on Biosciences and Medical Engineering (**ICBME2021**).

iMEDiST2021 provides a platform for scientists, medical practitioners, researchers, engineers, academics, industrial players, government bodies and students to present their latest scientific findings and development in biomedical and biosciences areas. It is also a great avenue where all participants can share their experiences as well as to explore new ideas and collaborations, with the aim of developing new projects and technology within biomedical and bioscience fields which will provide beneficial impact to the community. **iMEDiST2021** is also an excellent place to broaden your networking with respected players in related areas.

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FOREWORD BY THE PATRON

Bismillahirrahmanirrahim

It is my great pleasure to welcome all participants and eminent speakers to the International Joint Conferences on Medical Engineering, Science & Technology (iMEDiST2021) virtually here at Universiti Teknologi Malaysia, Johor Bahru, Johor, Malaysia on 29th – 30th of June 2021.

The theme of this conference. “Synergy for future sustainability”, was chosen to encourage discussion to provide solutions toward the increasing challenges in medical engineering, sciences and technology due to continuous demand in healthcare sector. Biomedical advances have provided methods to prevent and treat infectious diseases. The innovations have greatly reduced human suffering and enhanced sustainability by allowing people to live longer and healthier lives. In ongoing COVID-19 crisis, biomedical engineers and scientist worldwide has become the hidden heroes in combating the SARS-CoV-2 virus. With the increased demand for ventilators and other medical equipment, the role of medical technology in healthcare management is undoubtful. At the same time, prevention through vaccine engineering, diagnostic, monitoring, and therapy shows the impact of biomedical science in healthcare management.

Therefore, we are committed to bring iMEDiST2021 as s a platform to share the latest scientific findings and to foster future collaboration and networking. The conference provided a unified communication platform for researchers in a range of topics such as artificial intelligence, ergonomics, signal processing, advanced materials, tissue engineering, biofluid, bioinstrumentation, medical diagnostics, biomechanics, biomedical devices, medical sciences, healthcare technologies, biosciences, and animal sciences.

FOREWORD BY THE PATRON

The participants for both conferences are coming from all over the world including Indonesia, Japan, United Kingdom, and Pakistan. We have received around 270 participants who take part in either oral or poster presentations. We are very fortunate to have support from School of Biomedical Engineering and Health Science Institute of Human Centered Engineering (iHumEn), Medical Devices and Technology Centre (MEDiTEC) as the conference organizers.

We are proud to announce our conference co-host Universitas Hasanuddin, Universitas Airlangga, National Chung Hsing University (NCHU), Bioactive Material Focus Group (BioMa) Universiti Tun Hussein Onn Malaysia, Center of Excellence Advanced Computing (ADVCOMP) Universiti Malaysia Perlis and Sport Engineering Advance Research Group (SPEAR) Universiti Tun Hussein Onn Malaysia. We are grateful to our collaborators Kumpulan Perubatan Penawar Sdn Bhd, E Life Solutions (ELS) and Mindmatics Sdn Bhd for sponsoring the awards for undergraduate poster competition.

Last but not least, special thanks are due to the more than 30 organizing committees for their dedications in making this event successful despite all the difficulties and challenges due to the pandemic.

Thank you!

*Prof. Dato' Ir. Dr. Mohammed Rafiq Bin
Abdul Kadir*
**PATRON
IMEDIST 2021**



BIOGRAPHY : KEYNOTE SPEAKER 1



Prof. Dr. Congo Tak-Shing Ching
National Chung Hsing University, Taiwan

Professor Congo Tak-Shing Ching obtained his BSc (Hons) in Prosthetics and Orthotics with first class honor from The Hong Kong Polytechnic University (PolyU) in 1999 and received his MPhil in Biomedical Engineering from PolyU in 2002. He went on to gain a PhD in Bioengineering from the University of Strathclyde, Glasgow, UK, in 2005. His main interests in research are in the area of biomedical instrumentation design, biosensors, tissue bioimpedance, biomedical electronics, biomedical optoelectronic, non-invasive medical diagnostics, and assistive technology. He is now serving as a Professor at the Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taiwan.

BIOGRAPHY : KEYNOTE SPEAKER 2



Prof. Dr. Tunku Kamarul Zaman Tunku Zainol Abidin
University of Malaya Medical Center (UMMC)

Professor Dr. Tunku Kamarul Zaman is the director of University of Malaya Medical Centre (UMMC). He is by profession an orthopaedic surgeon with special interest in upper limb and microsurgery. He obtained a medical degree (M.D.) from the National University of Malaysia in 1998. After serving the Ministry of Health as a medical officer, he entered the Masters of Orthopaedics speciality training program i.e. M.S.(Ortho), in University of Malaya in 2000 and was later inducted as a lecturer in the same university upon completing his training in 2004. He obtained his PhD degree from The University of Liverpool. He is presently registered with the medical councils in the UK and Malaysia. He has received many accolades and has since been appointed as Professor from University of Malaya in 2011 at the age of 38. He has since been nominated and appointed as adjunct and honorary professors in several local and international universities; as well as board members and expert panellist in several organizations including at the Ministerial level.

BIOGRAPHY : KEYNOTE SPEAKER 3



Prof. Dr. Nashi Widodo
Universitas Brawijaya, Indonesia

Prof. Widodo is professor of Molecular biology of Aging at Brawijaya University Indonesia. He graduated Bachelor in the same university at 1998 and got at magister degree of genetic and molecular biology at Bandung Institute of Technology, Indonesia in 2001. He got JICA fellow for training on cell and molecular of cancer at AIST-Tsukuba, Japan on 2003, then continue enroll in doctoral course on medical school at the university of Tsukuba and graduated on 2008. Then, he joined Brawijaya University, Indonesia as assistance Professor; and got full professor position at the university in 2017. He has experience as visiting Professor at Ristumeikan University-Japan (20017-2019). He was also appointed as Head of Central Laboratory for Life Sciences at the Brawijaya University; and active as Editor and reviewer in some International of Scientific journal. He now active research on elucidation the molecular mechanism of JAMU (Indonesia traditional medicine) by using Metabolomic, Metagenomic and Bioinformatic approach.

BIOGRAPHY : KEYNOTE SPEAKER 4



Dr. Adnan Bin Sulaiman
Medical Penawar Group

Dr. Adnan Sulaiman earned his medical degree from Universiti Kebangsaan Malaysia in 1987. After serving as a Medical Officer with the Ministry of Defence, he went on to serve as a trainee lecturer at UKM's medical faculty,. In 1992 he started Penawar Medical Group. It has since grown into one of the country's leading integrataded healthcare groups. Penawar today operates a chain of polyclinics, chain of therapy centres for children with learning disabilities, a hospital in Pasir Gudang and a Traditional Chinese Medicine (TCM) centre. In addition to his training and expertise as a clinician, Dr Adnan has found his niche in the use of cutting edge technology in the field of healthcare. This is evident in the technology-driven culture he has developed in the operations of Penawar Medical Group. He is a strong proponent of the idea that technology has the power to make healthcare more effective and more accessible by the masses

PROGRAMME SCHEDULE

| Time | Day 1 29 June 2021 |
|----------|--|
| 8.15 am | Registration |
| 8.30 am | Welcoming Speech by: Patron iMEDIST Prof. Dato' Ir. Dr. Mohammed Rafiq Bin Abdul Kadir |
| 8.35 am | Opening Speech by: CEO Medical Device Authority (MDA) En. Ahmad Shariff Hambali |
| 9.00 am | Opening Ceromany: Vice Cancellor UTM Prof. Datuk Ts. Dr. Ahmad Fauzi Ismail |
| 9.20 am | Keynote 1 - Prof. Dr. Congo Tak Shing Ching Bioimpedance for non-invasive biomedical applications |
| 10.00 am | Break/Transition |
| 10.10 am | Parallel Session 1 |
| 12.20 pm | Lunch Break |
| 2.00 pm | Keynote 2 - Prof. Dr. Tunku Kamarul Zaman Tunku Zainol Abidin Orthopaedic implant designs: Current trends and future development |
| 2.40 pm | Break/Transition |
| 2:50 pm | Parallel Session 2 |
| 5.10 pm | End of session |
| Time | Day 2 30 June 2021 |
| 9.00 am | Keynote 3 - Prof. Dr. Nashi Widodo Integration of Bioinformatic and Omics technology for elucidating Health promotion of JAMU |
| 9.40 am | Break/Transition |
| 9: 50 am | Parallel Session 3 |
| 12.20 pm | Lunch Break |
| 2.00 pm | Keynote 4 - Dr. Mohd. Adnan Sulaiman Biomedical Engineering- Spurring Medical Growth |
| 2.40 pm | Award Ceromany Undergraduate Poster Award Poster Award Best Presenter Award Best Paper Award Best of the Best Award |
| 3.30 pm | Closing Speech Chair iMEDITEC 2021 Dr. Norjihada Izzah Binti Ismail |
| 3.45 pm | Closing Speech Chair iCBME 2021 Prof. Dr. Kahar Bin Osman |
| 4.00 pm | End of Conference |



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IMEDITEC 2021

INTERNATIONAL MEDICAL DEVICES AND TECHNOLOGY CONFERENCE

PROGRAMME BOOK



ORGANIZERS AND CO-HOST



iHumEn is a multidisciplinary research institute is combination of experts and the faculty's strengths from computing, electric/electronic, robotic, mechanical, biomedical engineering. iHumEn explore the potential of human-centered technology to enrich, benefit and transform our life. Sport Innovation Technology Centre (SITC), IJN-UTM Cardiovascular Engineering Centre, Medical Devices and Technology Centre (MEDiTEC) and Media and Game Innovation Centre of Excellence (MaGICX) are the research centres in iHumEn.



