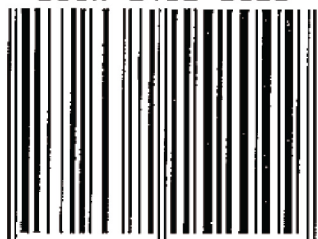


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FOREWORD BY CHIEF EDITOR

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Assalamualaikum warahmatullahi wabarakatuh and warm greetings!

The current issue of IPI Bulletin deals exclusively with the collection of publications and impactful activities throughout the year 2018. Congratulations to researchers at IPI who have contributed 25 impact journals (Q1 and Q2) along with five research books. This achievement is from the perseverance and cooperation of all IPI researchers and support staff. In addition, 16 main programs and activities have been conducted by IPI throughout the year 2018. These activities have benefited local stakeholders and communities.

If you have any comments or suggestions about any of the content of the IPI Bulletin, please drop us a line at pghikp@ukm.edu.my.

Your feedback is most welcome.

Thank you.

ASSOC. PROF. SR. DR. KHAIRUL NIZAM ABDUL MAULUD



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- Focus Group Discussion (FGD) Programme with Stakeholders in Pahang
- 2018 Smart Control Helicopter Workshop and Competition
- Public Lecture Entitled "The Drivers of Climate Change In The Maritime Continents And The Enabling Role of Big Data and Modelling"
- Hydraulic Modeling Course For Coastal Development Projects (Level 1)
- ANGKASA Student Association (ASA) 8th Annual General Meeting
- Taklimat Permohonan Geran Kursi Perubahan Iklim UKM-YSD
- Kem Sehari Skuad Palma Emas 2018
- Sesi Pembentangan Akhir Program iG-Home dan Majlis Penutup Program Pintar-UKM Sustainability and Green Technology Through iG-Home Module Fasa 2, 2018
- SEAIONO™ Software Workshop
- IPI Research Colloquium 2018
- Seminar Pembentangan Kemajuan dan Hasil Penyelidikan Geran Kursi Perubahan Iklim UKM-YSD
- Focus Group Discussion (FGD) Programme With Communities In Selangor

PUBLICATIONS (High Impact Journals)

BIL	PAPER TITLE JOURNAL/PROCEEDING NAME	AUTHORS*
1.	Analysis of the regional ionosphere at low latitudes in support of the biomass ESA mission IEEE Transactions on Geoscience and Remote Sensing (Q1)	Lucilla Alfonsi*, Gabriella Povero, Luca Spogli, Claudio Cesaroni, Biagio Forte, Cathryn N. Mitchell, Robert Burston, Sreeja Vadakke Veettil, Marcio Aquino, Virginia Klausner, Marcio T. A. H. Muella, Michael Pezzopane, Alessandra Giuntini, Ingrid Hunstad, Giorgiana De Franceschi, Elvira Musicò, Marco Pini, Vinh La The, Hieu Tran Trung, Asnawi Husin, Sri Ekawati, Charisma Victoria de la Cruz-Cayapan, Mardina Abdullah, Noridawaty Mat Daud, Le Huy Minh, Nicolas Floury.
2.	Calibration model of a low-cost air quality sensor using an adaptive neuro-fuzzy inference system Sensors (Q1)	Kemal Maulana Alhasa, Mohd Shahrul Mohd Nadzir* , Popoola Olalekan, Mohd Talib Latif, Yusri Yusup, Mohammad Rashed Iqbal Faruque, Fatimah Ahamad , Haris Hafizal Abd. Hamid, Kadaruddin Aiyub, Sawal Hamid Md Ali, Md Firoz Khan, Azizan Abu Samah, Imran Yusuff, Murnira Othman, Tengku Mohd Farid Tengku Hassim, Nor Eliani Ezani.
3.	Capacitated vehicle-routing problem model for scheduled solid waste collection and route optimization using PSO algorithm Waste Management (Q1)	M.A. Hannan*, Mahmuda Akhtar, R.A. Begum , H. Basri, A. Hussain, Edgar Scavino.
4.	Concentration of heavy metals in seafood (fishes, shrimp, lobster and crabs) and human health assessment in Saint Martin Island, Bangladesh Ecotoxicology and Environmental Safety (Q1)	Shoffian Amin Jaafar, Mohd Talib Latif*, Intan SurayaRazak, Nurul Bahiyah Abd Wahid, Md Firoz Khan , Thunwadee Srithawirat.
5.	Constraining the emission of particulate matter from Indonesian peatland burning using continuous observation data Journal of Geophysical Research- Atmospheres (Q1)	Mohammad Abdul Baki*, Md. Muzammel Hossain, Jhuma Akter, Shamshad B. Quraishi, Md. Fajlul Haque Shojib, A.K.M. Atique Ullah, Md Firoz Khan .
6.	Dual Band Metamaterial Antenna For LTE/Bluetooth/WiMAX System Scientific Reports (Q1)	Md. Mehedi Hasan* , Mohammad Rashed Iqbal Faruque , Mohammad Tariqul Islam.
7.	Impact of regional haze towards air quality in Malaysia: A review Atmospheric Environment (Q1)	Latif, M. T.*, Othman, M., Idris, N., Juneng, L., Abdullah, A. M., Hamzah, W. P., Khan M. F. , Nik Sulaiman, N. M., Jewaratnam, J., Ghamohammadi, N., Sahani, M., Xiang, C. J., Ahamad, F., Amil, N., Darus, M., Varkkey, H., Tangang, F., and Jaafar, A. B.

