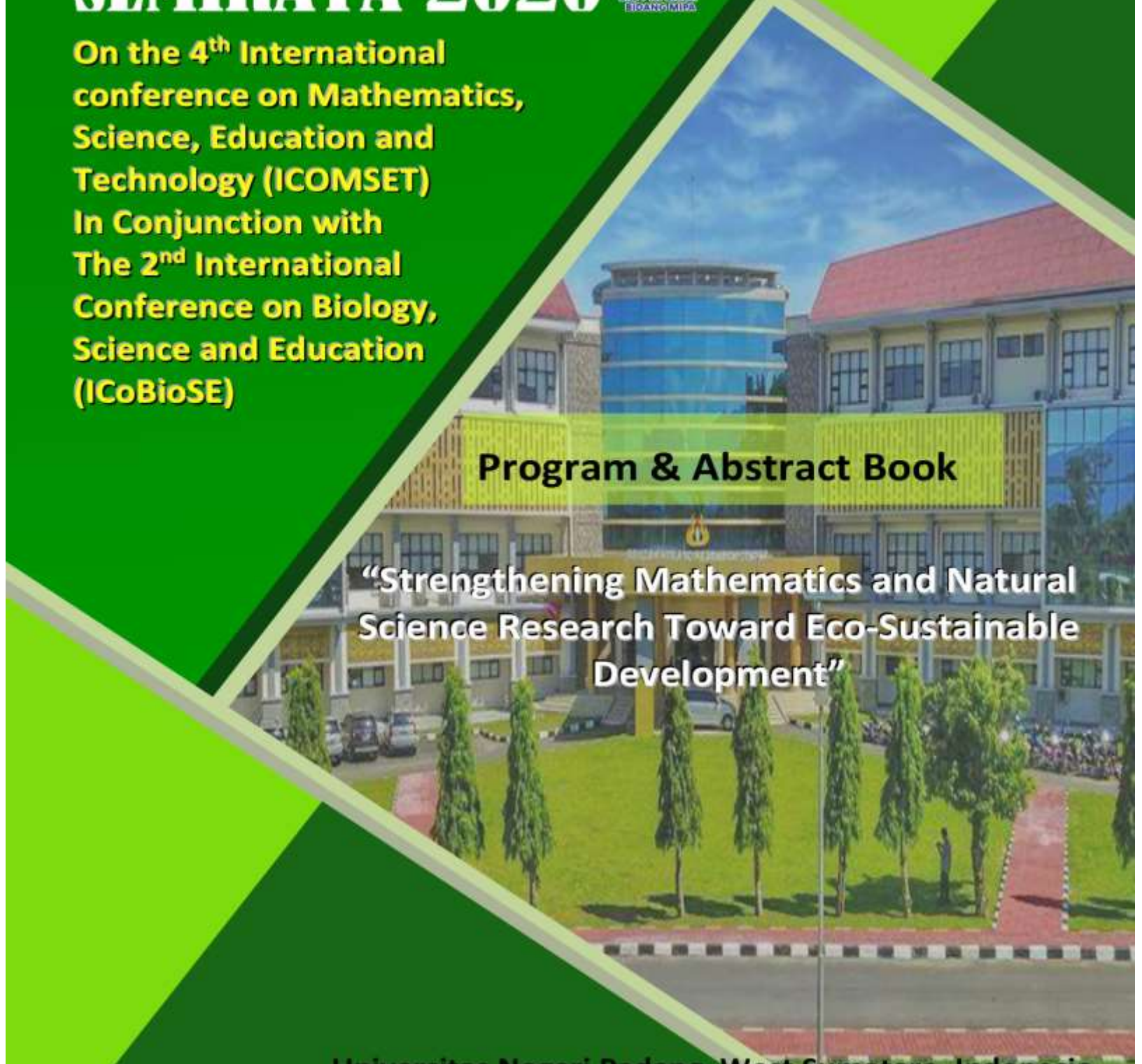
WEBINAR

SEMIRATA 2020

On the 4th International conference on Mathematics, Science, Education and Technology (ICOMSET) In Conjunction with The 2nd International Conference on Biology, Science and Education (ICoBioSE)



Program & Abstract Book

"Strengthening Mathematics and Natural Science Research Toward Eco-Sustainable Development"

Universitas Negeri Padang, West Sumatera, Indonesia
September 19th,2020

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RUNDOWN OF ICOMSET 2020

Time	Activity
07:30 – 08:00 AM	Registration
08:00 – 08:10 AM	Sing The Indonesia National Anthem "Indonesia Raya" Recitation of The Holy Qur'an
	Opening Speech
08:10 – 08:15 AM	General Chair, ICOMSET ICoBioSE 2020: Rijal Satria, Ph.D.
08:15 – 08:20 AM	Dean of FMIPA UNP: Dr. Yulkifli, S.Pd, M.Si.
08:20 – 08:25 AM	Chief of BKS PTN Wilayah Barat: Dr. Syamsudhuha, M.Sc.
08:25 – 08:35 AM	Rector of UNP: Prof. Drs. Ganefri, M.Pd., Ph.D
08:35 – 08:40 AM	Recitation of the Prayer
08:40 – 08:45 AM	Break
08:40 – 09:20 AM	Keynote 1: Prof. R. Manjunatha Kini Moderator: Muhyiatul Fadilah, M.Pd.
09:20 – 10:00 AM	Keynote 2: Dr. Weeyawat Jaitrong
10:00 – 10:20 AM	Keynote 3: Ministry of Research and Technology: Prof. Bambang Brodjonegoro, S.E., M.U.P., Ph.D.
10:20 – 10:25 AM	Break
10:25 – 10:45 AM	Keynote 4: Prof. Lufri, M.S. Moderator: Fadhila Ulfa Jhora, S.Pd., M.Si
10:45 – 11:30 AM	Keynote 5: Prof. Masaji Watanabe
11:30 AM – 12:30 PM	Poster Session
12:30 – 01:30 PM	Break
01:30 – 2:20 PM	Session 1 (Parallel Session) and invited speakers
02:20 – 03:00 PM	Session 2 (Parallel Session)
03:00 – 03:40 PM	Session 3 (Parallel Session)
03:40 – 04:20 PM	Session 4 (Parallel Session)
04:20 – 05:00 PM	Session 5 (Parallel Session)
05:00 – 05:30 PM	Closing Ceremony

PARALLEL SESSION SCHEDULE

Session 1								
Group : 01_Biology			**Group : 02_Chemistry**			**Group : 03_Mathematics – Statistics**		
In. Speaker: Dr. Kiki Nurcahaya, M.Sc			**In. Speaker: Dr. Irwana Nainggolan, M.Sc**			**In. Speaker: Dr. Bagus Sartono, M.Si**		
Mod : Siska Alicia Farma, M.Biomed			Mod : Miftahul Khair, Ph.D			Mod : Fadhilah Fitri, S.Si, M. Stat.		
No	Reg.ID	Name	No	Reg.ID	Name	No	Reg.ID	Name
1	ICO00143	Akhmad Syakur	1	ICO00019	Bima K. L. Dalimunthe	1	ICO00196	Khozin Mu'tamar
2	ICO00306	Anggun Sophia	2	ICO00020	Mega Ratna Dewi	2	ICO00052	Musraini M
3	ICO00104	Jessica Elfani Bermuli	3	ICO00294	Ikke Riswinia Aulia	3	ICO00148	Adi S. Kusumawardana
4	ICO00254	GusriYanti	4	ICO00022	Lini Pratiwi	4	ICO00187	Ferra Yanuar
5	ICO00088	Firdausni	5	ICO00024	Novi Yanti	5	ICO00071	Nuwairy El Furqany
Group : 04_Education 1			**Group : 05_Education 2**			**Group : 06_Physics - AST**		
In. Speaker: Dr. Dodi Deviatnto			**In. Speaker: Dr. Eng Admi Syarif**			**In. Speaker: Hermansyah, Ph.D**		
Mod : Arief Muttaqiin, M.Pd			Mod : Dr. Fitri arsih, M.Pd			Mod : Putri Dwi Sundari, M.Pd		
1	ICO00301	Retno Dwi Suyanti	1	ICO00195	Iswanti	1	ICO00237	Peberlin Sitompul
2	ICO00078	Rio Irawan	2	ICO00049	Roseli Theis	2	ICO00345	Mohammad Ali Shafii
3	ICO00204	Yaswinda	3	ICO00116	Mayang Dintarini	3	ICO00105	Aryadi Nurfalaq
4	ICO00226	Monica Prima Sari	4	ICO00317	Anton Prayitno			
5	CO00261	Ardi Widhia Sabekti	5	ICO00311	Rina Febrianti			
Group : 07_Mathematics – Statistics			**Group : 08 _Biology**			**Group : 09_Chemistry - AST**		
In. Speaker: Dr. Rado Yendra, M.Sc			**In. Speaker: Dr. Yuni Ahda, M.Si**			**In. Speaker: -**		
Mod : Defri Ahmad, S.Pd., M.Si			Mod : Yusni Atifah, M.Si			Mod : Yosi Laila Rahmi, M.Pd.		
1	ICO00238	Rizky Rosjanuardi	1	ICO00224	Sa'diatul Fuadiyah	1	ICO00241	Devi Ratna Ratnawati
2	ICO00278	Muhammad Azhari	2	ICO00326	Relsas Yogica	2	ICO00233	Eni Widiyati
3	ICO00280	Salde Ofera	3	ICO00209	Relsas Yogica	3	ICO00236	Lelifajri
4	ICO00287	Dodi Devianto	4	ICO00017	Yosi Laila Rahmi	4	ICO00281	Deliza
5	ICO00221	Dharma Lesmono	5	ICO00338	Zulyusri			

PARALLEL SESSION SCHEDULE

Session 2								
Group : 01_Biology			**Group : 02_Chemistry**			**Group : 03_Mathematics – Statistics**		
No	Reg.ID	Name	No	Reg.ID	Name	No	Reg.ID	Name
1	ICO00043	Maya Sari	1	ICO00087	Nur Afriana	1	ICO00202	Sumanang Muhtar Gozali
2	ICO00069	Putra Santoso	2	ICO00141	Sugeng Hadinoto	2	ICO00243	Sumanang Muhtar Gozali
3	ICO00276	Siti Morin Sinaga	3	ICO00028	Friska Febriyanti	3	ICO00264	Fitri Maya Puspita
4	ICO00213	Supriatno	4	ICO00194	Nurasia	4	ICO00120	Ita Wulandari
5	ICO00251	H. A. Oramahi	5	ICO00244	Irfan Gustian	5	ICO00229	Citra Fahdilla
Group : 04_Education 1			**Group : 05_Education 2**			**Group : 06_Physics - AST**		
1	ICO00310	Yofi Astuti	1	ICO00118	Anis Farida Jamil	1	ICO00096	Nur Ichzan AS
2	ICO00048	Zara Faraniza	2	ICO00123	Minatun Nadlifah	2	ICO00129	Endang Haryati
3	ICO00047	Zara Faraniza	3	ICO00097	Nilam P. Munir	3	ICO00135	Khaeriah Dahlan
4	ICO00131	Trisna Amelia	4	ICO00313	Lizza Novianita	4	ICO00101	Aswar Anas
5	ICO00279	Ibnu Hajar	5	ICO00219	Ratih Permata Sari	5	ICO00334	Teja Dwi Susanto
Group : 07_Mathematics – Statistics			**Group : 08 _Biology**			**Group : 09_Chemistry - AST**		
1	ICO00205	Eliza Yulistya Ultami	1	ICO00007	Ardi	1	ICO00346	Ananda Putra
2	ICO00068	Wayan Somayasa	2	ICO00032	Fitri Arsih	2	ICO00090	Ardinal
3	ICO00080	Wayan Somayasa	3	ICO00332	Muhyiatul Fadilah	3	ICO00296	Failisnur
4	ICO00102	Miftahuddin	4	ICO00225	Heffi Alberida	4	ICO00184	Deni Agus Triawan
5	ICO00286	Eha Espinoza	5	ICO00308	Ganda Hijrah Selaras			

PARALLEL SESSION SCHEDULE

Session 3								
Group : 01_Biology			**Group : 02_Chemistry**			**Group : 03_Mathematics – Statistics**		
No	Reg.ID	Name	No	Reg.ID	Name	No	Reg.ID	Name
1	ICO00099	Rina Delfita	1	ICO00074	Nindita C. A. Susanto	1	ICO00228	Ance Satria
2	ICO00089	Inda Three Anova	2	ICO00255	Miftahul Khair	2	ICO00162	Leli Deswita
3	ICO00331	Linda Advinda	3	ICO00260	Yuliana Arianti	3	ICO00178	Muhammad Ikbal
4	ICO00084	Elvi Rusmiyanto PW	4	ICO00274	Wiji Utami	4	ICO00265	Sisca Octarina
			5	ICO00211	Morina Adfa			
Group : 04_Education 1			**Group : 05_Education 2**			**Group : 06_Physics - AST**		
1	ICO00298	A.Halim	1	ICO00218	Sutiaharni	1	ICO00248	Muhammad Irfan
2	ICO00297	A.Halim	2	ICO00103	Arif Hidayatul Khusna	2	ICO00289	Tanti
3	ICO00109	Widya	3	ICO00111	Suci Wulandari	3	ICO00093	Irsan Rahman
4	ICO00335	Arief MUTTAQIIN	4	ICO00110	Meria Ultra Gusteti	4	ICO00094	Rahman Syam
5	ICO00051	Najmiatul Fajar	5	ICO00182	Saleh Haji	5	ICO00023	Rahmah Evita Putri
Group : 07_Mathematics – Statistics			**Group : 08 _Biology**			**Group : 09_Chemistry - AST**		
END OF SESSION			1	ICO00014	Dezi Handayani	1	ICO00175	Lucky Enggraini Fitri
			2	ICO00008	Mades Fifendy	2	ICO00235	Indrawata Wardhana
			3	ICO00258	Fitra Arya Nugraha	3	ICO00263	Rizal Suryana
			4	ICO00285	Yusni Atifah	4	CO00259	Madyawati Latief