MEDiTEC is officially established as a research center in UTM on 12 February 2019. With the increasing demand in medical devices and technology, UTM entrusted MEDiTEC to lead in research and development as well as producing local medical devices product in fulfilling the government key focus in health care. We believe strongly in the value of interdisciplinary pursuits in this challenging field where engineering techniques and technologies from various disciplines are utilised to address needs within the medical industries and healthcare services.



**UNIVERSITAS
AIRLANGGA**

The establishment of Universitas Airlangga was based on continuous innovation and a university self-reliance approach that fits the global trend in higher education. This approach has been, and still continues to be, is designed to produce good quality workforce and to attract highly qualified students and researchers from around the world, generating new knowledge and transforming them into social and economic benefits.



**UNIVERSITAS
HASANUDDIN**

Universitas Hasanuddin which is abbreviated as Unhas, is one the largest autonomous universities in Indonesia. It is located in Makassar, South Sulawesi, Indonesia. Unhas was established on September 10, 1956, and named after Sultan Hasanuddin. Unhas is one of the most prominent universities in Indonesia's eastern part and also known as a center of excellence in developing human resources, science, technology, art, and culture.

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WELCOMING REMARKS

Assalamualaikum and Greetings

It is my great pleasure to welcome you to the International Medical Devices and Technology Conference (iMEDiTEC 2021) here at Universiti Teknologi Malaysia, Johor Bahru, Johor, Malaysia on 29th & 30th of June 2021. Together with International Conference on Biosciences and Medical Engineering (ICBME 2021), these two conferences are joined under the umbrella of International Joint Conferences on Medical Engineering, Science and Technology (iMEDiST). Therefore we, organizing committee are truly delighted to receive participation from both locals and internationals including from Indonesia, Japan, Pakistan, and United Kingdom in the iMEDiTEC 2021 and iMEDiST as a whole. I also wanted to take this opportunity to welcome and thank our respective keynote speakers, co-hosts and sponsors who have been supporting this joint conference ever since last year where we have to postpone this joint conference due to the COVID 19 pandemic.

WELCOME, SELAMAT DATANG, ようこそ, خير مُقدم

Specifically, in this conference, several key areas related to medical devices and technology are highlighted including but not limited to: artificial intelligence, signal processing, medical implant technology, bio-instrumentation, advanced materials, biomechanics, tissue engineering, biofluid, medical diagnostics and ergonomics. With the aims of bringing closer the researchers, clinicians, academics and students from all over the world, I hope that this conference can be a platform that foster future collaboration, extend networking as well as examine the issues related to medical devices and technology in healthcare. On top of that, it is hoped that this virtual meeting can bring more rooms to the participants to exchange ideas, findings and information on the improvised and/or new technology and invention in medicine. It is noteworthy that our modern medicine is highly dependent on high-end devices and technology. Thus, I strongly believe that iMEDiTEC 2021 is the best platform to address and discuss the issues and findings related to medical devices and technology. I do hope this 2 days virtual conference will give you a memorable and exciting experience.

Have a great one!

Dr. Norjihada Izzah Ismail
Chair
iMEDiTEC 2021



ORGANIZING COMMITTEE

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DR. NORJIHADA IZZAH ISMAIL

SECRETARY GENERAL

DR. NORHANA JUSOH

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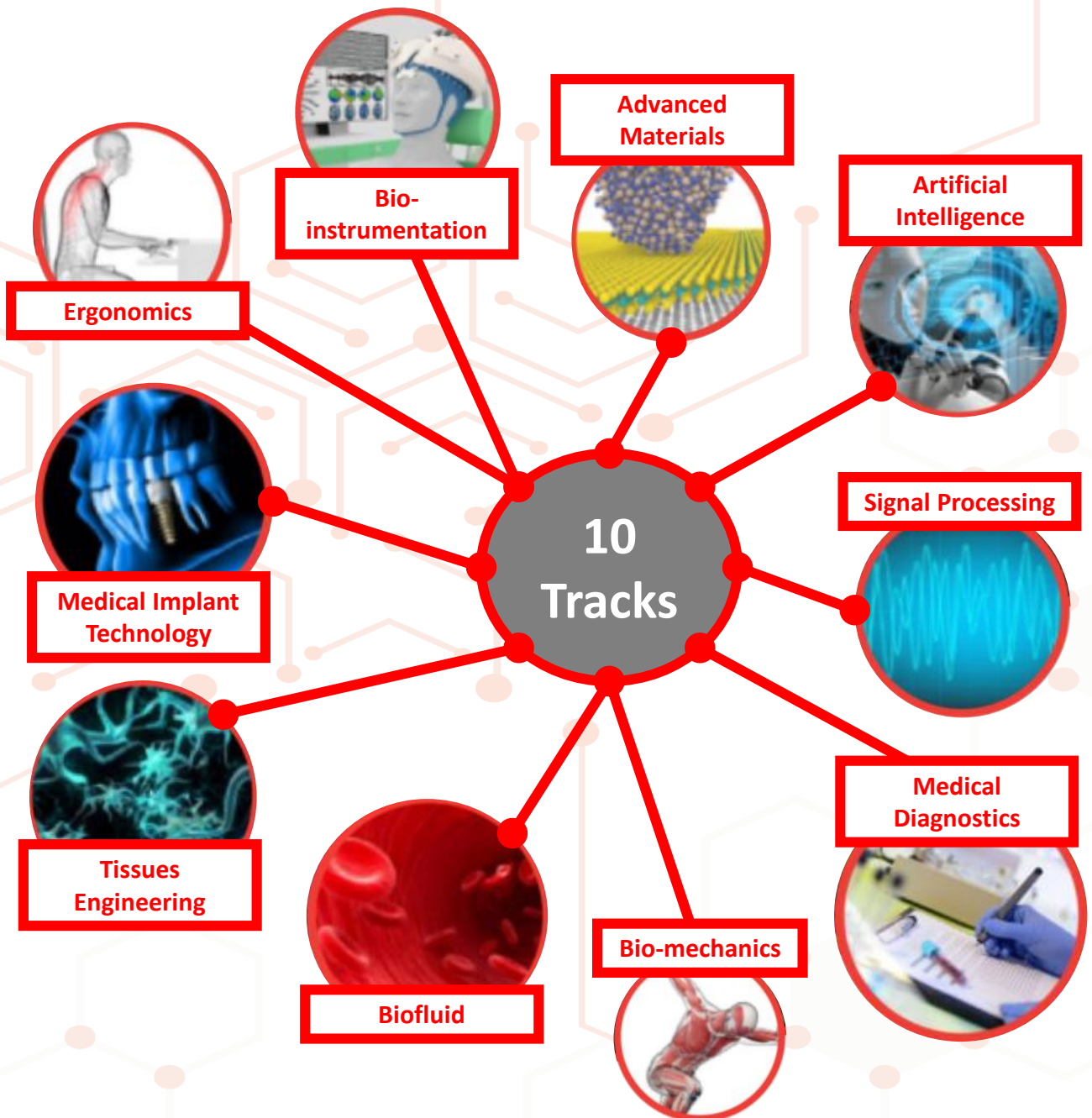
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CONFERENCE TRACKS



Kindly refer to IMEDITEC 2021 official website
for more details regarding each track :
<https://www.utm.my/imeditec2021>

PROGRAMME SCHEDULE

| Time | Day 1 29 June 2021 | | |
|----------|--|-------------|-------------|
| 8.15 am | Registration | | |
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| | IM 1 | IM 2 | IM 3 |
| 12.20 pm | Lunch Break | | |
| 2.00 pm | Keynote 2 - Prof. Dr. Tunku Kamarul Zaman Tunku Zainol Abidin Orthopaedic implant designs: Current trends and future development | | |
| 2.40 pm | Break/Transition | | |
| 2.50 pm | Parallel Session 2 | | |
| | IM 4 | IM 5 | IM 6 |
| 5.10 pm | End of session | | |