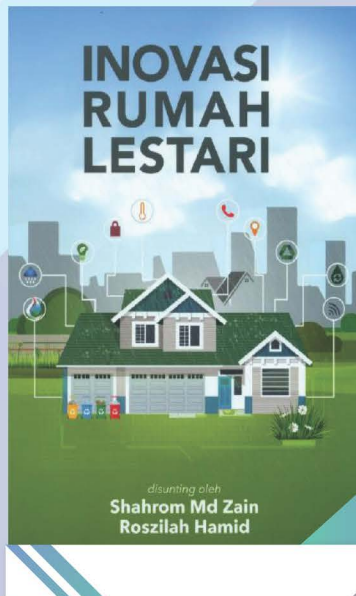
BIL	PAPER TITLE JOURNAL/PROCEEDING NAME	AUTHORS*
8.	Impact of the 2015 wildfires on Malaysian air quality and exposure: a comparative study of observed and modeled data Environmental Research Letters (Q1)	Mohammed Iqbal Mead, Stefano Castruccio, Mohd Talib Latif, Mohd Shahrul Mohd Nadzir , Doreena Dominick, Abhinav Thota, Paola Crippa*.
9.	Improving individual tree crown delineation and attributes estimation of tropical forests using airborne LiDAR data Forests (Q1)	Wan Shafrina Wan Mohd Jaafar* , Iain Hector Woodhouse, Carlos Alberto Silva, Hamdan Omar, Khairul Nizam Abdul Maulud , Andrew Thomas Hudak, Carine Klauberg, Adrián Cardil, Midhun Mohan.
10.	Left-handed metamaterial inspired by joint TD geometry on flexible NiAl ₂ O ₄ substrate PLoS ONE (Q1)	Eistiak Ahamed, Md. Mehedi Hasan, Mohammad Rashed Iqbal Faruque* , Mohd Fais Bin Mansor, Sabirin Abdullah , Mohammad Tariqul Islam.
11.	Local and transboundary factors impacts on trace gases and aerosol during haze episode in 2015 El Nino in Malaysia Science of the Total Environment (Q1)	Nur Adilla Che Samsuddin, Md Firoz Khan* , Khairul Nizam Abdul Maulud , Ahmad Hazuwan Hamid , Fahia Tarannum Munna, Muhammad Aizat Ab Rahim, Mohd Talib Latif, Md. Akhtaruzzaman
12.	Perfect metamaterial absorber with high fractional bandwidth for solar energy harvesting PLoS ONE (Q1)	Mohammad Jakir Hossain* , Mohammad Rashed Iqbal Faruque , Mohammad Tariqul Islam
13.	Physicochemical factors and their potential sources inferred from long-term rainfall measurements at an urban and a remote rural site in tropical areas Science of The Total Environment (Q1)	Md Firoz Khan* , Khairul Nizam Abdul Maulud , Mohd Talib Latif, Jing Xiang Chung, Norhaniza Amil, Azwani Alias, Mohd Shahrul Mohd Nadzir , Mazrura Sahani, Maznorizan Mohammad, Mohd Firdaus Jahaya, Hanashriah Hassan, Farah Jeba, Norhayati Md Tahir, Sharifah Mastura Syed Abdullah .
14.	Potential factors that impact the radon level and the prediction of ambient dose equivalent rates of indoor microenvironments Science of the Total Environment (Q1)	Mohamed Yasreen Mohamed Ali, Marlia M. Hanafiah*, Md Firoz Khan .
15.	Preparation of NiAl ₂ O ₄ - based flexible substrates for metamaterials with negative dielectric properties Scientific Reports	Md Atiqur Rahman, Eistiak Ahamed, Mohammad Rashed Iqbal Faruque* , Mohammad Tariqul Islam.
16.	Composition of carbohydrates, surfactants, major elements and anions in PM _{2.5} during the 2013 Southeast Asia high pollution episode in Malaysia Particuology (Q2)	Shoffian Amin Jaafar, Mohd Talib Latif*, Intan SurayaRazak, Nurul Bahiyah Abd Wahid, Md Firoz Khan , Thunwadee Srithawirat.
17.	Grad-Shafranov reconstruction of magnetohydrostatic equilibria with nonisotropic plasma pressure: the theory Earth, Planets and Space (Q2)	Wai-Leong Teh*