PARALLEL SESSION SCHEDULE

Session 4								
Group : 01_Biology			**Group : 02_Chemistry**			**Group : 03_Mathematics – Statistics**		
No	Reg.ID	Name	No	Reg.ID	Name	No	Reg.ID	Name
1	ICO00341	Silmi Yusri Rahmadani	END OF SESSION			1	ICO00278	Muhammad Azhari
2	ICO00348	Henny Herwina				2	ICO00180	Zulfia Memi Mayasari
3	ICO00010	Resti Fevria				3	ICO00192	Baki Swita
4	ICO00003	Siska Alicia Farma						
Group : 04_Education 1			**Group : 05_Education 2**			**Group : 06_Physics - AST**		
1	ICO00077	Dewi Juita	1	ICO00070	Rio Aurachman	1	ICO00112	Steffi Liem
2	ICO00257	Rahmawati	2	ICO00312	Rosalia D. Widiya Sari	2	ICO00114	Gustri Yeni
3	ICO00262	Nur E. Kusuma Hindrasti	3	ICO00188	Ronal Rifandi	3	ICO00121	Dedy Setiawan
4	ICO00125	Asrizal	4	ICO00309	Afifah Zafirah	4	ICO00130	Edi Saputra
5	ICO000336	Helendra	5	ICO00199	Sri Suryanti	5	ICO00021	Melisa
Group : 07_Mathematics – Statistics			**Group : 08 _Biology**			**Group : 09_Chemistry - AST**		
END OF SESSION			1	ICO00216	Moralita Chatri	1	ICO00091	Kamsina
			2	ICO00215	Afifatul Achyar	2	ICO00092	Ulfa Khaira
			3	ICO00253	Afifatul Achyar	3	ICO00266	Haliatur Rahma
			4	ICO00307	Rijal Satria	4	ICO00132	Wirmie Eka Putra
			5	ICO00275	Elsa Yuniarti	5	ICO00169	Indra Weni

Forewords

By the name of Almighty Allah SWT and Our prophet, Muhammad SAW, we send endless thanks for all of gifts and guidance.

It is our great pleasure and privilege to present this publication of Webinar "SEMIRATA 2020 on The 4th International Conference on Mathematics, Science, Education and Technology (ICOMSET) in conjunction with The 2nd International Conference on Biology, Science and Education (ICoBioSE)", which was held at September 19th, 2020 in Universitas Negeri Padang, Padang, West Sumatra, Indonesia.

Previously, we have plans to hold this International seminar in here and want to invite all of you to come to West Sumatra and enjoy its beautiful nature. Unfortunately, as we know, nowadays, we face the crisis of Pandemic Covid 19 and restricted us to travel aboard. Because of that, we change our seminar system to online webinar. We are sure that even in this condition, we still can share our knowledge within this Webinar.

The main theme of the seminar was "*Strengthening Mathematics and Natural science research toward Eco-sustainable Development*". The conference particularly encouraged the interaction of research students and developing academics with the more established academic community in an informal setting to present and to discuss new and current work. Their contributions helped to make the Conference as outstanding as it has been. The papers contributed the most recent scientific knowledge known in the field of Biology, Chemistry, Physics, Mathematics, Statistic, Education, and Apllied Science and Technology.

This Program and abstract book will furnish the scientists of the world, especially in Indonesia with an excellent reference book. We also trust that it will be an impetus to stimulate further study and research in all these areas.

Our sincere thanks to Rector of Universitas Negeri Padang, Chief of BKS PTN MIPA Wilayah Barat, Dean of Faculty Mathematics and Natural Sciences, Universitas Negeri Padang, Head of Department Biology, all committee members and everyone who supports this even. I wish this seminar be successful. We are very grateful to all of keynote speakers for sharing their knowledge. And we thank all authors and participants for Their Contributions.

Padang, September 19th, 2020

General Chair of ICOMSET-ICoBioSE 2020

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KEYNOTE SPEAKERS

TOXINS: THE SOURCE OF INSPIRATION FOR FASCINATING RESEARCH

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ABSTRACT

Venoms form the armory of several animals in prey capture and/or predator deterrence. They have evolved as cocktails of several toxins and induce various pharmacological effects in key systems. These toxins are thought as villains as they cause death and debilitation. In reality, they have contributed more to improving our lives than cause death. Toxins have played crucial roles in the discovery and development of therapeutic and diagnostic agents for human diseases. They have also contributed as important research tools and helped us to understand molecular mechanisms of normal physiological processes such as neurotransmission, blood coagulation and platelet aggregation. Our lab in NUS has been studying structure-function relationships and mechanism of actions of novel toxins from various sources. Our research has contributed to both basic and applied sciences. Based on the functional sites of the toxins, we have developed several therapeutic agents for various human diseases. This talk will provide an overview of toxin research and the distinct dimension of both basic and applied research in the field.

Keywords : -

TO THE KNOWLEDGE OF ANTS (HYMENOPTERA, FORMICIDAE) OF THAILAND

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ABSTRACT

Thailand has a diverse range of ant fauna as a zoogeographical crossroad and biodiversity hotspot. The first record of ant species in Thailand was given by Forel (1892). Since that time, taxonomic and faunistic studies have been contributed by foreign researchers. More recently Thai myrmecologists have joined taxonomic activities, publishing many important articles, in addition to those written by foreigners. These studies have added many new species as well as new records, but the information is scattered in many taxonomic articles, making it difficult to understand the diversity of Thai ants.The latest checklist of Thai ants was published in 2005.The checklist provides information on distribution and a comprehensive bibliography.In the present study, based on an examination of museum specimens and published records, a comprehensive and critical species list of Thai ants is synthesized.Currently, 529 valid species and subspecies in 110 genera among ten subfamilies are known from 77 provinces of Thailand that are assigned to six geographical regions. Forty-one species are newly recorded for Thailand. Worldwide, 17 subfamilies, 337 genera, and 15,621 extant species and subspecies are recognized in Formicidae, excluding fossil taxa. Thus, to date the number of species and subspecies known from Thailand accounts for 3.39% of the global total and 32.34% ofthe Orental species. Known ant fauna in Thailand seem relatively poor when compared to those of China, India, Indonesia, and Malaysia (about 1,500 species for all these countries). This may be because intensive surveys have started only recently. In neighbouring countries such as Laos, Cambodia, Myanmar, and Vietnam where only approximate to 300 species have been reported, faunal surveys are still more incomplete than in Thailand. The most speciose subfamily is Myrmicinae, followed by Formicinae, Ponerinae, Dorylinae, and Dolichoderinae, respectively. The smaller subfamilies collectively areAmblyoponinae, Proceratiinae, Leptanillinae, Ectatomminae, and Pseudomyrmecinae. The most speciose ant genera in Thailand are *Polyrhachis*and *Pheidole*, followed by *Aenictus*, and *Strumigenys*. Other diverse genera include *Crematogaster, Camponotus*, and *Tetramorium*, respectively. Many genera (35) are species-poor (2–7 species) and the remaining 49 genera are represented in Thailand by a single species. According to the specimens deposited in several ant collections in Thailand and Japan, some genera are expected to be richer in species number. For instance, among *Camponotus*, *Carebara, Crematogaster, Leptogenys, Monomorium,Pheidole*, *Polyrhachis, Stigmatomma*, and *Tetramorium*not a few unidentified species are involved, awating further investigations. Also, in other genera, there are specimens identified only at generic level and thus the number of species is likely to greatly increase once these are identified. Genera collected for which no species have been identified are: *Aphaenogaster*, *Chronoxenus*, *Discothyrea*, *Gesomyrmex, Hypoponera*, *Lordomyrma*, *Nylanderia*, *Ooceraea*, *Plagiolepis*, *Ponera*, *Protanilla*, *Temnothorax*, and *Vombisidris.*Thailand is the type locality for 81 species. Twenty species have been recorded only from Thailand and are likely to be endemic. Forteen species are considered as exotic species that were reported in Thailand. This study will serve as: (1) a guideline for sample collections particularly in the upper northeast and central parts of Thailand, (2) a comprehensive bibliography specifying the endemic taxa and localities where conservation is priority importance, thus an essential resource for policy makers and conservation planners concerned with the management of insect diversity in Thailand, and (3) a warning of the spreading exotic species that would have negative impact on ecological balance and human health.

***Keywords* :** distribution, new records, updated nomenclature, taxonomy

THE ROLES AND CHALLENGES OF EDUCATIONS IN DEVELOPING SKILLS AND CHARACTERS IN THE ERA OF THE 4.0 INDUSTRIAL REVOLUTION

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ABSTRACT

The purpose of writing this article is to reveal the role of educators in the era of the industrial revolution 4.0, especially in developing the skills and character of students. It is known, so far that there are 3 students'competencies that have been developed by educators in learning, namely cognitive, affective and psychomotor. These competencies will develop according to present and future needs. Meanwhile, the main skills needed in this era of industrial revolution 4.0 are critical thinking, creativity, communication and collaboration. However, these 4 skills are not enough for students or graduates to do their best in the world of work if they are not provided with character. The characters needed now and in the future include commitment, responsibility, honesty, discipline, religion and independence. Based on the demands of the development of science and technology, there has been a change and shift in the role of educators, previously dominant teaching (transfer of knowledge) or educators as a learning resource, now their roles are changing.They are more dominant as guides, facilitators, motivators and evaluators. This change in the roles of educators is also a challenge for these educators to change. It demands that the educational patterns of prospective educators will also change according to the times and needs.

Keywords : educators, skills, character, industrial revolution 4.0

NUMERICAL APPROACH TO GENERATION OF UNDERWATER TOPOGRAPHY

Satoshi Iwakami[1], Masahiko Tamega[1], Masahide Sanada[1], Michiaki Mohri[1], Yoshitaka Iwakami[1], Shuji Jimbo[2], Masaji Watanabe[3,4], Radhiatul Husna[4]

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ABSTRACT

Techniques to generate a surface from given data points are described. A piecewise linear function over a triangular mesh represents a surface. A least square approximation updates the values of a piecewise linear function at vertices of an element with data including vertex data. Once those processes are carried out over all the elements, a mapping on nodal values is defined. A fixed point of the mapping represents the surface. Our techniques are demonstrated in application to underwater topographical data obtained with an RTK-GPS and an echo sounder. The effectiveness of our techniques is discussed.

Keywords : -

INVITED SPEAKERS

CHARACTERIZATION OF LUCIFERASE cDNA OF *Lamprigera SP*. (LAMPYRIDAE: COLEOPTERA)

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[2]Physics Department, Faculty of Mathematics and Natural Sciences, Universitas Negeri Padang
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ABSTRACT

Some organisms can emit light naturally. Fireflies are most popular organisms among them. The light is produced in all species of fireflies due to luciferase enzymes. Lamprigeraisone of the fireflies genus. Its species i.e. *Lamprigera* sp. can be found in Indonesia, especially in West Sumatra and Jambi. The characteristics of *Lamprigera* sp. are large larvae and live crawling on the ground at night. Information about the luciferase gene in *Lamprigera* sp. is restricted. The purpose of this study is to characterize the luciferasecDNA of *Lamprigera* sp. collected in Kayu Aro,Kerinci, Jambi.

This is a descriptive study. It was conducted since January to December 2019. We characterize the Lamprigera's luciferase cDNA by sequencing method and aligned it to published sequences.

Amplification of Lamprigera's luciferase cDNA using LF and LR primers produced 367 bp fragments. The similarity levels of Lamprigera's luciferase cDNA sequences with published *Lamprigerayunnana* is 83%. This indicates that luciferse cDNA of *Lamprigera* sp. is different from the published *Lamprigerayunnana*. However, phylogenetic tree construction shows that *Lamprigera* sp. have a close kinship with *Lamprigerayunnana*.

Keywords : firefly, luciferase, *Lamprigera* sp.