PROGRAMME SCHEDULE

| Time | Day 2 30 June 2021 | | |
|----------|---|-------------|-------------|
| 9.00 am | Keynote 3 - Prof. Dr. Nashi Widodo Integration of Bioinformatic and Omics technology for elucidating Health promotion of JAMU | | |
| 9.40 am | Break/Transition | | |
| 9.50 am | Parallel Session 3 | | |
| | IM 7 | IM 8 | IM 9 |
| 12.20 pm | Lunch Break | | |
| 2.00 pm | Keynote 4 - Dr. Mohd. Adnan Sulaiman Biomedical Engineering- Spurring Medical Growth | | |
| 2.40 pm | Award Ceromany Undergraduate Poster Award Poster Award Best Presenter Award Best Paper Award Best of the Best Award | | |
| 3.30 pm | Closing Speech Chair iMEDITEC 2021 Dr. Norjihada Izzah Binti Ismail | | |
| 3.45 pm | Closing Speech Chair iCBME 2021 Prof. Dr. Kahar Bin Osman | | |
| 4.00 pm | End of Conference | | |

PARALLEL SESSION

PARALLEL SESSION 1 - 29 JUNE 2021

M1 - iMEDITEC ROOM 1

| Time | Paper ID | Paper Title | Presenter |
|----------|-----------------------|--|--------------------------------|
| 10.10 am | 12 | Tibiototalcaneal Arthrodesis Using Femoral Head Allograft in a Case of Traumatic Bone Loss of The Talus Authors: Bing Wui Ng and Mohd Yazid Bajuri | Ng Bing Wui |
| 10.30 am | 15 | Holding It Together: Chronic Acromioclavicular Reconstruction Combining Anatomical and Non-anatomical Reconstruction Using Allograft with Augmentation Authors: Muhammad Zharif Nor Asikin, Bing Wui Ng, Ahmad Faizal Abdullah and Mohamad Fauzlie Yusof | Muhamad Zharif Nor Asikin |
| 10.50 am | 22 | Treating the 5th Vital Sign: A case of bilateral knee osteoarthritis in a patient with childhood Rickets and Systemic Lupus Erythematosus undergoing total knee arthroplasty Authors: Abdul Rauf Kamarul Zaman, Bing Wui Ng and Mohamad Fauzlie Yusof | Abdul Rauf bin Kamarul Zaman |
| 11.10 am | 25 | Effects of Varus and Sagittal Implant Positioning to the Stress Adaptation in Cementless Hip Arthroplasty Authors: Abdul Halim Abdullah, Muhammad Syahmi Yusof, Nabila Aznan, Nor Fazli Adull Manan, Shahrul Hisyam Marwan and Muhammad Hazli Mazlan | Muhammad Syahmi bin Yusof |
| 11.30 am | Break | | |
| 11.35am | 26 | Outcome of Modified Technique using Mini TightRope device for Hallux Valgus surgery: A case series Authors: Herman Jana Mulok, Teik Chiang Goh, Mohd Yazid Bajuri, Husna Mohd Apandi and Faris Aiman Sarifulnizam | Herman Jana Mulok |
| 11.55 am | 62 | 2D computational tresca stress prediction of CoCrMo-on-UHMWPE bearing of total hip prosthesis based on body mass index Authors: Muhammad Imam Ammarullah, Ilham Yustar Afif, Mohamad Izzur Maula, Tri Winarni, Mohammad Tauviqirrahman, Athanasius Bayuseno, Hasan Basri, Ardiyansyah Syahrom, Amir Putra Md Saad and J Jamari | Muhammad Imam Ammarullah |
| 12.15 pm | 68 | The Effect of Platelet-Rich Fibrin on the Success of the Dental Implant: A Systemic review Authors: Dian Setiawati, Muthmainnah Buddin, Nur Masyta Suriadi and Firman Salam | Muthmainnah |
| 12.25 pm | 83 | Mechanical Behaviour of Cancellous bone: Compression and Three-Point Bending test Authors: Farah Amira Ghazali and Ardiyansyah Syahrom | Farah Amira binti Mohd Ghazali |
| 12.45 pm | End of Session | | |

PARALLEL SESSION

PARALLEL SESSION 1 - 29 JUNE 2021

M2 - iMEDITEC ROOM 2

| Time | Paper ID | Paper Title | Presenter |
|-----------|-----------------------|---|---------------------------|
| 10.10 am | 1 | Wearable Phototherapy Using Side Glow Fibre Optic for Homecare Neonatal Hyperbilirubinemia Treatment with Temperature Monitoring System Authors: Maheza Irna Mohamad Salim | Maheza Irna Mohamad Salim |
| 10.30 am | 6 | Low level laser therapy in the treatment of knee osteoarthritis- A review Authors: Adnan Afzal, Gan Hong Seng and Muhammad Hanif Ramlee | Adnan Afzal |
| 10.50 am | 11 | Bidirectional Bending Fibre-Reinforced Soft Actuator Robotic Glove For Finger Rehabilitation Authors: Gooi Wen Pin, Hor Xian Feng and Leow Pei Ling | Gooi Wen Pin |
| 11.10 am | 13 | Validity and repeatability inertial measurement unit for measuring walking gait parameter of patients with low back pain Authors: Norazebah Hamidon, Dr Aizreena Azaman, Dr Siti Ruzita Mahmod and Nur Hidayah Ong Abdullah | Norazebah binti Hamidon |
| 11.30 am | Break | | |
| 11.35am | 17 | Research on EMG-based Classification of Hand Movements Using 4 Electrodes Arrangements on Forear Authors: Teruji Ide, Kiyotaka Kamata and Nariaki Imamura | Teruji Ide |
| 11.55 am | 32 | Smartphone-Based Ophthalmoscope Prototype: A design consideration, reliability, and clinical safety Authors: Harnani Hassan, Muhammad Zulhelmi Kamaruzaman, Raudah Abu Bakar, Sukreen Hana Herman and Zulfakri Mohamad | Harnani Binti Hassan |
| 12.15 pm | 75 | State of Body Bioimpedance Parameters After Massage Therapy Authors: Mohd Riduan Mohamad and Wan Mohd Azhar Wan Ibrahim | Mohd Riduan bin Mohamad |
| 12.25 pm | 7 | Structural and Electrical Properties of Graphene/CNTs-Polymer Composites Observed Under Transmission Electron Microscope For Wearable Medical Device Authors: Che Raimi Nur Isarah, Hasmuni Nur Farhana and Mohd Yusop Mohd Zamri | Nur Isarah Che Raimi |
| 12. 45 pm | End of Session | | |

PARALLEL SESSION

PARALLEL SESSION 1 - 29 JUNE 2021

M3 - iMEDITEC ROOM 3

| Time | Paper ID | Paper Title | Presenter |
|-----------|-----------------------|---|------------------------------------|
| 10.10 am | 20 | The Amazing Wound Healing Accelerator; Topical Bioactive Solution Authors: Nur Sa'idah Mohd Saidfudin, Mohd Yazid Bajuri, Norliyana Mazli, Ahmad Azraf Azhar, Husna Mohd Apandi and Faris Aiman Sarifulnizam | Assoc. Prof. Dr. Mohd Yazid Bajuri |
| 10.30 am | 30 | Sol-Gel Surface Enhancement of Pure Magnesium (Mg) for Biocompatibility Implant Applications Authors: Mohamad Zaki Hassan, Aufa Adlia Nazari and Zarini Ismail | Aufa Adlia Binti Nazaria |
| 10.50 am | 41 | Evaluation of Functionally Graded Architecture using Fused Filament Fabrication Technique for Bone Scaffold Applications Authors: Muhammad Azfar Noordin, Mohd Aidil Syukri Zulkipli, Nur Aqila Kadir Hussein and Amir Putra Md Saad | Muhammad Azfar Noordin |
| 11.10 am | 43 | Angiogenic and Osteogenic Properties of Fibrin in Bone Tissue Engineering Authors: Nurul Atiqah Maaruf and Norhana Jusoh | Nurul Atiqah binti Maaruf |
| 11.30 am | Break | | |
| 11.35am | 45 | Bioviability of Beta-Tri Calcium Phosphate nanoencapsulation (β -TCP) from synthesis of Anadara granosa shells on Fibroblast Cell Line BHK-21 Cell Culture Authors: Aprilia, Sri Kunarti, Theresia Indah Budhy S and Rima Parwati Sari | Aprilia |
| 11.55 am | 46 | The Property of Mesenchymal Stem Cells (MSCs) Secretome as a Bone Stimulator Candidate for Regeneration of Bone Defect Authors: Fery Setiawan, Dian Agustin Wahjuningrum and Dwikora Novembri Utomo | Fery Setiawan |
| 12.15 pm | 47 | Chitosan Acts as a Scaffold Material Bone Graft on Bone Regeneration Process Authors: Dian Agustin Wahjuningrum, Setyabudi, Febriastuti Cahyani, Fery Setiawan and Eska Dianti | Radixtio Auzan Fepiosandi |
| 12.25 pm | 57 | Cytotoxicity Test of Cacao Pod Peel Extract (Theobroma Cacao. L) In Human Periodontal Ligament Fibroblast Cells (HPdLF) Authors: Tamara Yuanita, Nawira, Amanda Diah Prameswari H and Ari Subiyanto | Nawira |
| 12. 45 pm | End of Session | | |