BIL	PAPER TITLE JOURNAL/PROCEEDING NAME	AUTHORS*
18.	Labyrinth double split open loop resonator based bandpass filter design for S, C and X-band application Journal of Physics D: Applied Physics (Q2)	Jubaer Alam* , Mohammad Rashed Iqbal Faruque , Mohammad Tariqul Islam
19.	Left handed metasurface loaded with ring resonator modelling for satellite application International Journal of Satellite Communications and Networking (Q2)	Md. Mehedi Hasan* , Mohammad Rashed Iqbal Faruque , Mohammad Tariqul Islam.
20.	Measurement of the magnetic reconnection rate in the Earth's magnetotail Journal of Geophysical Research: Space Physics (Q2)	T. K. M. Nakamura*, K. J. Genestreti, Y.-H. Liu, R. Nakamura, W.-L. Teh , H. Hasegawa, W. Daughton, M. Hesse, R. B. Torbert, J. L. Burch, B. L. Giles
21.	Review on applications of artificial intelligence methods for dam and reservoir-hydro-environment models Environmental Science and Pollution Research (Q2)	Mohammed Falah Allawi*, Othman Jaafar, Firdaus Mohamad Hamzah, Sharifah Mastura Syed Abdullah , Ahmed El-shafie
22.	Seasonal variations of atmospheric particulate matter and its content of heavy metals in Klang Valley, Malaysia Aerosol and Air Quality Research (Q2)	Rasheida E. Elhadi, Ahmad Makmom Abdullah*, Abdul Halim Abdullah, Zulfa Hanan Ashaari, Md Firoz Khan
23.	Spatial-temporal variations in surface ozone over Ushuaia and the Antarctic region: observations from in situ measurements, satellite data, and global models Environmental Science and Pollution Research (Q2)	Mohd Shahrul Mohd Nadzir* , Matthew J. Ashfold, Md Firoz Khan , Andrew D. Robinson, Conor Bolas, Mohd Talib Latif, Benjamin M. Wallis, Mohammed Iqbal Mead, Haris Hafizal Abdul Hamid, Neil R. P. Harris, Zamzam Tuah Ahmad Ramly, Goh Thian Lai, Ju Neng Liew, Fatimah Ahamad, Royston Uning, Azizan Abu Samah, Khairul Nizam Maulud , Wayan Suparta , Siti Khalijah Zainudin , Muhammad Ikram Abdul Wahab, Mazrura Sahani, Moritz Müller, Foong Swee Yeok, Nasaruddin Abdul Rahman, Aazani Mughaid, Kenobi Isima Morris, Nicholas Dal Sasso.
24.	Surfactants in the sea surface microlayer, subsurface water and fine marine aerosols in different background coastal areas Environmental Science and Pollution Research (Q2)	Suhana Shaharom, Mohd Talib Latif*, Md Firoz Khan , Siti Norbalqis Mohd Yusof, Nor Azura Sulong, Nurul Bahiyah Abd Wahid, Royston Uning, Suhaimi Suratman.
25.	Surfactants in the sea surface microlayer, underlying water and atmospheric particles of tropical coastal ecosystems Water, Air and Soil Pollution (Q2)	Royston Uning, Mohd Talib Latif*, Kai Ling Yu, Sze Yin Cheng, Fatimah Ahamad , Md Firoz Khan , Edmand Andrew Bedurus, Suhaimi Suratman.

Authors from IPI are shown in bold.