CHITOSAN-ZINC OXIDE NANOPARTICLE BASED HIGHLY SENSITIVE ELECTROCHEMICAL SENSOR FOR FORMALDEHYDE DETECTION

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Corresponding author: jasminee24@yahoo.com

ABSTRACT

Chitosan has been widely used as a sensor manufacturing material, but until now the development of sensors based onchitosan/zinc oxide nanoparticles (ZnO-NPs) has not been carried out. The aim of this study wasto prepare several working electrodes based on chitosan/ZnO-NPs which was coated on copper screen-printed electrode substrate (Cu-SPE) as thin-film sensor (CS-ZnO) for formaldehyde detection. The sensitivity, selectivity, and responsiveness of each prepared working electrode were measured using cyclic voltammetry (CV) method. The best result for making working electrode (WE) of CS were obtained at 1.5% w/v concentration and the best CS-ZnO mixture at 0.2% ZnO w/v addition. The CS-ZnO based sensor provided satisfying results. This can be evidenced by the ability of sensors are able to detect analytes at the lowest concentration, including LoD= 0.18 nM/L, LoQ= 0.59 nM/L, sensitivity $1.54x10^{-5}$ µA/µM, and linear range $1\text{-}100x10^{-5}$ µM/L with the correlation coefficient at r= 0.96 for n= 5. Due to the obtained result of Chi-ZnO based sensor, this material can be categorized as a sensitive electrochemical sensor for formaldehyde detection purpose, and this sensor material has some advantages for further development.

Keywords : -

ACTIVE EFFECTS SELECTION WHICH CONSIDERS HEREDITY PRINCIPLE IN MULTI-FACTOR EXPERIMENT DATA ANALYSIS

Bagus Sartono[1,], Achmad Syaiful[2], Dian Ayuningtyas[3], Farit M. Afendi[1], Rahma Anisa[1], Agus Salim[4]*

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[2]Salim Group Enterprise Digital Technology Services, Indonesia
[3]PT Tokopedia, Indonesia
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ABSTRACT

The sparsity principle suggests that the number of effects that contribute significantly to the response variable of an experiment is small. It means that the researchers need an efficient selection procedure to identify those active effects. Most common procedures can be found in literature work by considering an effect as an individual entity so that selection process works on individual effect. Another principle we should consider in experimental data analysis is the heredity principle. This principle allows an interaction effect is included in the model only if the correspondence main effects are there in. This paper addresses the selection problem that takes into account the heredity principle as Yuan and Lin (2007) did using least angle regression (LARS). Instead of selecting the effects individually, the proposed approach performs the selection process in groups. The advantage our proposed approach, using genetic algorithm, is on the opportunity to determine the number of desired effect, which the LARS approach cannot.

Keywords : *-*

THE CHARACTERISTIC FUNCTION PROPERTY OF INFINITELY DIVISIBLE DISTRIBUTION

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ABSTRACT

The characteristic function is defined as Fourier-Stieltjes transform for a random variable X to be $\phi(t) = E(\exp(itX)$ for real t, $\exp(itX) = \text{Cos } tX + i \text{ Sin } tX$ and i as imaginary unit. The characteristic function derived from the random variable X with distribution function F is infinitely divisible if there exists a characteristic function $\phi_n(t)$ corresponding to a random variable X_n with distribution function F_n such that $\phi(t)=(\phi_n(t))^n$. The definition of infinitely divisible distribution by using the term of characteristic function has led to the canonical representation of a characteristic function as a complex-valued function contained Levy measure. The refinement of the canonical representation of an infinitely divisible characteristic function is the uniqueness of the Levy measure. The property of Levy measure has introduced for establishing of some classes on infinitely divisible distribution. The first class is identified as the measurable and completely monotone function for the Thorin class, Goldie-Steutel-Bondesson class, type G class, and $M(R^d)$ class. The second class belongs to the class of measurable but non increasing function for the Jurek class. The third class is measurable and non-increasing function as the self decomposable class. The last finding of the class of infinitely divisible distribution has introduced by using the Levy measure properties of mixture distribution and the class of infinitely divisible distribution governed by special distribution such as exponential distribution, gamma distribution, geometric distribution, negative binomial distribution, and their variations.

Keywords : characteristic function, canonical representation, Levy measure, the class of infinitely divisible distribution.

PERFORMANCE EVALUATION OF HEURISTIC ALGORITHMS FOR VARIOUS OPTIMIZATION PROBLEMS

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INDIGENOUS YEAST FOR BIOETHANOL PRODUCTION

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ABSTRACT

The second generation of bioethanol made from lignocellulosic biomass which is considered a clean energy source and has high potential of alternative and renewable energy sources. Yeast play an essential role in bioethanol production as fermentation agent a wide range of sugars to ethanol. The great yeast biodiveristy isolated from plants, fruit, or its part could be an potential source of strain. Indigenous yeasts screened and isolated from tuak, an traditional beverages, durian fruit, coconut water fermented some monosacharides of lignocellulose. Yeast isolates migh have 'superior yeast' which has characteristics such as tolerant to high temperature, acids, inhibitors, high ethanol level. These isolates are important for the development of efficient ethanol production, therefore very attractive for the fuel elcohol industry.

Keywords : bioethanol, indegenous yeast, fermentation.

MIXTURE DISTRIBUTION MODELLING OF THE SPREAD OF THE CORONAVIRUS DISEASE 2019 (COVID-19) TAKING INTO ACCOUNT THE DETECTED INFECTIONS. THE CASE OF TURKEY

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ABSTRACT

Probabilistic models for the number of humans infected by coronavirus predictionsare important tools for understanding to know roughly the number of beds and ventilators for the hospital. Several types of mixed distribution (one mixture, two mixtures distribution and three mixtures distribution) are proposed and tested in order to determine the best model in describing the number of persons who infected by corona virus in Turkey for the time period of 59 days (12/3/2020 – 11/5/2020). The mixed distributions tested in this study were gamma distribution, weibull distribution and lognormal distribution. Parameter for each distribution are estimated by maximum likelihood techniques. For selecting the best fit model, graphical inspection (probability density function (pdf)) and numerical criteria (Akaike's information criterion (AIC)). In general, the mixed three gamma distribution has been selected as the best model.

Keywords : Corona virus, Lognormal distribution, Gamma distributions, Weibull distribution, Mixture of distribution.

FUNGAL CONTAMINANTS AND FOOD SAFETY

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PARALLEL SECTION

SESSION 1

Group: 01_BIOLOGY

ICO00143

Inventory of Macrozoobenthos Community in Mangrove Ecosystem, Labombo Beach, Palopo, South Sulawesi

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ABSTRACT

Mangrove ecosystem has ecological roles as habitats for many organism and also minimizing the effects of sea water abration in Labombo shoreline. However, marine tourism area in Labombo beach potentially change that ecological roles. So, it is important to monitore the ecosystem quality for maintaning sustainability of ecosyetem. This study aimed to determine the quality of ecosystems using macrozoobenthos community structure as a bioindicator. The sample was taken from three station using transect and cuadrant methods. The samples then stored in 70% alcohol bottle and indentified based on morphological characteristic in laboratory. 14 spesices of macrozoobenthos were identified in study area. The data showed that Shannon Wiener diversity index (H') was 2,44; Eveness index was 0,91; and Dominance index was 0,10. Based on Shannon Wiener cathegory, the macrozoobenthos diversity in study area was moderate and indicate that the ecosystem was stable.

Keywords: diversity index, mangrove, macrozoobenthos

ICO00306

Comparasion of Effectiveness of Red Beans (*Phaseolus vulgaris* L.) and Candlenut (*Aleurites moluccana* (L.) Willd) as A Replacement for Media *Sabouraud Dextrose Agar* for *Candida albicans* Growth

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ABSTRACT

Fungi require nutrients, a source of energy and environmental conditions for their growth. Sabouraud Dextrose Agar is a general medium frequently for fungal growth. The high cost and the difficulty of multiplying SDA media have encouraged researchers to find alternative media from red beans and candlenuts that contain carbohydrates and protein which are as a source of nutrition for the growth of *Candida albicans*. The research aimed determine the growth of *Candida albicans* on red beans (*Phaseolus vulgaris* L.) and candlenuts (*Aleurites moluccana*(L.) Willd) media and to determine the effectiveness of both media. The method of the research is experiment (completely randomized design) with 3 treatments and 9 repetitions. The average of colonies on red beans media of 181.7 CFU / ml, and candlenuts media of 113.8 CFU / ml with an average colony diameter red beans media of 1.19 mm and 1.12 mm candlenut media.Observations processed statistically using One Way Annova. The result showed a significant difference between the count and diameter of *Candida albicans* growth colonies on red beans (*Phaseolus vulgaris* L.) and candlenut (*Aleurites moluccana*(L.) Willd)media, followed by the Tukey test with the best media results being red beans (*Phaseolus vulgaris* L.) media.

Keywords:Effektiviness, *Phaseolus vulgaris* L., *Aleurites moluccana* L. Willd, *sabouraud dextrose agar, Candida albicans*

ICO00104

EFFECT OF PASTEURIZATION STAGE ON THE PRODUCTION OF STRAW MUSHROOM (*Volvariella volvacea*, Bull. Ex. Fr. / Sing.)

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ABSTRACT

Indonesian was created by God with a tropical climate so that it is appropriate to support business development in horticulture, especially is the cultivation of straw mushroom (*Volvariella volvaceae*). One of the successive stages of straw mushroom cultivation is the pasteurization. The aims of this study were to know the effect of pasteurization stages, the accuracy of pasteurization temperatures, and the factors that influence the growth of straw mushrooms. In this experiment, two types of manure were used namely goat and rabbit with varying levels of storage racks. The planting media that use goat fertilizer are labeled IB1-IC3 while the growing medium that uses rabbit fertilizer is labeled IIB1-IIC3. The applicable provisions are that each rack level consists of 3 repetitions. Of this study, the pasteurization stage is very influential in the growing media of straw mushrooms. Inaccuracy in the pasteurization results in the large number of weeds that thrive so that it inhibits the growth of straw mushrooms. The optimal temperature at the pasteurization stage is 60^{o}-90^{o}C. Factors that influence the growth of mushrooms, namely the selection of feces as fertilizer for mushroom cultivation, temperature, humidity, pasteurization process, the amount of water given to the mushroom growing medium, weeding, and time to work on mushroom research.

***Keywords*:** cultivation, manure, pasteurization, straw mushroom, temperature

ICO00254

QUALITY IMPROVEMENT OF SUGARCANE TOP BY *Phanerochaete chrysosporium* FUNGI AS ANIMAL FEED

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ABSTRACT

The aims of this experimentwere to improve the quality of sugarcane top by fermentation process using *Phanerochaete chrysosporium* fungi. This study used a randomized block design (RBD) with 4 treatments and 5 rumen fluid groups of taking. The treatments consist of: A = sugarcane top (without fermentation), B = sugarcane top fermented with 5% *Phanerochaete chrysosporium*, C = sugarcane top fermented with 10% *Phanerochaete chrysosporium*,and D = sugarcane top fermented with 15% *Phanerochaete chrysosporium.* The time of fermentationwas 21 days. The parameter measures were *In-vitro* digestibility of Neutral Detergen Fiber (IVD-NDF), *In-vitro* digestibility of Acid Detergen Fiber (IVD-ADF), *In-vitro* digestibility of Sellulose (IVD-S), and *In-vitro* digestibility of Hemisellulose (IVD-HS). The results of the research showed that dose of 10% *Phanerochete chrysosporium* with a fermentation time of 21 days gavethe best result for *In-vitro*digestibility offiber fractions of sugarcane top, as shown at IVD-NDF (54.21%), IVD-ADF (53.06%), IVD-S (49.10%), and IVD-HS (57.73%).

***Keywords**: Sugarcane top, Phanerochaete chrysosporium, In-vitro,digestibility and IVD-NDF*

ICO00088

The activity of ruku ruku leaves (*Ocimum sanctum*, L) to microbia food born disease (*Bacillus cereus, Staphylococcus aureus and Escherichia coli)*

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ABSTRACT

Ruku-ruku leave (*Ocimum sanctum* L.) is part of the plant that has a distinctive aroma with a slight sensation of spicy taste when chewed. Ruku-ruku leaves contain essential oils, tannins, flavonoids, steroids and triterpenoids, some of these chemicals can inhibit bacterial growth (bacteriostatic) or kill bacteria (bacteriocidal). This research conduct a test of antibacterial activity on ethyl acetate extract of ruku-ruku leave to mikroba food-borne disease of *Bacillus cereus*, *Staphilococcus aureus* and *Escherichia coli.* The results showed that yield of ethyl acetate extract 8.56 ± 0.87%, with a dark green color with shrinkage drying 22.44 ± 0.0305%, ash content 0.16 ± 0.0156%, The ethyl acetate extract of ruku ruku leave has an effective blocked to the concentration of 85 mg/ml to the bacteria *Bacillus cereus* in 15 mm, on concentration 80 mg/ml to the bacteria *Streptococcus aureus* on 21 mm, in diameter on concentration 75 mg/ml to the bacteria *Escherichia coli* on 17 mm. The inhibition of relative extract as an antibacterial compared with 1000 ppm 60.00% sodium benzoate to *B. cereus*, 88.24%, *S. aureus*, and 78.57% *E.coli.*

Keywords:ruku –ruku leave, food borne disease, antiamicrobial

Group: 02_CHEMISTRY

ICO00019

Synthesis of activated carbon derived from cassava petiole for high capacitive supercapacitor electrodes energy storage

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ABSTRACT

In this work, activated carbon (AC) based on cassava petiole had been successfully performed using three different activator agent concentrations for supercapacitor electrode as energy storage. The $ZnCl_2$ is selected as an activator agent with different concentrations of 0.5 M, 0.7 M and 0.9 M. The carbonization and physical activation are conducted by a single-step pyrolysis process. Microstructure, surface morphology, chemical content, surface area, and porous size were carried out to evaluate the physical properties of activated carbon. The electrochemical properties such as specific capacitance were performed by using cyclic voltammetry method in 1 M H_2SO_4 as the electrolyte. The highest material content in the ACE was carbon at 87.85%. The maximum surface area was obtained at 0.7 M concentration as high as 632 $m^2\ g^{-1}$. The highest specific capacitance reached was 193 F g^{-1} at 0.7 M concentration with maximum energy density and power density were found at 26.90 Wh kg^{-1} and 96.94 W kg^{-1}, respectively.