PARALLEL SESSION

PARALLEL SESSION 2 - 29 JUNE 2021

M4 - iMEDITEC ROOM 1

| Time | Paper ID | Paper Title/Authors | Presenter |
|---------|-----------------------|---|------------------------------------|
| 2.50 pm | 16 | CT Lung Image Segmentation Using Image Processing And Markov Random Field Authors: Khairul Azha A Aziz | Khairul Azha A Aziz |
| 3.10 pm | 23 | Features of brain rhythms during the visual memorizing task and auditory stimuli using electroencephalography Authors: Syarifah Noor Syakiylla Sayed Daud, Rubita Sudirman and Camallil Omar | Syarifah Noor Syakiylla Sayed Daud |
| 3.30 pm | 27 | Requirements-Based Testing for Robotic Wheelchair Tracking Software System Authors: Dayang Norhayati Abang Jawawi, Rooster Tumeng, M. Irsyad Kamil, Amirul Danish Misri, Rosbi Mamat, Shahliza Abdul Halim, Raja Zahilah Raja Mohd. Radzi and Mohamad Noor Hakim Mohamad | Dayang Norhayati Abang Jawawi |
| 3.50 pm | 31 | A Review on Machine Learning Approach in COVID-19 Pandemic Prediction and Forecasting Authors: Nor Nisha Nadhira Nazirun, Nashuha Omar, Koshelya Selvaganeson and Asnida Abdul Wahab | Nor Nisha Nadhira |
| 4.10 pm | Break | | |
| 4.15 pm | 38 | IV Drip Controlling and Monitoring System using IoT Authors: Muhammad Syafiq Najah Bin Rozikin | Muhammad Syafiq Najah Bin Rozikin |
| 4.35 pm | 76 | Assessment of Heart Rate Variability Response on Autism Spectrum Disorder Children using Machine Learning Authors: Noor Aimie-Salleh, Nour E. Mtawea, Xin Yen Kh'ng, Chiew Yii Liaw, Xiao Ge Cheng, Aaisha Negeh Bah, Kai Ling Lim, Alqahtani Abrar Nasser, Mawadah Adel Yahya Al Haddad, Aizreena Azaman, Mohd Riduan Mohamad and Nor Liyana Safura Hashim | Noureldin Essam Mtawea |
| 4.55 pm | 80 | Sprinting Motion Detection System using Object Detection for Sports Performance Analysis Authors: Khairi Kamarudin, Hadafi Fitri Mohd Latip and Mohd Najeb Jamaludin | Muhamad Khairi B Kamarudin |
| 5.15 pm | End of Session | | |

PARALLEL SESSION

PARALLEL SESSION 2 - 29 JUNE 2021

M5 - iMEDITEC ROOM 2

| Time | Paper ID | Paper Title/Authors | Presenter |
|---------|----------------|---|----------------------------------|
| 2.50 pm | 21 | Adjacent Segment Degeneration and Sagittal Imbalance Post Lumbar Interbody Fusion: Mathematics Based on Pelvic Incidence For Recreation of Lumbar Lordosis Authors: Badrul Hisham Haris, Bing Wui Ng, Jin Aun Tan, Azmi Baharuddin and Muhammad Hisam Ariffin | Badrul Hisham Bin Haris |
| 3.10 pm | 29 | Evaluating the Reusability of Core Assets for Service Oriented Product Line: Case Study of Patient Navigation Program (PNP) Authors: Ain Balqis Md Nor Basmmi, Shahliza Abd Halim and Dayang Norhayati Abang Jawawi | Ain Balqis bt Md Nor Basmmi |
| 3.30 pm | 33 | 3D Printed Assistive Writing Device for Phocomelia Patient Authors: Abdul Halim Abdullah, Mohammad Azeeb Mazlan, Natiara Mohammad Hashim and Noor Ayuni Che Zakaria | Mohammad Azeeb bin Mazlan |
| 3.50 pm | 39 | Ergonomics Evaluation for Turning Machinist in Oil and Gas Industry Authors: Mohd Zul Helmie Hj Abu Kasim and Mohd Firdaus Mohd Taib | Mohd Zul Helmie bin Hj Abu Kasim |
| 4.10 pm | Break | | |
| 4.15 pm | 55 | 3D Scanner's Accuracy In Different Races Of Head And Face Measurement For Ergonomic Design: A Review Authors: Ong Joo Boon, Azanizawati Bt Ma'Aram and Tee Chee Hong | Ong Joo Boon |
| 4.35 pm | 61 | High Accuracy Cloud Point Scanning Method based on Dual Laser 3D-Scanner with Head Profile: A Review (iMEDITEC2021) Authors: Tee Chee Hong, Azanizawati Bt Ma'Aram and Ong Joo Boon | Tee Chee Hong |
| 4.55 pm | 74 | Footprint Analysis : Comparison between Conventional Scanning Method and Motion Capture system Authors: Azkiyyah Wahida Dzulkifli, Aizreena Azaman and Siti Aisyah Mualif | Azkiyyah Wahida Dzulkifli |
| 5.15 pm | End of Session | | |

PARALLEL SESSION

PARALLEL SESSION 2 - 29 JUNE 2021

M6 - iMEDITEC ROOM 3

| Time | Paper ID | Paper Title/Authors | Presenter |
|---------|----------------|--|------------------------|
| 2.50 pm | 67 | The Effect of Cyanocrylate Adhesive in Periodontal Therapy Healing – A Literature Review Authors: Surijana Mappangara, Nurfitra Abd Fatah, Daniel Tetan-El and Shinta Rahma Mansyur | Mansyur Shinta Rahma |
| 3.10 pm | 14 | Synthesis and Physicochemical Characterization of Multi-Walled Carbon Nanotube /Quercetin/Chitosan Blended Membrane as Wound Dressing Authors: Nurul Huda Baktehir, Mohamad Ajma'In Mohamed Arbi and Norjihada Izzah Ismail | Norjihada Izzah Ismail |
| 3.30 pm | 44 | Cytotoxicity of HA-TCP Scaffold on Human Umbilical Cord Mesenchymal Stem Cells using MTT Assay Authors: Vivin Ariestania, Nike Hendrijantini, Chiquita Prahasanti, Eric Prasetyo, Mefina Kuntjoro, Rima Parwati Sari and Aulia Dwi Maharani | Vivin Ariestania |
| 3.50 pm | 48 | Antibacterial Effectiveness Of Chitosan Solution On Streptococcus mutans Authors: Dian Agustin Wahjuningrum, Setyabudi, Daniel Hadinata, Ilona Talitha Amalia, Rizki Annisa Roi'fa and Devi Eka Juniarti | Ilona Talitha Amalia |
| 4.10 pm | Break | | |
| 4.15 pm | 49 | Chitosan Antibacterial Activity Against Streptococcus Viridans Authors: Dian Agustin Wahjuningrum, Halida Dwi Pramesti, Manuel Raynaldy Sihombing, Zabrina Luthfiana Devi, Mohamad Roelianto and Setyabudi | Zabrina Luthfiana Devi |
| 4.35 pm | 59 | The Characteristics, Swelling Ratio and Water Content Percentage of Chitosan-Gelatin/Limestone-based Carbonate Hydroxyapatite Composite Scaffold Authors: Anita Yuliati, Devi Rianti, Rania Vivian Nathania, Alqomariyah Eka Purnamasari, Rifayinqa Ruyani Putri, Helal Soekartono, Soebagio and Ardiyansyah Syahrom | Geo Fanny |
| 4.55 pm | 66 | Effectiveness of the platelet-rich fibrin (PRF) and adjuvant therapy for treatment intrabony osseous defect : a systematic review Authors: Asdar, Afriani Razak and Alfrida Pasangallo | Afriani |
| 5.15 pm | End of Session | | |