*Corresponding Author

PUBLICATIONS (Books)

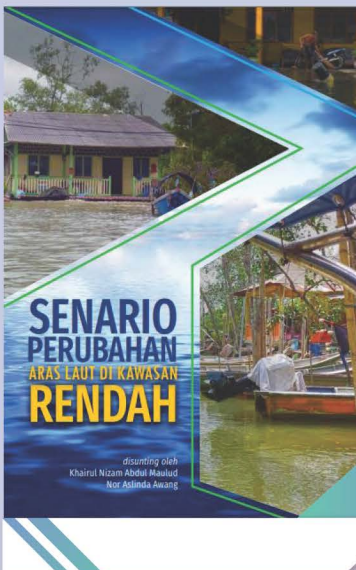


INOVASI RUMAH LESTARI

Editors: Shahrom Md Zain, Roszilah Hamid

Publisher: Penerbit UKM

ISBN: 9789674127923



SENARIO PERUBAHAN ARAS LAUT DI KAWASAN RENDAH

Editors: Khairul Nizam Abdul Maulud, Nor Aslinda Awang

Publisher: Penerbit UKM

ISBN: 9789674126247



LAUT MAKAN DARAT

Authors: Wan Hanna Melini Wan Mohtar, Siti Aminah Bassa Nawang, Khairul Nizam Abdul Maulud

Publisher: Institut Penyelidikan Hidraulik (NAHRIM) & Universiti Kebangsaan Malaysia (UKM)

ISBN: 9789832982562

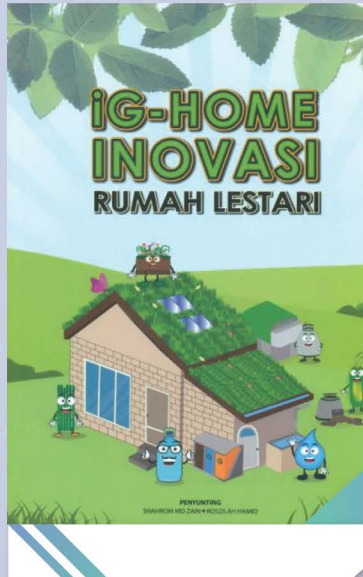
PUBLICATIONS (Books)



SPACE SCIENCE AND COMMUNICATION FOR SUSTAINABILITY

Editors: Wayan Suparta, Mardina Abdullah & Mahamod Ismail

Publisher: Springer Nature
ISBN: 9789811065736



iG-HOME INOVASI RUMAH LESTARI

Editors: Shahrom Md Zain, Roszilah Hamid

Publisher: Institut Perubahan Iklim (IPI)
ISBN: 9789670829821

PROGRAMMES & ACTIVITIES

Climate Change and Space Science Publication Workshop

Date: 10 January 2018

Venue: Institute of Climate Change (IPI)

Organizer: Institute of Climate Change (IPI)

The Student Publication Workshop on Climate Change and Space Science Research 2018 was held on 10 January 2018 at the Bangi-Putrajaya Hotel. The Chair has collaborated with the Institute of Climate Change to organise this programme with participation of IPI students. Four experienced researchers shared their knowledge and experience in producing good publications.



Super Blue Blood Moon Observation Program

Date: 31 January 2018

Venue: Dewan Gemilang UKM

Organiser: Space Science Centre (ANGKASA), Institute of Climate Change (IPI), Pusat Islam UKM and Infinity Infocus Co.

Super Blue Blood Moon Observation Program participated by more than 50 students from secondary schools around Bangi and Putrajaya. This program was hosted in conjunction with the natural phenomenon of super blue blood moon, which last occurred in 1982. ANGKASA and Infinity Infocus Co. prepared a total of 11 telescopes, two of which is owned by ANGKASA. The public also came to the site and some brought their own telescope to observe the phenomenon. An eclipse prayer led by Pusat Islam UKM representative preceded the observation event. The event ended at midnight and most of the participants were happy to experience the rare phenomenon.





Training Of Trainers Workshop: UKM-Pintar Sustainability and Green Technology Through iG-Home Module Phase 2 2018

Date: 3-5 February 2018

Venue: Studio Rekabentuk, Faculty of Engineering & Built Environment

Organiser: UKM-YSD Chair in Climate Change & IG-HOME



The workshop was held from 3 – 5 February 2018 at Studio Rekabentuk, Faculty of Engineering & Built Environment UKM. The 3-day workshop was filled with activities and programmes related to the IG-HOME module. The objective of the workshop was to deliver the module and educate the participants on “Buku Teori iG-HOME Inovasi Rumah Lestari and Buku Aktiviti iG-HOME Inovasi Rumah Lestari”. 34 teachers from 17 selected secondary schools around Kedah had participated in this workshop. The participants are expected to share the knowledge acquired with their students and implement the IG-HOME programme in their own schools.