Keywords:Carbon Electrode, Activated Carbon, Cassava Petiole, Supercapacitor.

ICO00020

Study of the influence of different activator agents on the dimensions, mass, volume, and density of activated carbon monoliths

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ABSTRACT

Activated carbon based on jengkol shell waste is obtained by using single-step pyrolysis and different chemical activation (KOH and $ZnCl_2$) with different concentrations of 0, 0.3 M, 0.5 M, 0.7 M, and 0.9 M. The Samples are prepared in monolith form. The pyrolysis process begins with carbonization at room temperature to 600 °C in the N_2 gas environment and followed by physical activation in the CO_2 gas atmosphere at a high temperature of 850 °C for 2.5 hours. Monolith carbon is observed in the change of dimensions, mass, thickness, volume, and density. It was observed that the pyrolysis process which includes carbonization and activation effectively reduces all the dimensions, mass and density parameters of carbon monoliths. Increasing in the chemical activation concentration significantly decreases the mass, volume, and density parabolically. Furthermore, the concentration of chemical activators dramatically exhibits excellent effects with increasing concentrations of activator agents, indicating that the porosity and high surface area of activated carbon monoliths. This study is a model and reference for producing high-porous activated carbon from biomass waste for different practical applications.

Keywords: Jengkol shell, activated carbon, chemical activation, carbon monolith

ICO00294

Modified natural silica dimethylamine for optimization of Sulfate Ion Absorption using the Batch Method

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ABSTRACT

Sulfuric acid or other sulfuric compounds are often used in industrial activities so that the resulting liquid waste will contain sulfates such as combustion. Mining, paper, fossils and textiles. Sulfuric acid is used as a regulator of pH during the production process, therefore sulfate is usually found in liquid waste. pH in water can be reduced by using sulfuric acid and can increase the solubility of heavy metals. Low water pH affects fish populations and other aquatic organisms because if the water pH is low it can kill fish and other aquatic organisms. In addition, plant growth will be hampered if the pH of the soil is low which can be caused by the presence of sulfate contained in the soil and therefore it need proper countermeasures for this sulphate, one of the ways is absorption by using an adsorbent modified. natural silica dimethylamine is used to absorb sulfate anions.Sulfat solution were tested on basis of pH, constant time dan concentration.

***Keyword*:**Adsorption**,** Sulfet, silica, batch method

ICO00022

Three-Dimensional Pore Structure of Activated Carbon Electrode derived from Bamboo Stem Waste for Supercapacitor Application

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ABSTRACT

Carbon electrodes from green bamboo biomass material with a three-dimensional pore structure have been successfully performed and characterized. The objective of the study was to determine the optimum activator concentration and thickness of carbon monolith. Preparation of carbon electrodes starts with cutting bamboo crosswise and followed by carbonization process with a temperature of 600 °C by using N_2 gas. Carbonized samples are pholised to a thickness of 0,80mm and then chemically activated using 1 M and 3 M KOH activator. The activation samples are recarbonized at 700 °C using N_2 gas atmosphere and followed by polishing with different thickness of 0.20 mm and 0.30 mm. The carbon content increase with increasing of activator concentration, while the microcrystalline dimension decrease with increasing of activator concentration as well as decreasing density. The highest specific surface area is found in 3 M KOH concentrations as high as 157.449 $m^2\ g^{-1}$. The electrochemical properties were analyzed using the cyclic voltammetry (CV) method and obtained the highest specific capacitance in a concentration of 3 M at a thickness of 0,20mm as high as 168.806 $F\ g^{-1}$.

Keywords: Bamboo stem, Activated Carbon, electrode material, Supercapacitor.

ICO00024

Green Stem of Cassava derived Mesoporous Activated Carbon Monolith for supercapacitor application

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ABSTRACT

An economic and efficient approach for producing mesoporous carbon monolith derived green stem of cassava has been prepared via carbonization and activation. The chemical activator agent of $ZnCl_2$ at various concentrations is a key factor to produce mesoporous carbon monolith. The carbonization process was conducted at temperatures of 600 °C in the N_2 gas atmosphere, followed by physical activation at a temperature of 900 °C in the CO_2 gas environment. The synthesized mesoporous carbon monolith exhibits the highest specific surface area of 329 $m^2\ g^{-1}$ with a pore volume of 0.21 $cm^3\ g^{-1}$ was found at a 0.3 M $ZnCl_2$ concentrations. Furthermore, the electrode of mesopores carbon monolith performed high electrochemical behavior in 1 M H_2SO_4 electrolytes, with the specific capacitance, energy density and power densities of 164.58 F g^{-1}, 22.86 Wh kg^{-1} and of 82.38 W kg^{-1}, respectively. This route showed the utilization of the novel green stem of cassava and its opportunity to produce mesoporous carbon monolith for supercapacitor applications.

Keywords:Activated carbon, carbon mesoporous, monolith, green stem of cassava, supercapacitor.

Group: 03_MATHEMATICS – STATISTICS

ICO00196

Control design for tracking problem of the bilinear control system using observation matrix and pole placement

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ABSTRACT

Bilinear control system is widely used, especially in the chemistry to describe chemical reactions. Many of them are discussing about how to stabilize the system. In this paper, control design for tracking problem of the bilinear control system is presented. It is assumed that bilinear control system has full relative degree and the system is observable. Control design is divided into two stages. First, using observation matrix, tracking problem of bilinear control system transformed into stabilization problem of linear control system. Then, the linear control system is stabilized using static feedback control with pole placement. Examples are given to show controller performance.

Keywords: Tracking problems, bilinear systems, pole placement, observation matrix, relative degree.

ICO00052

THE RECIPROCAL SUMS OF THE GENERALIZED FIBONACCI-LUCAS NUMBERS

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ABSTRACT

The Fibonacci and Lucas sequences have been generalized in many ways, some by preserving the initial conditions, and others by preserving the recurrence relation. In this paper, we discuss the reciprocal sums of the generalized Fibonacci-Lucas numbers where the numbers are obtained by preserving the recurrence relation and changing the initial condition. This is done by doing summation of Fibonacci numbers with multiplicity of Lucas numbers. To discuss the reciprocal sums of generalized Fibonacci-Lucas numbers we use some identities of the generalized Fibonacci-Lucas numbers and floor function. In addition, we also discuss the reciprocal sums of products of the generalized Fibonacci-Lucas numbers using multiplication identities of generalized Fibonacci-Lucas numbers and some algebra calculations.

Keywords: Floor function, Generalized Fibonacci-Lucas numbers, Reciprocal sums.

ICO00148

Optimizing Tourism Destination in Batu City during Post-Pandemic

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ABSTRACT

Batu City is known as one of the tourist cities in Indonesia because of the natural beauty. However, Batu's tourism industry has been hard hit by coronavirus lockdown from early March until mid-June 2020. Nowadays, Batu City looking forward to develop new tourism in post-pandemic. This study aimed to create travel package in Batu City which implemented cost and time optimization. The data in this study was collected before COVID 19 outbreak between August 2019 and February 2020. The selected location was tourism place at Batu City, which one of tourism city and was announced as the red zone for COVID 19 spread. The total tourism place were 10 destinations at Jawa Timur Park Group and food packages from HC Putra Restaurant at Batu Rest Area. The data collection contained distance each tourism place, ticket price of each place, and food cost. The time and cost optimization were analyzed using Hungarian Method. As a result, there were four travel packages with order of different places to visit. Included in the package were all tourism place from Jatim Park Group. Visiting Batu City can be time consuming, but when choosing the right package, tourist will be able to travel more efficiently.

Keywords: Optimization, COVID 19, Tourism, Hungarian Method.

ICO00187

The Effect of Health Belief Factors to Health Behavior During the COVID-19 in West Sumatera Based On Structural Equation Approach

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ABSTRACT

COVID-19 pandemic has affected over 125 countries in the world. People's health belief toward health behavior in the emerging pandemic is diverse. This study aims to model the influence of health belief factors such as psychological condition and health perceived susceptibility and health perceived severity on the health behavior of individuals who are living in West Sumatera during the COVID-19 pandemic. Since all factors are latent, which can not be estimated directly by the object but measured by other indicators, thus the estimator method used here is a structural equation model approach. This study results that health behavior effect directly by health perceived susceptibility and health perceived severity; meanwhile psychological condition influences health behavior indirectly with health perceived severity as mediator.

Keywords: COVID-19 pandemic, health behavior, psychological condition, health perceived susceptibility, health perceived severity, structural equation modeling.

ICO00071

Spectral Analysis and SARIMA Model for Forecasting Indian Ocean Dipole (IOD) and Rainfall in West Aceh Regency

(**Research Subtitle**; Statistics)

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ABSTRACT

Indian Ocean Dipole (IOD) in the Indian Ocean is one of the climatic phenomena that affects climate conditions in western Indonesia. West of Aceh Regency is one of the districts in Aceh Province which borders and faces the Indian Ocean directly, so it has a significant impact due to climate events caused by the IOD phenomenon. Analysis for examines the occurrence of climate phenomena is needed to minimize the adverse effects due to the IOD phenomenon. One of analysis that can be use spectral analysis by calculating the periodogram and the SARIMA model for forecasting historical data. The data used are monthly data on the Indian Ocean IOD index and rainfall in West of Aceh in the period January 2010 to December 2019. The purpose of this study was to determine the periodicity of the IOD index data and rainfall, get a model and obtain the results of forecasting the IOD index and rainfall, and see the relationship of IOD to rainfall in West of Aceh. The results obtained in the spectral analysis are the characteristics of changes in the IOD index tend to increase or decrease in the IOD index every 17 months and the characteristics of changes in rainfall in West of Aceh tend to increase or decrease in rainfall every 6 months. The best model for predicting IOD index data is the SARIMA model $(2,1,3)(0,1,1)^{17}$. Forecasting for 2020 and 2021 tend to show a downward trend in 2020 and an upward trend in 2021. While the best model for predicting West of Aceh rainfall data is the SARIMA model $(2,0.2)(0,1,1)^{6}$. Forecasting for 2020 and 2021 tend to experience high rainfall in April and October for each year. The relationship obtained by the IOD index to rainfall in West of Aceh is when the IOD index is in a positive phase, rainfall in the West of Aceh region tends to decrease. Conversely, when the IOD index is in the negative phase, rainfall in the West of Aceh region tends to increase.

Keywords:Time Series Analysis, Spectral Analysis, SARIMA, Indian Ocean Dipole, Rainfall.

Group: 04_EDUCATION 1

ICO00301

THE EFFECT OF PROJECT BASED LEARNING MODEL TOWARD STUDENT'S ACHIEVEMENT

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ABSTRACT

This research has the purpose to know the student's achievement in Acid-Base topic by implementing Project Based Learning model integrated with Lesson Study , to know the student's cognitive aspect improvement in learning Acid-Base Topic with Project Based Learning model with Lesson Study compared with conventional model and to know the student's perception that will be taught by project based learning model based on lesson study. The population of this research are all Senior High School students grade XI in Berastagi , which the samples are 2 classes Xith grade chosen by purposive sampling. 1st as experiment class was taught by Project Based Learning Model based on Lesson Study while 2nd class as control class was taught by Conventional model. The instrument test had been standardized by expert validator and empiric validity process. The result of test standardization is 20 multiple choice questions with reliability 0.865 . The research resulted that the data is normal distributed and samples are homogenous. The result data showed that student's achievement taught by Project based learning with lesson study gave higher significance different compared with student's achievement taught by conventional model. The statement supported by the result of hypothesis testing is t_{count} (5.78) > t_{table} (1.67).

Keywords :*Acid-Base, Lesson Study, Project Based Learning, Student's Achievement*

ICO00340

Literature Study: Utilization Of Android-Based Learning Media Using Adobe Flash Cs 6

(As An Educational Solution In The Pandemic Time Covid-19)

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ABSTRACT

The research is a literature study that aims to determine the use of Android-based Learning Media as a solution during the Covid-19 pandemic in Indonesia. The data used is secondary data using the library method. The research results may reveal that the number of android users in Indonesia is very large and is increasing every year. So that Android is very effective when used as a learning medium. In addition, Covid-19 resulted in the significant use of Android-based Learning Media. However, the ability of educators is still lacking in mastery of technology. So that the use of Android-Based Learning Media is very less, especially those using Android applications based on Adobe Flash CS6. There needs to be regular training so that the competence of educators is in accordance with the demands and conditions of the times. Especially with the current condition of the Covid Pandemic, the ability of teachers in technology is needed to support the learning process.