PARALLEL SESSION

PARALLEL SESSION 3 - 30 JUNE 2021

M7 - iMEDITEC ROOM 1

| Time | Paper ID | Paper Title/Authors | Presenter |
|----------|-----------------------|--|-------------------------------|
| 9.50 am | 5 | The effect of porosity and contact angle on the fluid capillary rise for bone scaffold wettability and absorption Authors: Ab Aziz Mohd Yusof | Ab Aziz bin mohd yusof |
| 10.10 am | 10 | Self-powered Infusion Micropump Fabrication Using Xurography and Thermal Lamination Techniques Authors: Zul Fadhli Idris, Ummikalsom Abidin and Nur Shamimi Amirah Md Sunhazim | Ummikalsom Abidin |
| 10.30 am | 18 | Case Series of Tibia Plateau Fracture Treated Using Ilizarov External Fixator – Functional and Radiological Outcome Authors: Kean Chao Ong, Mohamad Saifudin Othman, Bing Wui Ng, Soo Lin Teo and Basir Towil | Ong Kean Chao |
| 10.50 am | 19 | Treatment of Closed Comminuted Supracondylar Fracture of Right Femur with Cross Knee Ilizarov External Fixation: A Case Report Authors: Nur Hakim bin Md Noorpi, Bing Wui Ng, Jin Aun Tan and Sabarul Afian Mokhtar | Nur Hakim bin Md Noorpi |
| 10.55 am | Break | | |
| 11.15 am | 28 | Pulsatile Flow Interaction between Aorta and Pulmonary Artery Authors: Takahisa Yamamoto, Takumi Ichihashi, Shu Ishida, Mohamad Ikhwan Kori and Kahar Osman | Takahisa Yamamoto |
| 11.35 am | 42 | Pore Size Effect on Mechanical Response and Fluid Permeability for Bone Scaffold Regeneration Authors: Nur Aqila Kadir Hussein, Noor Aziah Jamilah Mohtar, Luqman Haqim Neza, Muhammad Azfar Noordin and Amir Putra Md Saad | Nur Aqila binti Kadir Hussein |
| 11.55 am | 78 | The Effect of Spiral Inducing Chamber on Left Ventricular Assist Device Outflow Cannula Authors: Siti Aisyah Thomas, Ahmad Zahran Md Khudzari and Muhammad Rashidi Abdul Kadir | |
| 12.15 pm | 81 | Numerical Simulation on Three-Dimensional Printed Submerged Temephos Larvicide Dispenser for Dengue Prevention Authors: Norazmein Abdul Raman, Amir Mustakim Ab Rashid, Norjihada Izzah Ismail, Siti Aisyah Mualif and Muhammad Hanif Ramlee | Norazmein Bin Abdul Raman |
| 12.25 pm | End of Session | | |

PARALLEL SESSION

PARALLEL SESSION 3 - 30 JUNE 2021

M8 - iMEDITEC ROOM 2

| Time | Paper ID | Paper Title/Authors | Presenter |
|----------|-----------------------|---|------------------------|
| 9.50 am | 65 | Enamel Matrix Derivative (EMD) For Periodontal Regeneration: A Systemic Review Authors: Sri Oktawaty, Machirah and Adhawanty | Machirah |
| 10.10 am | 40 | Synthesis and Physicochemical Characterization of Naringenin-Loaded Polymeric Micelles and Gallic Acid-Loaded Polymeric Micelles for Cancer Drug Delivery Authors: Khaliqah Syafiqah Basir, Husnul Mufida and Norjihada Izzah Ismail | Husnul Mufida |
| 10.30 am | 53 | Potential of Epigallocatechin-3-gallate as Chelating Agent against Matrix Metalloproteinase Expression and as Cross-Linking Agent Towards Hybrid Layer in Dentin Collagen Authors: Kun Ismiyatin, Setyabudi Goenharto, Windi Irsya, Paramita Tanjung Sari, Olivia Vivian Widjaja and Ria Puspita Sari | Paramita Tanjung Sari |
| 10.50 am | 54 | Application of Combination Propolis Extract and Calcium Hydroxide (Ca(OH) ₂) As a Direct Pulp Capping Agent on MMP-1 Expression and Collagen Type 1 Density in Rat's Pulp Tissue Authors: Salsabila Nunki Widona, Yashinta Ramadhinta, Michael Golden Kurniawan, Nanik Zubaidah and Ira Widjiastuti | Salsabila Nunki Widona |
| 10.55 am | Break | | |
| 11.15 am | 58 | The Effect of the Combination of Calcium Hydroxide with Green Tea Extract and Calcium Hydroxide with Cacao Peel Extract on the Number of Odontoblast-Like cells and Collagen Type-1 Authors: Tamara Yuanita, Priskilla Naomi Widodo, Andrie Handy Kusuma, Galih Sampoerno and Sri Kunarti | Priskilla Naomi Widodo |
| 11.35 am | 63 | VEGF-A Expression after application of Calcium Carbonate of Blood Cockle (Anadara granosa) Shells in Dentin Pulp Complex (In Vivo Study in Rattus novergicus) Authors: Hermawa Adi Praja, Nina Dhanier, Ratih Maharani Santoso, Devy Putri K, Annisa Salsabila A P, Veda Sahasika A N and Widya Saraswati | Hermawan Adi Praja |
| 11.55 am | 70 | The Role of Omega 3 as a Host Modulation Therapy (HMT) in Periodontal Tissue Regeneration: a Systematic Review Authors: The Effect of Spiral Inducing Chamber on Left Ventricular Assist Device Outflow Cannula | Febrianty |
| 12.15 pm | 77 | Permeability Study of Functionally Graded Scaffold Based on Morphology of Cancellous Bone Authors: Imam Akbar, Akbar Teguh Prakoso, Yoga Marantino Astrada, Muhamad Sofyan Sinaga, Hasan Basri, Muhammad Imam Ammarullah, Dendy Adanta, Agung Mataram, Ardiyansyah Syahrom and J Jamari | Imam Akbar |
| 12.25 pm | End of Session | | |

PARALLEL SESSION

PARALLEL SESSION 3 - 30 JUNE 2021

M9 - iMEDITEC ROOM 3

| Time | Paper ID | Paper Title/Authors | Presenter |
|----------|-----------------------|--|------------------------------------|
| 9.50 am | 34 | A Review on Molecularly Imprinted Polymer (MIP) for Electrochemical Sensor Development Authors: Anis Suzziani Rosslan, Muhammad Faiz Md Shakhiih, Farah Nabila Mustafa Amirrudin, Asnida Abdul Wahab, Faizuan Abdullah and Muhammad Hanif Ramlee | Anis Suzziani Rosslan |
| 10.10 am | 35 | Reusable Patient Navigation Software Architecture using Software Product Line Authors: Ushananthiny Suvelayutnan, Shahliza Abd Halim, Dayang Norhayati Abang Jawawi, Ain Balqis Md Nor Basmmi and Muhammad Syafiq A. Manan | Shahliza Abd Halim |
| 10.30 am | 36 | A Comparative Study of Optical System to Improve Image Quality of Smartphone-based Ophthalmoscope Authors: Harnani Hassan, Nik Amir Afif Nik Ahmad Rushdi, Sukreen Hana Herman and Zulfakri Mohamad | Harnani Binti Hassan |
| 10.50 am | 37 | Improvement Information Features Musculoskeletal Disorders (MSD) for Procedures of Health Screening Program (HSP) in SOCSO using Functional Range of Motion Authors: Tengku Nor Shuhada Tengku Zawawi, Abdul Rahim Abdullah, Norhashimah Mohd Saad and Rubita Sudirman | Tengku Nor Shuhada Tengku Zawawi |
| 10.55 am | Break | | |
| 11.15 am | 50 | Characteristic and Distribution of Histological pattern of Ameloblastoma Post Mandibular Resection in Airlangga university Oral and Maxillofacial Surgery Department Satellite Hospital Authors: Widhi Satrio Nugroho, Stanley Santosa Kamadjaja, Coen Pramono and David Buntoro Kamadjaja | Widhi satrio nugroho |
| 11.35 am | 51 | Effect of LTA Lactobacillus Plantarum (LP) Exposure Duration in Inflammatory Response (as Study Model of Dental Pulp Inflammation Wistar Rat) Authors: Nirawati Pribadi, Atika Nisaa Rachmawati, Sandra Kartika Sari and Cindy Ramadhan Putri | Atika Nisaa Rachmawati |
| 11.55 am | 52 | Viability Test of Alpha-Mangostin against Oral Squamous Cell Carcinoma Authors: Andra Rizqian, Indra Mulyawan, Ta To Tran, Amalia Fauqiah Ashari, Adi Rizal Soleh, Abdul Muin Hasan Busri, Dewati Ayusri Artha, Cindy Shavia and Prasiddha Mahardhika El Fadhlallah | Dewati Ayusri Artha, drg |
| 12.15 pm | 24 | Applications of synthetic aromatic polymers in the biomedical field: A review Authors: Syarifah Noor Syakiylla Sayed Daud, Rubita Sudirman, Muhd Noorul Anam Mohd Norddin, Juhana Jaafar and Nasrul Humaimi Mahmood | Syarifah Noor Syakiylla Sayed Daud |
| 12.25 pm | End of Session | | |



3rd **ICBME2021**

3RD INTERNATIONAL CONFERENCE ON BIOSCIENCES AND MEDICAL ENGINEERING

*29th-30th June 2021
Virtual Conference*

Host



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF BIOMEDICAL ENGINEERING & HEALTH SCIENCES
Faculty of Engineering

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MESSAGE FROM CHAIR



Prof. Dr. Kahar bin Osman
Chair

3rd International Conference on Biosciences and
Medical Engineering (ICBME 2021)

It is my great pleasure to welcome all of you to our 1st International Joint Conferences on Medical Engineering, Science and Technology. That also means a great welcome to the 2nd International Medical Devices and Technology Conference and 3rd International Conference on Biosciences and Medical Engineering.

On behalf of the organizing committee, I would like to thank our keynote speakers for sharing their thoughts and updating us with the current news. Many thanks to the invited speakers as well for their presentations. The 2nd ICBME was held in Bali, Indonesia, hosting more than 100 guests and the 1st IMEDITEC was held in 2017 at UTM. Thus, last year we merged under the name IMEDIST to have a joint conference but the pandemic had pushed the conference to this year and we are going virtual.