Opening Ceremony of Pintar-UKM Sustainability and Green Technology Through iG-Home Module Phase 2 2018

Date: 5 February 2018

Venue: Faculty Meeting Room, Faculty of Engineering & Built Environment

Organiser: UKM-YSD Chair in Climate Change & IG-HOME

The opening ceremony of the above programme was held on 5 February 2018 at the Faculty of Engineering & Built Environment's meeting room. The programme was officiated by Puan Karimah Tan Abdullah, Chief Executive Officer of PINTAR Foundation. Representatives from Yayasan Hasanah and Jabatan Pendidikan Negeri Kedah also attended the programme. 34 teachers from 17 schools around Kedah had participated in the Training of Trainers workshop that was conducted earlier on 3-5 February 2018.



Focus Group Discussion (FGD) Programme with Stakeholders in Pahang

Date: 26 February 2018

Venue: Grand Darul Makmur Hotel, Pahang Darul Makmur

Organiser: Earth Observation Centre (EOC), Institute of Climate Change (IPI)

The objectives of the programme were to get feedback from the stakeholders regarding issues, challenges and opinions about climate change and sea level rise impact; and to obtain feedback related to adaptation actions done by the stakeholders to confront the climate change threat. The findings of the study can be used by the state authorities to further strengthen the actions taken in relation to coastal management.



2018 Smart Control Helicopter Workshop and Competition

Date: 3 – 4 March 2018

Venue: Faculty of Engineering and Built Environment (FKAB), UKM

Organiser: Space Science Centre (ANGKASA), Centre of Advanced Electronic and Communication Engineering (PAKET), Politeknik Banting and Jabatan Pendidikan Negeri Selangor (JPNS)

The workshop aimed to provide a platform for participants to learn problem-solving skills in a wide variety of math, science, and engineering situations, develop teamwork skills by simultaneously building hardware and software and inspire students to learn more on their own and take the skills learned in the workshop to higher levels. Centre of Advanced Electronic and Communication Engineering (PAKET), Politeknik Banting Selangor and Jabatan Pendidikan Negeri Selangor (JPNS) also took part in this event as collaborators.





Public Lecture Entitled "The Drivers Of Climate Change In The Maritime Continents And The Enabling Role Of Big Data And Modelling"

Date: 11 April 2018

Venue: Conference Hall, Faculty of Science & Technology

Organiser: UKM-YSD Chair in Climate Change



The objective of the programme is to provide knowledge and exposure to students and researchers in the area of research related to climate change especially on the above-mentioned topic. The lecture was delivered by Prof. Dato' Dr. Azizan Abu Samah, Director of Malaysia Antarctica Research Programme, National Antarctic Research Centre, University of Malaya. 127 participants including UKM students, researcher and representatives from different agencies in Malaysia attended the programme.

Hydraulic Modeling Course For Coastal Development Projects (Level 1)

Date: 16 - 20 April 2018

Venue: Akar Beach Resort, Port Dickson

Organiser: Earth Observation Centre, Institute of Climate Change (IPI)

The main objective of this workshop was to provide preliminary exposure to the hydraulics report and its parameters. This workshop consists of hands on training and teaching. From this workshop, participants will able to understand the basics of coastal hydraulics and hydraulic modeling. The participants are able to understand and interpret the findings from hydraulic modeling



ANGKASA Student Association (ASA) 8th Annual General Meeting

Date: 19 April 2018

Venue: Meeting Room, Research Complex UKM

Organiser: ANGKASA Student Association (ASA) and Space Science Centre (ANGKASA), Institute of Climate Change (IPI)



Earth and Space Science Students Association (ESSA) or previously known as ANGKASA Student Association (ASA) hosted the 8th Annual General Meeting on 19 April 2018. The meeting had gathered all students from IPI and students conducting research related to IPI. In the meeting, all members actively participated in the discussion related to student issues. The former Chair of ASA also presented the activities and finance report for the year 2017/2018. Muhammad Khairul Adib bin Muhammad Yusof, a PhD student was elected as the new Chair for ESSA committee for the 2018/2019 term.