Keywords: *Literature Study, Android-Based Learning Media, COVID-19*

ICO00204

Science Experiments Program Based on Multisensory Ecology for Early Childhood at Home

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ABSTRACT

During this Covid-19 pandemic early childhood learning from home. The online learning, both interactively and non-interactively needs to be done even though not all children can do that because of infrastructure. The Learning must occur even at home, therefore we need a program that supports children learning from home and reduce dependence on online learning. This article aims to have founded of concepts and theoretical foundations that support the development of cognitive and social emotional of early childhood through science experiments based on multisensory ecology at home. This article is the result of research with a qualitative approach using the literature study method, which was conducted in 2020, which is a preliminary study of a series of studies on the development of science learning program based on multisensory ecology for Early Childhood with family. The results found that the Science Experiment Program based on multisensory ecology with Families as one of the quality ways of caring for children to instill cognitive and social emotional of children during the Covid-19 pandemic. Through science experiments, children will be able to develop an honest, responsible, conscientious, positive attitude towards change / failure, curiosity and humility. Science experiments will also for systematic thinking and other life skills. Science experiments can be done at home by involving all family members so that there will be a pleasant and intimate atmosphere in the family. Parents must collaborate with the teacher about experiments that children can do at home with the family.

Keywords:science experiments, multisensory ecology, education in the covid-19 pandemic Written in English..

ICO00226

Developing User-friendly E-moduleHyper-content on Atomic Structure and Periodical Properties of Elements

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ABSTRACT

Connecting understanding on atomic structure to explain the periodical properties of elements has always been a challenge over the years. One of the factors behind this is the lack of availability of syllabus-relevant, user-friendly, practical and accessiblelearning resources on the topics. Therefore, this research and development study aims to produce a valid and practical e-module hyper-content to support the learning process of structure atom and periodical properties of element by preservice science teachers. The e-module was developed through ADDIE model which consists of five stages namely Analysis, Design, Develop, Implementation, and Evaluation. The validity test of the product was conducted through expert judgements and the practicality test was conducted involving 110 third semester students of Science Education Department of UniversitasNegeri Padang. Result of the validity and practicality test indicated that the e-module with hyper-content on structure atom and periodical properties of elements belongs to very high category for both validity and practicality. Analysis of students' responses on open-ended questionnaires revealed that this e-module is beneficial for better learning on the topic due to the ease of use and integrative way of presenting information on relevant topics.

Keywords:e-module development, atomic structure, periodical properties of elements, ADDIE model.

ICO00261

Pre-service science teachers' perception of their ability to teach online

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ABSTRACT

With the increase in the need of online learning, it is important for pre-service science teacher to be prepared to teach online. This study examined 57 pre-service science teachers' perception of their ability to teach online after they finished online microteaching course. Survey-based research used and resulted descriptive statistics of four online teaching competencies. Course design was rated the highest (Mean=3.96), followed by course commmunication (Mean=3.83), technical competence (Mean=3.74), and the last was time management (Mean=3.71).In course design, create online assignment was rated the highest, while create instructional videos was the lowest. In course communication, use synchronous web-conferencing tools was rated the highest, while apply accessibility policies to accommodate student needs was the lowest. In technical competence, complete basic computer operations was the highest, while create and edit videos was the lowest. In time management, schedule time to design the course prior to delivery is the highest, while use facilitation strategies to manage time spent on course is the lowest. From this result, improvement of pre-service science teachers' competencies in online teaching was discussed.

Keywords*:* online teaching, ability, perception, science teacher, preservice teacher

Group: 05_EDUCATION 2

ICO00195

MATHEMATICS TEACHING INNOVATION AND ITS EVALUATION DURING THE PANDEMIC: WHAT MORE CAN WE DO TO HELP OUR STUDENTS LEARNING?

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ABSTRACT

This paper describes the innovation in mathematics teaching for the D3 Electronic Engineering Study Program, the State Polytechnic of Semarang (Polines), Indonesia during the corona pandemic and its evaluation. The case study method was chosen to observe and obtain more detailed data from four parallel classes with a total of one hundred students (65 male and 35 female). The results showed that the implementation of blended learning with various technologies was carried out to ensure that mathematics learning must continue. Two learning management systems (LMS) are used namely Elnino (Moodle based) and Google Classroom (Google based) as a medium to record the attendance, deliver teaching materials, gather individual assignments and assessments. The discussion for strengthening the material is done synchronously using Elnino's discussion forum and chat on Whatsapp group of each class. Video tutorials either from lecturers or student group assignments are uploaded on Youtube. Because of the pandemic period, the curriculum was then also simplified by maximizing learning outcomes in only two things namely the use of Fourier Series and Laplace Transformation to solve electrical circuit problems. In addition, individual tasks must be minimized and more on maximizing group work, to create video tutorials on problem solving using both concepts. Assessments include individual assignments (midtest and endtest), video-based group projects and peer assessments. The evaluation at the end of the lesson shows that recommendations for teaching innovations must continue, given that the next semester of learning is carried out entirely online since the first meeting. For instance, teacher could conduct online meeting using zoom and/or Google Meet, design greeting and apperception video at the beginning of the lecture and product more video tutorials related to the topics. In addition, surprisingly, it was found that during the pandemic period female students were seen to be more active in giving participations and contributions, both in discussions and assignments. Their results were also significantly better than male students.

Keywords: pandemic, blended learning, LMS, innovation in teaching, evaluation

ICO00049

IMPLEMENTATION OF REAL ANALYSISWITH PQ4R STRATEGYIN FACILITATING SELF REGULATED LEARNING

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ABSTRACT

Previous research has produced a product in the form of real analysis teaching materials to facilitate students' *self-regulated learning* by using the PQ4R strategy (*Preview, Question, Read, Reflect, Recite, Review*), the steps in the PQ4R strategy can help students in organizing texts, and organize itself to obtain more in-depth information by means of broader elaboration. So students will be more independent in learning. Independence in learning is termed *self-regulated learning.*The purpose of this study is to describe the implementation of real analysis learning with the PQ4R strategy and produce a product in the form of "real analysis teaching material to facilitate effective *self-regulated learning*" of students. This research is a follow-up research of development research with the development model used is the ADDIE development model. The analysis phase, design phase, and development phase have been completed in previous research. In this study continued with the Implementation phase. The results showed that the implementation of real analysis teaching materials with the PQ4R strategy in facilitating student *self-regulated learning* went well, which is in the category of very good and good.Real analysis learning with the PQ4R strategy, which through *preview* and *question* activities allows students to have self-planning, and through *read* and *reflect* activities allows students to monitor themselves, as well as through *recite* and *review* activities, students conduct self-evaluation. Self-regulated learning students are in the excellent category.Real analysis teaching materials to facilitate quality *self regulated learning* are effective with an N-Gain value of 0.75

***Keywords*:**Real Analysis, Self Regulated Learning, PQ4R

ICO00116

Development of SPSS Assisted Research Based Instruction Instrument To Increase Students' Mathematical Literation And Computational Thinking Skill

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ABSTRACT

The research based instruction for linking teaching and research, where the lecturer enhance the course with many current research. To successful implementation of research based learning, lecturer should have an integrated instrument. The aim of this research is to develop SPSS Assisted Research Based Instruction Instrument to Increase Students' Mathematics Literation and Computational Thinking Skill. Development of the instrument used ADDIE Model (Analyze, Design, Develop, Implementation and Evaluation). Analysis phase, clarified the instructional problems, goals, and students need in Statistic Course. Design phase, designed and made the instrument, that is lesson plan, worksheet and SPSS manual. Development phase, completed the instrument in the analysis phase and validated it to the expert. Then revised the instrument based on expert suggestion. Implementation phase, implemented the instrument to the students in Inference Statistic Course. Evaluation phase, collected the students' feedbacks and tested students mathematical literation and computational thinking skill. Result of validation show that the instrument was valid and effective to increase students mathematical literation and computational thinking skill. It supported by student's feedback and test of students mathematical literation and computational thinking skill.

Keywords:SPSS, Research Based Instruction, Learning Instrument, Mathematical Literation And Computational Thinking

ICO00317

COGNITIVE MAPS: STRATEGIES FOR TRACKING ERROR PATTERNS IN MATHEMATICS PROOF

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ABSTRACT

The difficulty of students in constructing mathematical proof is often seen in the form of solving errors they make. In this case, students' mistakes in mathematical proof are a reflection of their way of thinking. If these errors are not resolved, it will have an impact on students' thinking when working on further mathematical proofs. The patterns of student error in constructing mathematical evidence can be identified, namely: 1) proving statements by providing numbers or examples, 2) manipulating incorrect algebra, 3) verifying numerical proof after formal proof, and 4) inability to understand the definition of the statement. Of course, this error pattern needs to be traced more deeply using cognitive maps. Cognitive maps are techniques for representing how subjects think about a particular problem or situation so that researchers can act for the next step. This is, of course, a cognitive map is a person's perspective on the subject, which is described qualitatively by connecting concepts to be able to predict causal behaviour. Therefore, students' thought processes of constructing mathematical evidence can be traced using cognitive maps.

Keywords **: -**

ICO00311

IMPROVING THE ABILITY OF CREATIVE THINKING OF STUDENTS OF PHYSICS EDUCATION THROUGH SCIENTIFIC APPROACHES

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ABSTRACT

This study aims to improve students' creative thinking skills in the Odd Semester of the 2019/2020 Academic Year of the Undergraduate Physics Education Study Program, Faculty of Teacher Training and Education, University of Bengkulu through a scientific learning approach. This research is a classroom action research with four stages, namely planning, implementing, observing and reflecting. The research subjects were students of the Undergraduate Physics Education Study Program, Faculty of Teacher Training and Education, Bengkulu University for the 2019/2020 Academic Year with a total of 25 people. Data were collected by means of observation, field notes, documentation and tests. The results showed that the scientific learning approach could improve students' creative thinking skills. The increase in creative thinking in the cycle, the average score of students' mathematics tests was 57, with a classical passing of 36%. In the first cycle, the average score increased to 67.4 with classical graduation of 56%. Increased again in cycle II, namely the average value to 78.6 with classical passing of 92%.

Keywords : -

Group: 06_PHYSICS – AST

ICO00237

Design of Ionospheric Sensor for Total Electron Content Measurement

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ABSTRACT

National Institute of Aeronautics Space (LAPAN) develops satellites for many applications, such as for remote sensing, with camera and sensors for atmospheric parameter measurement. Distribution of electron density in altitude 60 to 1000 km, is very important for many applications, such as for radio communication and as early warning indicator. Many papers indicate the correlation of electron density variation to earthquake event and also mountain eruption. For covering wider area on ionosphere region of earth are needed a sensor based on satellite to collect the ionospheric data. Nano satellite in constellation give more data in space and time. Although nano satellite limited in of size and power, some nano satellites already implemented and launched for scientific mission. This paper discusses the design of ionospheric sensor that is proposed for ionospheric TEC measurement.

Keywords : -

ICO00345

STUDY OF NEUTRONIC ANALYSIS OF SODIUM-COOLED FAST REACTOR (SFR) DESIGN FOR VARIOUS OUTPUT POWER USING RADIAL FUEL SHUFFLING STRATEGY

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ABSTRACT

Study of neutronic analysis of Sodium-Cooled Fast Reactor (SFR) design based on the variations of output power using radial fuel suffling strategy has been done. SFR is one of the generation IV reactors type that currently being researched for commercial applications. The reactor design uses natural uranium as a fuel and Sodium as a coolant. The research has been carried out by using the SRAC code and JENDL-3.2 as a library with two dimensional *R- Z* suffling strategy of cylinder core for variations of 300, 350, 400, 450 dan 500 MWt power output. The neutronic parameters such as multiplication factor (k_{eff} and k_{inf}) and burn-up analysis are observed. The reactor core is divided into 10 regions that have the same volume radially. At beginning, the reactor was fully filled with natural uranium fuel called fresh fuel and was prepared for the first core cycle. The burn-up result in the first region is shuffling into the second region, the burn-up result in the second region is shuffling to third region, and so on until the burn-up result in the tenth region. The burn-up result in the tenth region is removed from the reactor core, then the first region can be filled with fresh fuel and so on up to 100 years of reactor operation. The neutron calculation results indicate that the multiplication factors (k_{eff} and k_{inf}) are in a critical condition occurring for 300 MWt of output power. The density of U-235 nuclides at 300 MWt has a greater value from the beginning to the end of the burn up period. Overall, the output power of 300 MWt has requirements and a greater chance of being operated for SFR reactors as designed in this study.

Keywords: SFR, multiplication factor, burn-up, shuffling strategy.