These conferences bring together experts from all over the world with a common interest that is sharing of knowledge and updates in many areas. These conferences will host more than 200 submissions for oral presentations, poster presentations, poster competition as well as distinguished speakers who are going to share their thoughts in the area of biomedical engineering, health and biosciences. For the first time, we are offering the animal sciences track as one of the efforts to expand the conference scopes.

This year, for the first time, we are also organizing the undergraduate poster competition! This competition will open the opportunities for the young biomedical engineers and bioscientists to show their talents and ideas. I would like to take the opportunity to thank the sponsors for the competitions's award. They are Hospital Penawar, E-Life Solutions and Mindmatics Sdn Bhd. The competitions have attracted participants from many countries all over the world.

Last but not least, our highest thanks to the committee who have been working so hard for more than a year in making this event successful despite all the difficulties due to the pandemic.

Let's meet again next year!

ORGANIZING COMMITTEE

Chair

Prof. Dr. Kahar bin Osman

Co-chair

Prof. Dr. Fahrul Zaman bin Huyop

Assoc. Prof. Ir. Dr. Azli bin Yahya

Secretary General

Ts. Dr. Mohd Riduan bin Mohamad

Treasurer

Mrs Shaleena Melisa Binti Syed Noor

Technical & Publication

Dr. Jaysuman bin Pusppanathan

Dr. Mohd Helmi bin Sani

Dr. Siti Ruzita binti Mahmod

Miss Mira binti Panadi

Dr. Nurashikin binti Ihsan

Dr. Wan Azani bin Wan Mustafa

Logistic

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Mr. Norman Zairie bin Rosle

Promotion & Multimedia

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Dr. Nurliyana binti Ahmad Zawawi

Dr. Fazilah binti Abd. Manan

Dr. Abdul Fatah Bin A. Samad

Sponsorship & Networking

Mr. Norazmein bin Abdul Raman

Competition

Dr. Raimi bin Dewan @ Abdul Rahman

Dr. Nurizzati Binti Md. Daud

INVITED SPEAKER 1



Prof. Dr.-Ing. habil. Jens Haueisen

Professor,

Institute of Biomedical Engineering and Informatics, TU
Ilmenau, Ilmenau, Germany

Biomagnetic Center, Department of Neurology, Jena
University Hospital, Jena, Germany

Dry electrodes for electroencephalography

Multichannel Electroencephalography (EEG) is widely used in clinical neurology and neuroscientific research. EEG caps with wet Silver/Silver-Chloride (Ag/AgCl) electrodes represent an often-used standard in the field. Reproducible electrode-skin contact for these electrodes is ensured by electrolyte gel or paste. Thus, these electrodes require specific mechanisms to apply and hold the gel at the electrode positions in the caps and require skilled personnel to apply the EEG cap. Dry electrodes allow more degrees of freedom in the design and fabrication of EEG caps and can be self-applied without long preparation times. Novel multi-channel EEG caps with up to 256 dry electrodes are introduced. The base material of the EEG cap is a light-weight and flexible fabric, which contains small holes (perforation) making it breathable. Polyurethane (PU) based multi-pin electrodes serve as dry contact electrodes. The pin number per electrodes is adjusted between 19 (256-channel cap) and 30 (64-channel cap). A coating provides electrical conductivity of these polymer based electrodes. The use of silver coating opens the way for dry AgCl electrodes and thus, signal quality similar to wet Ag/AgCl electrodes. Thin coaxial wires are soldered to the bottom of the electrodes enabling active shielding. A second layer of fabrics protects the electrodes and the wires. Our results demonstrate that resting state EEG, eye movements, alpha activity, and pattern reversal VEP can be recorded with the novel dry multi-channel EEG caps without significant differences between the novel EEG caps and conventional caps based on wet Ag/AgCl electrodes. The preparation time is reduced by up to 75 % with the dry EEG caps. All volunteers reported good wearing comfort and favored the dry EEG caps. The use of dry electrodes also promotes sustainable medical technology by e.g. reducing the use of electrolyte gel and paste. In conclusion, the proposed novel multi-channel EEG caps with dry electrodes can potentially replace conventional wet multi-channel EEG caps and thus enable new fields of application like brain-computer-interfaces and mobile EEG acquisition.

INVITED SPEAKER 2



Dr. Sahar Mohsin
Assistant Professor,
Department of Anatomy
College of Medicine and Health Sciences
United Arab Emirates University

Biomimetic Bone Scaffolds for Clinical Applications

The incidence of fractures is rising due to an increase in trauma and it is also attributable to an increase in the elderly population. Autografts, allografts, and metals are used in bone graft surgeries but all have numerous limitations including tissue availability/compatibility, pain, bleeding, or scarring at the donor site, and potential for infection. There is a great need to develop synthetic bone graft substitutes (scaffolds) to meet the epidemiologically driven demand.

This study aimed to fabricate a novel biomimetic scaffold that could be used as a bone substitute. The ideal bone scaffold should promote early mineralization and support new bone formation while at the same time allow for replacement by new bone. To achieve these goals biocompatible, bioactive, biodegradable material with interconnected porosity of appropriate size to direct appropriate cell growth is essential. Bone is a complex structure made of hydroxyapatite crystals embedded in an organic matrix. We have synthesized strontium and zinc doped nano-hydroxyapatite (Sr-Zn n-HaP) using a water-based sol-gel technique. Sr-Zn n-HaP and Poly lactic-co-glycolic acid (PLGA) were used to fabricate composite scaffolds using a supercritical carbon dioxide technique. The Sr-Zn n-HaP and the composite scaffolds were characterized using FTIR Spectroscopy (Thermofischer Nicolet Nexus 470 FT-IR) and XRD (Shimadzu Lab X XRD-6100 Diffractometer). The transmission electron microscopy and particle size analyzer (Zetasizer Ver.7.11 (Malvern, England) were used to determine the particle size. The scaffolds were further characterized using SEM to assess the porosity. The bioactivity was evaluated using a simulated body fluid (SBF) study and the degradability of the composite was conducted by immersing them into the Tris/HCl buffer and measuring the change of pH values and percentage weight loss. ICP-MS study carried out showed the release of strontium, zinc, and calcium ions which would have an anabolic and bactericidal effect on bone. The results have shown that we were able to synthesize a novel, biocompatible, biodegradable, bioactive bone scaffold with adequate porosity to favor cell growth. The development of this novel scaffold will be a major contribution to innovative medical technology.

CONFERENCE TRACKS

ICBME 2021 offer 5 major Tracks of Conference includes Biomedical Instrumentation and Devices, Healthcare Technologies, Medical Sciences, Biosciences and Animal Sciences. Each track will highlight the following research (but not limited to) topic :

1) Biomedical Instrumentation and Devices

Wearable Technologies

Medical Electronics

Biomedical Embedded System

Biomedical Computing and
Processing Architecture

Artificial Organs

2) Healthcare Technologies

Internet of Things or Internet of
Medical Things

Diagnostics, Therapeutics and
Rehabilitation Engineering

Telemedicine

Sports Engineering and Technologies

Hospital Management

Biomedical and Health Informatics

Process and Manufacturing of
Medical Devices

3) Biosciences

Biochemistry

Molecular Biology

Biotechnology

Microbiology

Bioinformatics

4) Medical Sciences

Medical Imaging

Biomedical Image Processing

Clinical Sciences

Clinical Engineering

Neural Engineering

Brain Computer Interface

5) Animal Sciences

Animal Nutrition

Animal Reproduction and Breeding

Dairy Science and Technology

Animal Health`

Animal Husbandry

Animal Production

PROGRAMME SCHEDULE

| Day 1 | | |
|-------------------|------------------------|--|
| | 8.15 am | Registration |
| 29th June 2021 | 8.30 am | Welcoming Speech by: Patron IMEDIST Profesor Dato' Ir. Dr. Mohammed Rafiq Bin Abdul Kadir |
| | 8.35 am | Opening Speech by: CEO Medical Device Authority (MDA) En Ahmad Shariff Hambali |
| | 9.00 am | Opening Ceromany: Vice Cancellor UTM Professor Datuk Ts. Dr. Ahmad Fauzi Ismail |
| | 9.20 am | Keynote 1 - Prof. Dr. Congo Tak Shing Ching Bioimpedance for non-invasive biomedical applications |
| | 10.10 am - 11.50 am | Parallel Session 1 |
| | 12.10 pm | Lunch Break |
| | 2.00 pm | Keynote 2 - Prof. Dr. Tunku Kamarul Zaman Tunku Zainol Abidin Orthopaedic implant designs: Current trends and future development |
| | 2.40 pm | Invited Speaker 1 – Dear Prof Dr.-Ing. Habil. Jens Hauelsen Dry electrodes for electroencephalography |
| | 3.10 pm - 5.00 pm | Parallel Session 2 |
| | 5.20 pm | End of session |