Taklimat Permohonan Geran Kursi Perubahan Iklim UKM-YSD

Date: 22 April 2018

Venue: Universiti Malaysia Kelantan (UMK)

Organiser: UKM-YSD Chair in Climate Change

The programme objective was to provide opportunities for young researchers interested in oil palm sustainability and climate change research to apply for a research grant and establish collaborative networks between universities involved. 30 researchers from three UMK branches in Kelantan (Bachok, Jeli and Pengkalan Chepa) attended the programme. The talk was delivered by the Chairholder, Prof. Dato' Dr. Sharifah Mastura Syed Abdullah. The Chair received a very positive feedback from the participants as to date, 19 research proposals has been accepted for review.



Kem Sehari Skuad Palma Emas 2018

Date: 5 May 2018

Venue: Dewan Anuwar Mahmud, Faculty of Science & Technology (FST)

Organiser: UKM-YSD Chair in Climate Change

Kem Sehari Skuad Palma Emas 2018 was held with the objective to expose and raise awareness of 9-12 year old children about the oil palm ecosystem and its impact on human life. The theory and activity books were used for teaching and learning process entitled "Biological Diversity in the oil palm Ecosystem." 16 facilitators and 80 participants from SK Rinching Hilir (35), SK Taming Jaya (35), and other schools (10) attended the programme. This programme was held in collaboration with PINTAR Foundation and Faculty of Science & Technology UKM and officiated by PINTAR Foundation's Chief Executive Officer, Puan Karimah Tan Abdullah



Sesi Pembentangan Akhir Program iG-Home Dan Majlis Penutup Program Pintar-UKM Sustainability And Green Technology Through IG-Home Module Fasa 2, 2018

Date: 7 August 2018

Venue: Royale Signature Hotel, Alor Setar Kedah

Organiser: UKM-YSD Chair in Climate Change & IG-HOME

This programme was held to conduct final assessment for schools involved in iG-HOME Phase 2 2018 programme and closing ceremony of PINTAR-UKM Sustainability and Green Technology through iG-HOME Module Phase 2 2018. 225 participants consists of student and teachers from 17 schools, representatives from UKM, PINTAR Foundation, Yayasan Hasanah and other related agencies attended the programme which has been launched by Tan Sri Dato' Seri Utama Arshad Ayub, PINTAR Foundation's Chairman.



SEAIONO™ Software Workshop

Date: 10 August 2018

Venue: Meeting Room, Research Complex UKM

Organiser: Space Science Centre (ANGKASA), Institute of Climate Change (IPI)



SEAIONO™ Software is an application program tool used for extracting ionospheric profile parameters on the ionogram from the South East Asia Low-latitude Ionospheric Network FMCW ionosonde measurement. This software was developed by ANGKASA student, Dr. Bello Saeed Abioye during his PhD studies with supervision of Prof. Ir. Dr. Mardina Abdullah and co-supervised by Dr. Nurul Shazana Abdul Hamid. ANGKASA hosted a workshop on 10 August 2018 for sharing knowledge about the software to all students and researchers. The speaker, Dr. Bello Saeed Abioye gave tutorial on how to use the software for data processing.

IPI Research Colloquium 2018

Date: 11 – 13 August 2018

Venue: Bayview Hotel, Melaka

Organiser: Institute of Climate Change (IPI) and UKM-YSD

This program was hosted as a platform for IPI students and students related to IPI to present their research progress. Mohammad Jakir Hossain and Abdul Aziz bin Ab Rahman were awarded as best presenters for Ph.D. and Master Category respectively. Prof. Dr. Mohd Talib Latif from Faculty of Science and Technology was invited to give a talk entitled "How to Produce Good Thesis and Research Paper". Apart from the colloquium, UKM-YSD also hosted a parallel workshop among their team members.



Seminar Pembentangan Kemajuan Dan Hasil Penyelidikan Geran Kursi Perubahan Iklim UKM-YSD

Date: 12 August 2018

Venue: Bayview Hotel, Melaka

Organiser: UKM-YSD Chair in Climate Change

The objective of the programme was to monitor research progress and results of active research under UKM-YSD Chair in Climate Change. Eight active researchers under the Chair attended the programme and presented their progress and findings.



Focus Group Discussion (FGD) Programme With Communities In Selangor

Date: 19 – 21 October 2018

Venue: Kampung Batu Laut, Kampung Sg. Sembilan, Bagan Sg. Pasir and Kampung Haji Dorani, Selangor Darul Ehsan

Organiser: Institute of Climate Change (IPI)

The objectives of the programme were to study community knowledge, understanding and adaptation about climate change and sea level rise. The community also shared experiences dealing with problems of sea level rise and coastal erosion which includes effects to their monthly income. The programme raised community awareness on recent study findings to assist them in addressing problems of sea level rise and coastal erosion.





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