ICO00105

Geoelectric Sounding for Identification of Aquifer Layer in East Turatea Village South Sulawesi Province

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ABSTRACT

East Turatea Village farmers still depend on rainwater for irrigating their rice fields. This study aims to identify groundwater aquifers in the village of East Turatea which can be used as water sources in irrigating rice fields. The method used is the correlation of well data and Vertical Electric Sounding (VES). The results of this study indicate that the East Turatea Village groundwater aquifer has a resistivity value of 0.84 - 5 Ohm.m which is interpreted as permeable layers such as sand. The shallow groundwater aquifer is at a depth of 6.04 - 31, 88 m, while the deep groundwater aquifer layer is at a depth of> 53.8 m. Both of these layers are limited by impermeable layers which have resistivity values of 9.26 - 10.11 Ohm.m which are interpreted as clays with a thickness of 37-56 m.

***Keywords**:* geoelectric, aquifer, groundwater, resistivity

Group: 07_MATHEMATICS – STATISTICS

ICO00238

Twisted Toeplitz Algebras of Cyclically Ordered Groups

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ABSTRACT

We consider the group □ $\bigoplus_{LOG}$ □ as a linear ordered abelian group, and we induce a cyclic order so that the group is cyclically ordered, and denote it as □ $\bigoplus_{COG}$ □ . Suppose σ is a 2-cocycle on the group □ $\bigoplus_{COG}$ □. We construct an isometric representation of the semigroup (□ $\bigoplus_{COG}$ □) . This representation generates a canonical algebra which we call the twisted Toeplitz algebra of the cyclically ordered group □ $\bigoplus_{COG}$ □.

Keywords:Cocycle, twisted, Toeplitz algebra, cyclic order, isometric representation.

ICO00278

The Locating Chromatic Number of Disconnected Graph with Path and Double Stars Graph as Its Components

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ABSTRACT

Let $H(V,E)$ is a disconnected graph and c is a k-coloring of Hthen induced partition of $\prod = \{C_1, C_2, \dots, C_k\}$from $V(H)$, where C_i is the set of all vertices receiving color i. The color codes of a vertex$v \in V(H)$is the ordered k- tuple $(d(v,C_1), d(v,C_2), \dots, d(v,C_k))$where $d(v,C_i) = \min\{d(v,x|x \in C_i\}$and $d(v,C_i) < \infty$for $1 \leq i \leq k$. The coloring $c$is locating$k$-coloring of H if all vertices of H have distinct color codes. The locating-chromatic number of H, denoted by$\chi_L^{'}(H)$, is the smallest k such that H admits a locating-coloring with k colors. In this paper, we study the locating-chromatic number of disconnected graph with path and double stars graph as its components.

Keywords:locating-chromatic number, disconnected graph, path graph, double stars graph.

ICO00280

On Locating Chromatic Number Of Cubic With Tree Cycle

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ABSTRACT

Let $G = (V(G), E(G))$is a connected graph and c is coloring of graph G. Let $\prod = \{C_1, C_2, \dots, C_k\}$, where C_i is the partition of the vertex in Gwhich is colored $i$with $1 \leq i \leq k$. The representation v for $\prod$ is called the color code, denoted $C_\prod(v)$ is a ordered pair with k −element namely, $C_\prod(v) = (d(v, C_1), d(v, C_2), \dots, d(v, C_k))$, where $d(v, C_i) = min\{d(v, x) \mid x \epsilon C_i\}$ for $1 \leq i \leq k$. If every vertex in G have different color code, the c is locating coloring. The minimum number of colors used in G is called chromatic locating, notated by $\chi_L(G)$. In this paper, we wiil determine the locating coloring of graph cubic $C_{n,2n,n}$.

Keywords: *The Locating Chromatic Number, Cubic Graph, Cycle, Color Code.*

ICO00287

Logistic Regression Model for Entrepreneurial Capability Factors in Tourism Development of the Rural Areas with Bayesian Inference Approach

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ABSTRACT

The logistic regression model is performed to analyze the entrepreneurial capability factors in the rural area's tourism development with the Bayesian inference approach due to a small number of sample sizes. This study is conducted with sixty nascent entrepreneurs from the rural areas at Nagari Batang Barus of Solok regency in West Sumatra, Indonesia. Scaled categorical response variable indicated by insufficient, sufficient, and excellence as the response category are used to measure the entrepreneurial capability of the respondents. The predictor variables are demographic dimensions namely; gender, education level, and occupation. At the same time, the variables of entrepreneurial dimension are indicated by entrepreneurial motive, working motive, social motive, individual motive, and economic motive. The result shows that only the predictor variables of social motive and entrepreneurial motive affect significantly with a hit ratio of 76.67%. This model has a better fit by using Bayesian logistic regression with a small sample size. Social motive and entrepreneurial motive have the main rule in developing tourism business in the rural area based on the character of the local inhabitant and creative economy.

Keywords: Logistic regression, Bayesian inference, Entrepreneurial capability, Tourism, Rural area.

ICO00221

An inventory model for estimation of deterioration with time-dependent demand and storage cost

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ABSTRACT

An inventory consists of items that are stocked temporarily before they are used or sold at a later time. An inventory model is required to enable the retailer to determine the optimal order quantity. The main goal is to determine how many items should be ordered and when to order to minimize the total cost. If retailers order too much, the holding cost will increase because the items that have to be stored increase and the items will deteriorate. If they order too little, then shortages may occur because the inventory could not meet the demand. In this paper, a mathematical model for inventories with deterioration, time-dependent demand, and time-dependent storage cost will be developed. A sensitivity analysis has been performed to examine how the changes in the model parameters affect the optimal solution. It can be concluded that if the deterioration rate decreases and the demand rate increases, then the total cost will also decrease.

Keywords : -

Group: 08_BIOLOGY

ICO00224

Analysis of Biology Practical Worksheet in Protist for Senior High School based on Vee Diagram

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ABSTRACT

Practical activities will provide opportunities for students to see and prove the theory they are learning by direct observation, it is necessary to have good quality on students practicum worksheets in providing guidance. The research method used is descriptive qualitative method with a research sample of 4 student worksheets selected using purposive sampling technique with an instrument in the form of a vee diagram adapted from Novak & Gowin (1984). The results showed 37.5% of the emergence of concept / principle / theory components, this shows that there is still a lack of conceptual acquisition without any principles or theories. The focus question component is 41.67% of the findings indicate that the focus questions are less consistent. Thus, it can be concluded that it is necessary to improve each worksheet component in order to achieve a maximum score so that it helps students in practical activities.

Keywords: Practical, Vee Diagram, Protist, Worksheet

ICO00326

Development of Virtual Class Activity Comic Contained Syntax of Cooperative Models Type MURDER, NHT and TGT for Prospective Teacher in Universitas Negeri Padang

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ABSTRACT

Current advances in the world and educational technology have forced lecturers to improve their abilities in producing diverse and innovative learning media. At present, it is undeniable that students still have an interest in reading comics, including prospective teacher students at Padang State University. Provision of learning concepts that are in line with the interests of students reading comics is very reasonable. We developed a comic that contains how a teacher can carry out learning using the MURDER, NHT and TGT models. The purpose of this study is to produce comics that are in line with the quality standards of the Plomp development design. The results of this study in addition to a comic, also the quality value. Based on research and development that has been done, the comics that we have developed have met the quality standards of the Plomp development design.

Keywords: Virtual Class Activity, Comic, Development.

ICO00209

Effectiveness of Learning Models Based on Concepts and Drill Methods to Improve Ability of Student's Understanding Concepts and High Order Thinking Skill on Methodology of Biology Instructional Course in Biology Education 2018.A

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ABSTRACT

The process of developing this model in previous research has produced learning models that are tested to the level of validity and practicality for students on Methodology of Biology Instructional course. Next, the effectiveness phase must be carried out. The aim is to determine the level of effectiveness of the model. This stage is carried out in two different classes, class A and class B in biology education students enrolled from 2018. However, this article presents research data from class A only. The number of research samples are 39 people, who have been conducting lectures for 16 weeks. Based on data collection instruments, it is known that the average value of students is 64, with a qualitative value quite good. These results indicate that the model that has been developed is quite capable of increasing the ability of students to understand concepts and train students' ability to think at a high level.

Keywords: Learning Model, Concept, Drill Method.

ICO00017

How to Assess STEM Literacy? A literature review

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ABSTRACT

STEM literacy is the ability to identify and apply concepts and content from science,technology, engineering, and mathematics to understand and solve challenges or problems that cannot be resolved by any one disciplinary approach. The purpose of this study is to review kinds of STEM literacy assessment. Technique of collecting data was through literature study. The results of this study is the instrument for science and mathematics literacy questions from Program for International Student Assessment (PISA) and for technology and engineering literacy questions adapt from National Assessment Educational Progress (NAEP).

Keywords: Assessment, STEM Literacy

ICO00338

PATHOGENICITY OF ENTOMOPATOGENIC FUNGI ISOLATES FROM INFECTED PEST CROP AGAINST DRY WOOD TERMITES CRYPTOTERMES SP. (ISOPTERA: KALOTERMITIDAE)

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ABSTRACT

Through exploration at several farming regions in X Koto sub distric, Tanah Datar regency, West Sumatera province (Kandang Sampia, Kayu Tanduak, Panyalaian, Koto Baru), were found 38 fungi isolates. Some isolates (31.58%) pathogenic against drywood termites, Cryptotermes sp.. Most of those fungi belong to Ascomycota division (Aspergillus niger, Aspergillus sp. 1, Aspergillus sp. 2, Aspergillus sp. 3, Aspergillus sp. 4, Aspergillus sp. 5, Penicillium sp. 1, Penicillium sp. 2, Penicillium sp. 3, Penicillium sp. 4), while 2 fungi did not identified yet (Sp 1 and Sp 2). A. niger is the most effective fungi to control Cryptotermes sp., that indicated by its ability to kill termites (at 10^7 conidial/ml could kill 93.94% after 7 days infected, higher viability and spore formation), but not differed with Aspergilussp. 1 and Penicillium sp.2. The lowest ability showed by Sp. 1 fungi (at 10^7 conidial/ml only could kill 60.61% after 7 days infected).

***Key words**:* Exploration, pest crop, entomopathogenic fungi, pathogenicity, Cryptotermes sp.

Group: 09_CHEMISTRY – AST

ICO00241

Natural antioxidant of *Xanthosoma nigrum* Stellfeld

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ABSTRACT

The main use of antioxidants is breaking the reaction of free radicals in body so that it can save the body from damage due to free radicals. To achieve stability or molecular atoms, free radicals will react with molecules around them to obtain electron pairs. This reaction will continuously in the body, if not stopped will cause various diseases such as cancer, heart, cataracts, premature aging, and other degenerative diseases. The antioxidant of *Xanthosoma nigrum*Stellfeld activity was determined by oxidated linoleic acid substrate. The oxidation results in the form of malondialdehyde (MDA) would be reacted with thiobarbituric acid formed products in the form of a red complex (MDA-TBA) which absorption was measured by spectrophotometer at λ 532 nm. *Xanthosoma nigrum*Stellfeld extract with concentration of 100 ppm, 150 ppm, 200 ppm and 300 ppm respectively was had the inhibition of 19,32%, 21,85%, 29,47%, and 31,05%. The positive control was used α-tokoferol 200 ppm had the inhibition of 85,14%.

Keywords: Antioxidant, free radical, *xanthosoma nigrum* stellfeld.

ICO00233

The Effectiveness Test of Sunscreen Cream with Raw Material of Coconut Oil and Active Ingredients of Bay (*Eugenia polyantha* Wight) Leaf Ethanol Extract and TiO_2

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ABSTRACT

A research on the effectiveness test of sunscreen cream made of coconut oil and active ingredients of bay leaf ethanol extract (*Eugenia polyantha* Wight) and TiO_2 has been conducted. Sunscreen cream was made by the hot water phase (70^oC)(distilled water, glycerin and triethanolamine = TEA) was poured into the hot oil phase (70^oC)(lanoline, cetyl alcohol, stearic acid and coconut oil) which has been added TiO_2. The mixture was added the bay leaf ethanol extract and was stirred, until a homogeneous cream was formed. The resulting cream was determined its properties such as pH, viscosity, absorption of ultraviolet radiation (UV) and sun protection factor (SPF). From the SPF value calculated, then the effectiveness of sunscreen creams could be determined. The results showed that the resulting cream had a pH of 7.55-7.75, viscosity of 40-108 dPaS. If the cream containing 0.5% bay leaf ethanol extract was added with TiO_2, the SPF value of cream would increase. The higher the concentration of TiO_2 was added to the cream, the SPF of the resulting cream would also increase. Cream with 0.5% bay leaf ethanol extract and 6% TiO_2 had an SPF value of 3.10 and was included in the sunscreen with a low protection category.

Keywords:effectiveness test, sunscreen cream, coconut oil, bay leaf ethanol extract, TiO_2

ICO00236

Preparation of Activated Carbon from Gnetum gnemon Shell Waste by Furnace-NaCl activation for Methylene Blue Adsorption

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ABSTRACT

A low-cost activated carbon from agricultural waste has been prepared and applied for methylene blue removal in aqueous solution. Gnetum gnemon shell waste collected from local agricultural waste was used as a carbon source. The activated carbon powder was obtained after heat treatment of Gnetum gnemon shell waste in furnace at temperature of 400ºC and it was then activated with NaCl. The effect of experimental condition on adsorption capacity such as contact time and pH were evaluated. The result showed that the optimum experimental conditions was achieved at pH 8 and contact time of 20 minutes. Methylene blue adsorption by activated carbon from gnetum gnemon shell waste fitted the Langmuir isotherm adsorption model with a maximum absorption capacity (Qmaks) of 62.5 mg/g which suggested that it is a potential adsorbent for methylene blue adsorption.