PROGRAMME SCHEDULE

| Day 2 | | |
|-------------------|------------------------|---|
| 30th June 2021 | 9.00 am | Keynote 3 - Prof. Dr. Nashi Widodo Integration of Bioinformatic and Omics technology for elucidating Health promotion of JAMU |
| | 9.40 am | Invited Speaker 2 – Dr Sahar Mohsin Biomimetic Bone Scaffolds for Clinical Applications |
| | 10.10 am – 12.00 pm | Parallel Session 3 |
| | 12.20 pm | Lunch Break |
| | 2.00 pm | Keynote 4 - Dr. Mohd. Adnan Sulaiman Biomedical Engineering- Spurring Medical Growth |
| | 2.40 pm | Award Ceremony Undergraduate Poster Awards Poster Awards Best Presenter Best Paper Best of the Best |
| | 3.30 pm | Closing Ceremony |
| | 3.30 pm | Closing Speech Chair iMEDITEC 2021 Dr Norjihada Izzah Binti Ismail |
| | 3.45 pm | Closing Speech Chair iCBME 2021 Profesor Dr Kahar Bin Osman |
| | 4.00 pm | End of Conference |

PARALLEL SESSION

PARALLEL SESSION 1 – 29th JUNE 2021

| ICBME 1 (Healthcare Technology) | | | |
|---------------------------------|----------|--|---|
| Time | Paper ID | Paper Title | Presenter |
| 10.10 am | 9 | Assessing Effect of Acupressure in Delaying Fatigue Symptoms on Brachioradialis Muscle by Adjustable Handgrip Exercise Authors: Mispan Mangon and Muhammad Amir As'Ari | Mispan Mangon |
| 10.30 am | 60 | Penawar Special Learning Center (PSLC) & Child with Learning Disabilities: Case Reporting | Ruwinah Karim |
| 10.50 am | 14 | Recent Development of Transcatheter Aortic Valve Implantation (TAVI): Reality in Malaysia Authors: Adi Azriff Basri, Mohamed Zuber, Ernni Illyani Basri, Muhammad Shukri Zakaria, Ahmad Fazli Abdul Aziz, Masaaki Tamagawa and Kamarul Arifin Ahmad | Adi Azriff Basri |
| 11.10 am | 37 | Synthesis and Characterization of Magnesium Doped Hydroxyapatite Extracted from Bovine Bone Authors: Sharifah Adzila Binti Syed Syed Abu Bakar, Nashrah Hani Jamadon and Mohd Azwan Ahmad | Sharifah Adzila Binti Syed Syed Abu Bakar |
| 11.30 am | 40 | Submerged 3D printing larvicide capsule design for dengue prevention and intervention Authors: Nadzmi Fathihi Fadzil, Wan Hanis Rifhan Wan Adeli, Nurul Naziha Jamsari, Mohamad Loqman Ilyasa Baharuddin, Umar Mahfudz Md Ashari, Murfiqah Taufiqiah Mohd Amin, Nur Izzaty Ab Manap, Siti Aisyah Mualif, Norazmein Abdul Raman, Norjihada Izzah Ismail and Muhammad Hanif Ramlee | Nurul Naziha Jamsari |
| 11.50 | 56 | Accuracy Improvement via Multiple Depth Camera Motion Capture System for Biomechanics Rehabilitation Analyses Authors: Siti Badriah Khairu Razak and Mohd Zamani Ngali | Siti Badriah Khairu Razak |

PARALLEL SESSION

| ICBME 2 (Biomedical Instrumentation & Devices) | | | |
|--|----------|--|-------------------------|
| Time | Paper ID | Paper Title | Presenter |
| 10.10 am | 2 | Micro-crack Formation on EDMed Textured Surface in Metal-on-Metal Hip Implant Application Authors: Nor Liyana Safura Hashim, Azli Yahya, Mohammed Rafiq Abdul Kadir, Muhamad Noor Harun and Asnida Abdul Wahab | Azli Yahya |
| 10.30 am | 5 | Innovative Transformer-Based Wireless Power Transfer System for Low Power Medical Device Application Authors: Matthias Foh Thye Tiong, Tian Swee Tan, Kah Meng Leong, Joyce Sin Yin Sia, Kok Yeow You, Sameen Ahmed Malik, Kelvin Chia Hiik Ling and Jahanzeb Sheikh | Matthias Foh Thye Tiong |
| 10.50 am | 7 | Electrical Capacitance Tomography for Cell Culture Imaging: Comparative Study of Sensor Configurations Authors: Nur Amira Zulkifli, Mohd Hafiz Fazalul Rahiman, Siti Zarina Mohd. Muji, Fatin Aliah Phang, Nina Diana Nawi and Jaysuman Pusppanathan | Nur Amira Zulkifli |
| 11.10 am | 12 | Detection of Fetal Heart Rate from Single Channel Abdominal Fetal Electrocardiogram Recordings Using Filtering Methods Authors: Fatima Azzahra Manap, Ng Siew Cheok and Ahmad Khairi Abdul Wahab | Fatima Azzahra Manap |
| 11.30 am | 24 | A Soft Robotic Glove for Hand Rehabilitation Authors: Bing-Xing Bai, Zhu-Xuan Xie, Pei-Yi Chu, Ta-Sen Wei, Chien-Hung Lai and Congo Tak Shing Ching | Bing-Xing Bai |
| 11.50 am | 31 | Artificial Mechanoreceptor as Self powered Intelligent Neuromorphic and Smart Sensors Authors: Akhilesh Kumar Gupta and Shu-Ping Lin | Akhilesh Kumar Gupta |
| 12.10 pm | 38 | Digitized Immunochromatography Test for Rapid Dengue Screening Authors: Wee Li Low, Yuan Wen Hau, Muhammad Amir As'Ari and Saleha Shahar | Wee Li Low |

PARALLEL SESSION

| ICBME 3 (Biosciences) | | | |
|-----------------------|----------|---|------------------------|
| Time | Paper ID | Paper Title | Presenter |
| 10.10 am | 8 | Cultural and Biochemical identification of Salmonella species Authors: Asma Nadia Ahmad Faris, Nik Yusnoraini Yusof, Amy Amilda Anthony, Nur Fatimah Mohd Zaidi, Mawaddah Mohd Azlan and Fatin Hamimi Mustafa | Asma Nadia Ahmad Faris |
| 10.30 am | 11 | Detection of Active Compounds of Young Coconut Water using GCMS Method and Minimum Inhibitory Concentration of Pathogenic Bacteria causing Diarrheal Authors: Ikhsan Mujahid, Arif Mulyanto, Tantri Analisisawati Sudarsono and Kusnanto Mukti Wibowo | Kusnanto Mukti Wibowo |
| 10.50 am | 42 | Halal Hydroxyapatite (HAp) Derived from Black Tilapia Fish Bone via Calcination Method for Biomedical Applications Authors: Siti Khadijah Dermawan, Zamratul Maisarah Mohd. Ismail, Muhamad Zaki Jaffri, Nor Atiqah Syafinaz Mohd Pu'Ad and Hasan Zuhudi Abdullah | Siti Khadijah Dermawan |
| 11.10 am | 43 | Synthesis of the Natural Halal Hydroxyapatite from Black Tilapia Fish Scales for Biomedical Applications Authors: Muhamad Zaki Jaffri, Zamratul Maisarah Mohd Ismail, Siti Khadijah Dermawan, Nor Atiqah Syafinaz Mohd Pu'ad and Hasan Zuhudi Abdullah | Muhamad Zaki Jaffri |
| 11.30 am | 45 | Extraction of Gelatin from Black Tilapia Fish Scales via Acidic Treatment Authors: Lee Te Chuan, Teoh Lay Ying, Leong Geok Jing, Janifal Alipal, Hatijah Basri, Maizlinda Izwana Idris and Hasan Zuhudi Abdullah | Lee Te Chuan |
| 11.50 am | 46 | Biosynthesis of silver nanoparticles (AgNP) using spent coffee ground and its antibacterial activity Authors: Maryam Al Hashmi and Nurliyana Ahmad Zawawi | Maryam Al Hashmi |

PARALLEL SESSION

PARALLEL SESSION 2 – 29th JUNE 2021

| ICBME 4 (Biosciences) | | | |
|-----------------------|----------|--|---------------------------|
| Time | Paper ID | Paper Title | Presenter |
| 3.20 pm | 16 | Antioxidant Activity of Local Commercial Homemade Juice Authors: Wan Nurul Akmal Wan Murni and Zaidah Rahmat | Wan Nurul Akmal Wan Murni |
| 3.40 pm | 28 | Vascular Protective Role of Cobalt protoporphyrin in HUVECs under hyperglycemic conditions Authors: Bill Cheng and Cheng-Han Hsieh | Bill Cheng |
| 4.00 pm | 30 | RAFT Polymerization toward Preparation of Multi-Functional Magnetic Nanoparticles for TME-responsive Drug Delivery System Authors: Tzu-Chien Wu, Chiao-Ling Lai and Chian-Hui Lai | Tzu-Chien Wu |
| 4.20 pm | 44 | Sodium Alginate /Copper Oxide Biocomposite Film for Biomedical Applications Authors: Siti Natrah Abd.Bakil, Maizlinda Izwana Idris, Iylia Izzati Jamal and Nur Afiqah Adyani Razak | Maizlinda Izwana Idris |
| 4.40 pm | 29 | The cytoprotective roles of Cobalt Protoporphyrin in in vitro model of diabetic wounds Authors: Bill Cheng, Ying-Ying Lai and Chih-Ling Chen | Bill Cheng |
| 5.00 pm | 52 | Mucin Glycosylation In Relation To Golgi Stress Response: What's Next? - A Mini-Review Authors: Mohamad Ikhwan Jamaludin and Hiderou Yoshida | Mohamad Ikhwan Jamaludin |

PARALLEL SESSION

| ICBME 5 (Healthcare Technology) | | | |
|---------------------------------|----------|--|---------------------------|
| Time | Paper ID | Paper Title | Presenter |
| 3.20 pm | 21 | Classification of Badminton Action Using Various Classifiers Via Convolutional Neural Network Features Authors: Nur Azmina Rahmad and Muhammad Amir As'Ari | Nur Azmina Rahmad |
| 3.40 pm | 25 | Comparison of 2D and 3D Convolutional Neural Network <u>For</u> Prediction In Sperm Analysis Authors: Goh Voon Hueh, Muhammad Amir As'Ari and Lukman Hakim Ismail | Goh Voon Hueh |
| 4.00 pm | 47 | Development of a Mobile-Based Application for Medical Device Disposal Management System for In-House Clinical Engineering Department in Malaysia Authors: A'fiani Atiqah Mohd Nizam, Mariaulpa Salahan, Farhana Norazman and Raimi Dewan | A'fiani Atiqah Mohd Nizam |
| 4.20 pm | 48 | Facilitating Medical Equipment Acquiring Process in Malaysia Using Mobile-Based Application Authors: Farhana Norazman, Raimi Dewan, Afiani Atiqah Mohd Nizam and Mariaulpa Sahalan | Farhana Norazman |
| 4.40 pm | 54 | Potential Application of In-House Marker-less Biomechanics Motion Capture System in Medical Ankle Rehabilitation Authors: Pei Ying Eng, Mohd Zamani Ngali and Chang An Wee | Pei Ying Eng |

PARALLEL SESSION

| ICBME 6 (Medical Sciences) | | | |
|----------------------------|----------|---|--------------------|
| Time | Paper ID | Paper Title | Presenter |
| 3.20 pm | 36 | A Conceptual Study of Biofield Signaling through Electrophotonic Image Authors: Janifal Alipal | Janifal Alipal |
| 3.40 pm | 18 | Efficacy of Lidocaine Iontophoresis as a Topical Anesthesia in Human Intra/ Extra-oral Authors: Malek Mahmoud Rais, Mohd Najeb Bin Jamaludin and Azli Bin Yahya | Malek Mahmoud Rais |
| 4.00 pm | 20 | Review of Cervical Cancer in Malaysia: Knowledge and Challenges Authors: Wan Azani Wan Mustafa and Afiqah Halim | Afiqah Halim |
| 4.20 pm | 57 | Unsteady Flow Hemodynamics in A Constricted Channel Replicating Atherosclerosis in Carotid Artery Authors: Mohd Amir, Mohamad Ikhwan Kori, Abdullah Yousuf Usmani and Kahar Osman | Mohd Amir |
| 4.40 pm | 33 | Size Dependence of Gold nanoparticle as Computed Tomography Contrast Agent for Lesion Malignancy Screening Authors: Wei-Ting Lin, Guo-Sheng Lin, Shan-Ru Ye and Kuo-Chih Liao | Wei-Ting Lin |

PARALLEL SESSION

PARALLEL SESSION 3 – 30th JUNE 2021

| ICBME 7 (Healthcare Technology) | | | |
|---------------------------------|----------|---|-------------------|
| Time | Paper ID | Paper Title | Presenter |
| 10.20 am | 22 | Fabrication of double emission enhancement fluorescent nanoparticles with combining PET and AIEE effects Authors: Cheng-Chung Chang, Chia-Feng Hsieh and Min-Wei Wu | Min-Wei Wu |
| 10.40 am | 23 | Synergistic Effects Based on 3D-Nanostructures for Plasmon-Enhanced Fluorescence and Surface-Enhanced Raman Scattering detection Authors: Smruti R. Sahoo, Cheng-Chung Chang and Min-Wei Wu | Smruti R. Sahoo |
| 11.00 am | 55 | Potential Application of Porous Media Model Estimation as a Computational Fluid Dynamic Approach on Passivation Process of Stainless-Steel Surgical Instrumental Rack Authors: Mohd Zamani Ngali, Mohd Adam Hilaludin and Siti Badriah Khairu Razak | Mohd Zamani Ngali |
| 11.20 am | 50 | Modeling of water droplet wettability on anti-wetting sheet of Sand/HDPE Authors: Ab Aziz Mohd Yusof, Sidra Siraj, Kamariah Md Isa, Ali Al-Marzouqi, M.Z. Iqba, Waleed Ahmed and Kahar Osman | Sidra Siraj |

PARALLEL SESSION

| ICBME 8 (Medical Sciences) | | | |
|----------------------------|----------|---|-----------------------|
| Time | Paper ID | Paper Title | Presenter |
| 10.20 am | 6 | Enhanced Detection of Retinal Blood Vessels by Integrating DSI-BBCCE into Tyler Coye Algorithm Authors: Kelvin Chia Hiik Ling, Tian Swee Tan, Yan Chai Hum, Wan Hazabbah Wan Hitam, Jia Hou Tan, Sameen Ahmed Malik, Joyce Sin Yin Sia, Matthias Foh Thye Tiong, Kah Meng Leong, Sinan S. Mohammed Sheet and Roy Eduardo Aguilar Leon | Kelvin Chia Hiik Ling |
| 10.40 am | 19 | Nucleus Cell Segmentation on Pap Smear Image Using Bradley Modification Algorithm Authors: Afiqah Halim and Wan Azani Wan Mustafa | Afiqah Halim |
| 11.00 am | 27 | Selection Moment Invariants Feature Extraction Techniques of Medical Images based on Intraclass Analysis Authors: Mohd Wafi Nasrudin | Mohd Wafi Nasrudin |
| 11.20 am | 17 | Elevated peritoneal soluble endoglin and GDF-15 in infertile women with severe endometriosis and pelvic adhesion Authors: Budi Santoso, Ashon Sa'adi, Sri Ratna Dwiningsih, Arif Tunjungseto, M. Y. Ardianta Widyanugraha, Alfin Firasy Mufid, Nanda Yuli Rahmawati and Fadhil Ahsan | Nanda Yuli Rahmawati |
| 11.40 am | 53 | SPECT Image Segmentation Estimation of Targeted Volume <u>For</u> Iodine-131 Radionuclide Therapy Authors: Mohd Akmal Masud, Mohd Zamani Ngali and Siti Amira Othman | Mohd Akmal Masud |

PARALLEL SESSION

| ICBME 9 (Animal Sciences) | | | |
|---------------------------|----------|---|---------------------------|
| Time | Paper ID | Paper Title | Presenter |
| 10.20 am | 41 | Bacteriology of the Reproductive Tracts of Mares with Vulva Inclination Authors: Fuziaton Baharudin, Jasni Sabri and Maizan Mohamed | Fuziaton Baharudin |
| 10.40 am | 13 | Effects of Dietary Metabolize Energy Level on Dry Matter Intake, Nutrients Intake, Body Weight Changes and Residual Feed Intake of Lactating Dorper Ewes Authors: Mira Panadi, Nor Dini Rusli and Khairiyah Mat | Mira Panadi |
| 11.00 am | 32 | The Current Design Component of Stall in Commercial Equine Center Peninsular Malaysia Authors: Nur Fadilah Darmansah, Mira Panadi and Ahmad Azeem Ahmad Astor | Nur Fadilah Darmansah |
| 11.20 am | 49 | Investigation on Levels of Oestrogen and Progesterone in Mares with Inclined Vulva Authors: Fuziaton Baharudin and Jasni Sabri | Fuziaton Baharudin |
| 11.40 am | 15 | Total Mixed Ration (TMR) Feeding for Horses: A Review Authors: Maisarah Madihah Matrifin, Mira Panadi, Nur Fadilah Darmansah and Fuziaton Baharudin | Maisarah Madihah Matrifin |
| 12.00 pm | 34 | Bokashi Composting Bin for Horse Manure Compost Authors: Nur Fadilah Darmansah, Mira Panadi, Leong Hong Yeng, Izwyn Zulkapri, Kamaruzaman Soeed and Muhammad Al Hafizzudin Samsudin | Nur Fadilah Darmansah |
| 12.20 pm | 51 | The Environment, Human and Animal Factors in Influencing Fertility of Mares in Kelantan Authors: Fuziaton Baharudin and Sarah Aliah Mohd Razi | Fuziaton Baharudin |

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