Keywords: Adsorption, activated carbon, Gnetum gnemon shell, agricultural waste, methylene blue,

ICO00281

The Chemy Hand Soap Production for Preventing Action in Covid-19 Pandemic

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ABSTRACT

The production of Handsoap chemicals by chemistry students in UIN SulthanThahaSaifuddin Jambi with assisted lecturers was made to maintain hand hygiene using soap during the spread of SARS-Cov-2 in Jambi especially. This study aims to improve and hone the ability of chemistry students to think creatively and care for the environment during a pandemic. The data in this research is managed with a community development approach. The results of this study were: (1) 2 types of hand soap products were produced, namely using chemicals and utilizing cinnamon extract (Cinnamomumburmanii); (2) The resulting product is sent to the academic community of UIN SulthanThahaSaifuddin Jambi and the surrounding community. This activity is one of the solutions to the old spread of SARS-Cov-2 which is increasingly widespread and a vaccine from the virus has not been found.

Keywords: Community development, Covid-19 pandemic, ChemyHandsoap

SESSION 2

Group: 01_BIOLOGY

ICO00043

ISOLATION AND DETERMINATION OF *Candida albicans* ON THE MOUTH AND SIWAK SALAFI COMMUNITY

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ABSTRACT

Siwak is a *Salvadoraceae* families which is reported by some researchers to have an anti-bacterial effect. The purpose of this study was to determine of *Candida albicans* in the mouth and siwak. This is a true experimental research with the population of the Salafi community of the Lima Kaum Batusangkar mosque, the sample was taken by purposive sampling as many as three people who showed different ways of using it. The stages of the study were divided into 2 steps, the first step was isolation of Candida albicans in all three types of samples, the second step was by molecular identificationusing the phenol chloroform technique. The Polymerase Chain Reaction (PCR) process was carried out using a Thermal Cycler Applied Biosystem Type 2700 with a volume of 25 µl containing 100ng / ml of total DNA, 2 µl 2.5 mM dNTP, 0.62 µl (10 m mol) primary mix forward and 0.625 µl 10x buffer. The results showed that the isolation of the mouth and wood of washed and unwashed siwak showed positive Candida albicans while in samples that varied the use of siwak and toothpaste there was no Candida albicans found in the mouth and the wood of the siwak.

Keywords*:Candida Albicans*, Kayu Siwak, Salafi Community

ICO00069

Effect of Jicama (*Pachyrhizus erosus*) Fiber on Energy Intake and Adipose Tissue Profiles in Mice Fed with High-Fat Diet

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ABSTRACT

Jicama (*Pachyrhizuz erosus*, Fabaceae) has been reported to elicit various medicinal benefits against metabolic disturbances. We also have previously demosntrated that isolated jicama fiber (JF) could sustain the normoglycemic state in high-sugar diet fed mice. In this present study, we investigated the effectivity of jicama fiber in preventing the dysregulation of energy metabolism as well as adiposity in adult male BALB/c mice fed with a high-fat diet (HFD). Three groups of animals were treated with normal diet (ND), HFD, and HFD in combination with 25% JF (w/w), respectively for 8 weeks *ad libitum*. Furthermore, food intake, energy intake, water intake, white adipose (WAT) and brown adipose (BAT) tissue mass, kidney and liver weight as well as organ index were determined. Our investigation revealed that JF 25% could preclude the perturbation of circadian feeding and energy intake rhythms caused by HFD but significantly reduced total water intake. JF also effectively counteracted the marked increase of white adipose tissue (WAT) and decrease of brown adipose tissue (BAT) weight and its index in HFD-fed mice. Furthermore, JF did not significantly alter the weight and index of both kidney and liver in HFD-fed mice.This finding suggest that JF could be used as a potent supplement to minimize the disruption of energy homeostasis and obesity caused by HFD.

Keyword :-

ICO00276

STUDY OF ANTIINFLAMATION ACTIVITY IN ETHANOL EXTRACT FROM CORIANDER LEAF (*Coriandrum sativum* L.) INDUCED BY CARRAGEENAN IN MALE RATS

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ABSTRACT

Coriander (*Coriandrum sativum L.*) is a popular spice plant in Indonesia. This plant has benefits as traditional herbal medicine plants, especially in the leafy part of which are useful as anti-inflammatory.The objective of this research is to determine the anti-inflammatory effects of ethanol extract of coriander leaves on the soles of male rats induced by λ-carrageenan.

The method used in this study is the paw edema method using a digital pletismometer with the principle of measurement based on Archimedes' law and carried out experimentally by dividing 25 mice into 5 groups. Group 1, 2, and 3 were given ethanol extract of coriander leaves (EECL) with each dose of 100, 200, and 400 mg/kg bw, group 4 as negative control, group 5 as positive control given diclofenac sodium, then the volume is measured.

The results of this study from tukey test results on inflammation showed that EECL doses of 100, 200, and 400 mg/kg bw didn't differ significantly ($p > 0.05$) with sodium diclofenac dose of 2.25 mg/kg bw at 240 minutes to 360 minutes, but significantly different from CMC Na 0.05% ($p < 0.05$). In inhibitionpercent of inflammation EECL doses of 100, 200 and 400 mg/kg bw didn't differ significantly ($p > 0.05$) with sodium diclofenac dose of 2.25 mg/kg bw at 30 minutes to 360 minutes.

The Conclusion of this study is EECLdoses of 100, 200, and 400 mg/kg bw have anti-inflammatory activity in carrageenan-induced male rats. EEDK dose 400 mg/kg bw has the best average inflammation inhibitory activity.

***Keywords*:**anti-inflammation, ethanol extract of coriander leaves, carrageenan, rats

ICO00213

Effect of drying and composition variation herbal tea of C*litoria ternatea* L. and O*cimum sanctum* L. on the content of secondary metabolite compounds which is potential as antioxidant

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ABSTRACT

One of the plants that can be used for herbal tea is Lemon Basil (*Ocimum sanctum* L.) and Butterfly Pea (*Clitoria ternatea* L.) because they contain secondary metabolites and potential as antioxidants. The purpose of this study was to determine the antioxidant potential based on the secondary metabolites and the antioxidant value. This research is an experimental design, Factorial Completely Randomized Design consisting of nine treatment combination and three replications. Data were analyzed by ANOVA and Tukey's HSD test. The results showed that the treatment affected the antioxidant value with the F-value > F-table (hypothesis accepted) at the test level 0.01 with a value of 94.26 > 3.71. The best treatment is P2K3 by showing an antioxidant value of 38.61 ppm. A total of 37.01 ppm concentration of combined herbal tea samples as a whole can reduce 50% of the radical effects of DPPH compounds. The secondary metabolite compounds contained in combination herbal teas are alkaloids, flavonoids, terpenoids, and saponins.

Keywords: antioxidant, secondary metabolite, *Clitoria ternatea* and *Ocimum sanctum*

ICO00251

Optimization of Wood Vinegar from Pyrolysis of Jelutung Wood (*Dyera lowii* Hook) by Using Response Surface Methodology

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ABSTRACT

The pyrolysis temperature and pyrolysis time are primary parameters for wood vinegaryield. The optimization of pyrolysis process parameters for jelutung wood is necessary to maximize wood vinegar yield by determining the optimum values of these parameters. The objective of this study was to optimize experimental parameters to obtain the maximum wood vinegar yield from pyrolysis of jelutung wood by usingresponse surface methodology (RSM). Important pyrolysis process parameters such as pyrolysis temperature (X1) and pyrolysis times (X2) were optimized. The regression equation obtained for the wood vinegar yield were $Y = 30{,}24 + 2{,}11\ X1 - 0.72\ X2 - 2.10\ X1^2 - 1.27\ X2^2 - 0.53\ X1.X2$. The maximum wood vinegar yield of 30.97 % was obtained at the optimum parameters of pyrolysis temperature of 462,5 °C and pyrolysis temperature of 152 minutes.

Keywords: Jelutung wood; optimization; response surface methodology; wood vinegar

Group: 02_CHEMISTRY

ICO00087

Synthesis and *in vitro* antioxidant activity of chloro-substituted hydrazone

(Synthesis chloro-substituted hydrazone and their activities as development of new antioxidant drugs)

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ABSTRACT

Hydrazones have been reported for various biological activities, including their scavenging radical activity as antioxidants. The presence of azomethine group (-NHN=CH-) makes this compound as one of important class in many synthetic products. In this study, series of chloro-substituted hydrazones have been synthesized through condensation reaction between substituted benzaldehydes and phenylhydrazine under microwave irradiation. The structures of the synthesized compounds were confirmed by UV, FTIR, NMR and GC-MS spectroscopic datawhile antioxidant activity was tested by DPPH method. The yields of synthesized compounds were in moderate to high level. The results of *in vitro* antioxidant activity assay showed that *meta* and *para* position of chlorohydrazone have very good antioxidant activity with IC_{50} value of 25.8 and 41.6 µg/mL respectively.The results demonstrated that these active compounds may use to support as a decent stand for further investigation in a way to ascertain innovative antioxidant medicines.

Keywords:hydrazone, antioxidant, DPPH.

ICO00141

Macro and Micro Minerals Composition of Indian Scad (*Decapterus russelli*) From Mollucas Waters

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ABSTRACT

Minerals have a very important role for the human body, fulfillment of mineral needs in humans is obtained by consuming food. One source of animal minerals is Indian scad. Indian scad has a mineral composition that the body needs. This study aims to determine the macro and micro minerals composition of Indian scad. Samples are grouped by body weight, then prepared and tested for macro minerals (Ca, K, Mg and Na) and micro minerals (Cu, Fe, Mn, Se and Zn). The results of grouping the Indian scad based on the average weight obtained by 3 (three) groups, namely group A (72.8 g), B (136.1 g) and C (222.2 g). Proportion of Indian scad has a 69% meat, 18% head and bones, 13% viscera and gills, 1% blood and water. Macro mineral measurements in each group of fish obtained results: Calcium 40.353 mg/g (A), 37.559 mg/g (B) and 71.334 mg/g (C), Potassium 69.350 mg/g (A), 55.834 mg/g (B) and 67.146 mg/g (C), Magnesium 10.701 mg/g (A), 7.985 mg/g (B) and 11.550 mg/g (C) and Sodium 29.525 mg/g (A), 28.942 mg/g (B) and 29.072 mg/g (C). Micro minerals measurement results: Copper 0.119 mg/g (A), 0.046 mg/g (B) and 0.068 mg/g (C); Iron 0.363 mg/g (A), 0.204 mg/g (B) and 0.324 mg/g (C); Manganese 0.013 mg/g (A), 0.011 mg/g (B) and 0.014 mg/g (C); Selenium 0.464 mg/g (A), 1.007 mg/g (B) and 2.847 mg/g (C); Zinc 0.262 mg/g (A), 0.227 mg/g (B) and 0.431 mg/g (C). Indian scad meat has a macro and micro minerals composition that varies depending on the body weight of the fish.

Keywords: calcium, indianscad, macro mineral, micro mineral, selenium

ICO00028

Optimizing monolith electrode supercapacitors derived from *areca catechu* husk waste in aqueous electrolytes

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ABSTRACT

Aqueous electrolytes have shown great interest in developing high performance and environmentally friendly supercapacitors. This work focuses on systematic investigations of the symmetrical properties of activated carbon electrode for supercapacitors in different aqueous electrolytes. Here, we compare the performance of supercapacitors using 1M KOH and 1M H_2SO_4 different electrolytes based on carbon monolith electrodes derived from *areca catechu* husk waste. Carbon electrodes were synthesized using single-step pyrolysis both carbonization and physical activation without the addition of synthetic adhesive materials. The electrochemical properties were evaluated based on the cyclic voltammetry method at voltage windows of 0-0.5V and 0-1.0V with a scanning rate of 1 mV/s, 2 mV/s, 5 mV/s, and 10 mV/s. The electrode supercapacitor showed the highest specific capacitance of 150 F/g and 112 F/g at a scanning rate of 1 mV/s for H_2SO_4 and KOH electrolytes respectively. The maximum specific energy was found as high as 20.97 Wh/kg and the specific power of 75.57 kW/kg at the voltage window of 0-1.0V were achieved for H_2SO4 electrolytes. As addition, the physical properties of carbon electrode also characterized such as mass, volume, and density. This work provides consideration the selected of different aqueous electrolytes for high-performance supercapacitors.

Keywords:Aqueous electrolytes, activated carbon, areca catechu, supercapacitor.

ICO00194

Identification of Secondary Metabolite Compounds and GC-MS test (Gas Chromatography Mass Spectroscopy) on Purslane Plant (Portulaca oleracea L)

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ABSTRACT

This study aims to analyze the types of secondary metabolite compounds contained in purslane plants (Portulaca oleracea). Ethanol extract of roots, stems and purslane leaves was obtained by maceration of root, stem and leaf samples using 96% ethanol for 3x24 hours. Phytochemical tests for ethanol extracts of roots, stems and purslane leaf include examination of alkaloids, saponins, tannins, flavonoids, steroids and terpenoids. Phytochemical test results showed that the ethanol extract of roots and purslane positive stems contained alkaloids, tannins, saponins, steroids, flavonoids and terpenoids. While the phytochemical test results of positive purslane leaf ethanol extracts contain alkaloids, tannins, terpenoids and saponins. Then the secondary metabolite compounds are identified using GC-MS (Gas Chromatography Mass Spectroscopy). The results of the identification of ethanol extracts of roots, stems and purslane leaves found the most compounds. At the root are stigmast, phenol, propionate, hexadecanoic acid and octadecanoic acid. In the stems are ethylcholest, campasterol, borabicyclo [3.1.3] nonane, stigmast and phenol. The leaves are phenol, stigmast, phenol, methyl linolenic acid and hexadwcanoic acid.

Keywords: roots, purslane stems and leaves, secondary metabolites, GC-MS spectrophotometer.

ICO00244

Synthesis of proton-conducting membranes based on sulfonated polystirene and bacterial cellulose

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ABSTRACT

Synthesis of composite material based in sulfonated polystyrene and bacterial cellulose as a proton membrane has been carried out. In this study, the membrane was made with the variations mass ratio of sulfonated polystyrene mass: bacterial cellulose 1.5: 3.5, 2.5: 2.5, 3.5: 1.5. The membranes was characterized by analyzing of functional groups, proton conductivity, cation exchange capacity, and degree of swelling. The FTIR spectrum showed that the sulfonated polystyrene-bacterial cellulose composite material was successfully synthesized which was shown at the peak at wave number 1124.767 cm^{-1} which was a SO_3 stretching vibration. The peak at wave number 962-1150 cm^{-1} was assigned the stretching of CO vibrations for C-OC and C-OH which indicates cellulose glycosidic bonds. The highest Cation Exchange Capacity (CEC) value and proton conductivity were in the composite membrane: bacterial cellulose mass ratio 3.5: 1.5, the CEC value 2.25 meq/g and the proton conductivity value 1.176 x 10^{-6} S/cm^2. This result shows that the sulfonated polystyrene-cellulose bacterial composite membrane has the ability to deliver protons so that it has the potential to be developed as a fuel cell membrane.

Keywords:Sulfonated Polystyrene, Bacterial Cellulose, Composites, Proton-Conducting Membranes.

Group 03_MATHEMATICS – STATISTICS

ICO00202

On the characteristic of homomorphisms on cyclically ordered groups

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ABSTRACT

For cyclically ordered groups G,G', the mapping f: G → G' is called a homomorphism if f is a homomorhism with respect to the group operation, and whenever x,y,z in G such that [x,y,z], and f(x),f(y),f(z) are distinct, then [f(x),f(y),f(z)]. In this paper, it will be analyzed the necessary conditions for a group homomorphism to be a homomorphism.

***Keywords*:** cyclically ordered group, homomorphism, group homomorphism

ICO00243

Review on some construction of cyclically ordered groups

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ABSTRACT

In this paper we review some techniques of construction of new cyclically ordered groups from the old ones. Especially, we focus on the construction of quotient and direct product group.

Keywords: cyclically ordered group, quotient group, direct product group.

ICO00264

Robust Counterpart Open-Capacitated Vehicle Routing Problem with Time Windows and Deadline (RCOCVRPTWD) Model in Optimization of Waste Transportation in Sub-District Kalidoni, Palembang Using LINGO 13.0

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ABSTRACT

Robust Counterpart-Open Capacitated Vehicle Routing Problem with time windows and deadline (RC-OCVRPTWD) model which was formed and explained in this paper, is a model used to design solid waste control routes to minimize the distance and time needed for vehicles to complete waste transportation in Kalidoni Sub-District, Palembang. The completion of this route is expected to be able to overcome the occurrence of solid waste accumulation in Kalidoni District, Palembang that involved two characteristics the time that takes for the vehicle to across the route and the time needed to transport waste to the vehicle, which is called time windows. The second combination of time above is deadline. Waste that are transported every day is divided into working areas where the distance of temporary disposal to other disposal in one working area and the volume of waste transported will affect the length of deadline needed. This RC-OCVRPTWD model uses the LINGO 13.0 application to obtain optimal routes and deadlines. The results show that the working route for Kalidoni Sub-District in working area 1 is completed within 28.6 km and a deadline of 2 hours 51 minutes. In working area 2, is with a distance of 23.6 km and a deadline of 1 hour 42 minutes, and in working area 3 is with a distance of 38 km and a deadline of 3 hours 16 minutes.

Keywords: robust counterpart model, minimal route, time windows, deadline, open capacitated vehicle routing problem

ICO00120

WEIBULL REGRESSION AND STRATIFIED COX REGRESSION IN MODELING EXCLUSIVE BREASTFEEDING DURATION

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ABSTRACT

Survival analysis has three approaches namely, parametric, non-parametric and semi-parametric. The parametric model requires the distribution of survival time to be known. Weibull regression is one of the most popular forms of parametric approaches with advantages in flexibility and simplicity of hazard functions and survival functions. Stratified Cox regression is semi-parametric approach method that is rightly used when proportional hazard assumption is violated. The comparison between Weibull regression and stratified Cox regression was applied in the case of the duration of exclusive breastfeeding in infants aged 0-6 months in Indonesia in 2017. Before the model was formed, the data were tested for the Weibull distribution and the results were met properly. Whereas for testing proportional hazard assumptions the results are not fulfilled so that semi-parametric models can be used. Based on the results of the study, the parametric approach model using the Weibull distribution is better than the semi-parametric model using stratified Cox regression.

Keywords: survival analysis, parametric, semi-parametric, Weibull regression, stratified Cox regression.

ICO00229

Bifurcation analysis of epidemic model without immunity and waning immunity

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ABSTRACT

In this paper, we analyse the bifurcation of epidemic models. Those models are without immunity and waning immunity. First, the stability of those systems are analyzed by analyzing the stability of equilibrium points. The threshold number that associated with the stability was determined. Later, the existence of bifurcation was analyzed. The result show that bifurcation exist and threshold number is considered as bifurcation parameter. Numerical simulation is given to confirm the analytical results by showing the graphic solutions and phase portrait.

Keywords:Epidemic model. Immunity. Stabilty. Threshold number. Bifurcation.

Group: 04_EDUCATION 1

ICO00310

Development of Bioremediation Learning Material based on Contextual Teaching and Learning (CTL)

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ABSTRACT

Structured learning material function as ground base for students to read and analyze topic related on deeper level. This succession in learning comes out as a problem in biotechnology course for bioremediation topic, in Biology Department of Universitas Negeri Padang. Students have to read recent research articles from national and international indexed journal, but they do not have basic concept in the first place and coumpounded by english as languange barrier. This lead to problem of not achieving the learning puporses. Hence, there is a need for structured basic concept of bioremediation learning material. This is educational research and develompment (R&D) using Plomp model, which consist of three phases: preliminary research, development or prototyping, and assessment phase. Data gathering as qualitative and quantitave, through interview, questionnaire and paper based test to measure students comprehension about bioremediation. Result of this research shows that learning material of bioremediation are valid from content, layout and presentation, graphics, and lingustic, practical in use for students and lecturer as user and effective to increase students comprehension about bioremediation.

Keywords: Learning material development, bioremediation learning material, Contextual Teaching and Learning (CTL) pedagogical model, Research and Development with Plomp model, Plomp model of educational design research.

ICO00048

Application of Urban Ecological Concepts Toward Healthy and Human Cities

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ABSTRACT

Recognizing the era of demographic trends, it is important to anticipate population growth between 2000-2030, around 2 billion people will be concentrated in urban areas (PBB, 2004). The 21st-century will be a century of urbanization that covers around 1-6% of the earth's surface, but they have enormous ecological 'footprints' and complex, strong, and indirect effects on ecosystems. At present, more than 50% of the world's population lives in urban areas, and it is estimated that 70% of the world's population will live in cities and towns by 2050. An urban ecological approach is becoming increasingly important in dealing with large numbers of the world's population. population. urban health problems arising from urbanization and globalization in developed and developing countries. This research is a descriptive study with a Systematic Literature Review (SLR). This research focuses on urban areas that store various types of nature ranging from semi-natural habitats to abandoned areas, parks, and other biotopes that are strongly influenced by humans with related species assemblages. The results show that the maintenance of urban biodiversity for residents and their intrinsic value in the face of increasing population and developing cities requires that ecological knowledge must be better integrated into urban planning. To achieve this goal, an understanding of ecological patterns and processes in urban ecosystems is needed so that there is a balance between urban development and development with environmental sustainability to achieve a better quality of life and harmony with the environment for urban communities.

Keywords: urban ecology, healthy city, human city.

ICO00047

Blended Learning Best Practice to Answers 21St-Century Learning Demands

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ABSTRACT

Identify and explore 21st-century skills demands that must be mastered by someone, so that education is expected to be able to prepare students to master these skills to become successful individuals in life. Important skills in the 21st century are still relevant to the four pillars of life that include learning to know, learning to do, learning to be, and learning to live together. Education becomes a means to shape these specific skills, such as critical thinking skills, problem-solving, metacognition, communication skills, collaboration, information literacy, and various other skills. This research is a descriptive study with a Systematic Literature Review (SLR). This research focuses on designing learning activities that are relevant to the real world, empowering metacognition, and developing student-centered learning to achieve meaningful learning concepts that are expected to gain competent quality output. Various ways can be implemented in the learning process, one of which is by cultivating creativity and innovation in learning through blended learning. The results show that blended learning indicates high learning outcomes compared to online learning and face to face because blended learning is a model that combines the advantages of face-to-face learning models with e-learning learning models by developing various learning media. Blended learning is an alternative solution to overcome the weaknesses of online learning and face-to-face learning to produce a series of effective, efficient, and enjoyable learning for students. Blended learning interaction and communication between students and between teacher-students can continue and this is the main attraction of learning in the 21st-century era.

Keywords:blended learning, skill demands, 21st-century learning.

ICO00131

The Handbook to Identificate Bintan Coastal Invertebrate

A Contextual Teaching and Learning Media Based on Local Potential of Kepulauan Riau

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ABSTRACT

Contextual Teaching and Learning (CTL) is quite important to be applied due to students weakness in connecting between what they learn and how the knowledge will be used. CTL is a learning system that matches the performance of the brain, to construct patterns that embody meaning, by linking the academic content with the context of everyday life of the learners. By applying CTL the information received is not only stored in short-term memory, which is easily forgotten, but can be stored in long-term memory so that it will be appreciated and applied in the job task. CTL can be applied through various learning components. One of them is by applying appropriate learning resources/learning media to facilitate CTL. Through research and development with the Plomp model, a handbook has been developed to identify specific invertebrates exist on the coast of Bintan (the Province of Kepulauan Riau). This handbook was developed through processes namely; (1) creating content begins with collecting invertebrates from the coastal area of Bintan, (2) identifying invertebrates using research publications, (3) displaying content in the form of handbooks applying attractive designs, (4) ask suggestions for improvements to the validator, and (5) test the feasibility through trials in learning. These processes drive the handbook different from most learning resources on this topic that do not specifically provide information about invertebrates exist in Bintan or Kepulauan Riau. The using of handbook encourages 100% completeness in learning mastering for 21 students. Furthermore, it increases learning motivation in a high increasing category.

Keywords: Contextual Teaching and Learning, handbook, invertebrate identifying, coastal area of Bintan, local potential

ICO00279

VALIDITY LEVEL ANALYSIS MODEL PJBL ASIX AYO (PJBL 6-A AYO) FOR BIOLOGY LEARNING

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ABSTRACT

Researcher has develop based model project based learning, this model known as the PjBL Asix AYO. The purpose of this research is to know the level validity model developed. PjBL Asix AYO developed for learning biology in the study education biology program at Riau of Islamic University (UIR). This research uses the method R& D, the model used the model Plomp (2013). Data collection techniques using a technique. interviews and survey. Data analysis by determining the s cohen' kappa berbantuan spss version 20. The results of the study explained that book model PjBL Asix AYO developed being used to the revision of small. Guidebooks work lecturer developed very reasonable used with small revision. Guidebooks work student who developed very reasonable used with small revision. The study conclusion PjBL Asix AYO model developed very reasonable used learning in biology .

***Keywords** : analysis , the level of feasibility, PjBL Asix AYO*

Group: 05_EDUCATION 2

ICO00118

Using Video as an Effective Teaching Material to Improve Student Learning Outcomes During The Covid-19 Pandemic

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ABSTRACT

The impact of the covid-19 pandemic occurred in various fields, one of which was in education. The implementation of face-to-face learning was stopped and it is replaced with online learning. But in its implementation, online learning has a lot of obstacles that cause student learning outcomes are not optimal. Using video as a teaching materials is expected to improve student learning outcomes. This study aims to describe the effectiveness of online learning during the covid-19 pandemic using video teaching materials on student learning outcomes. This research uses a descriptive qualitative approach. The instrument used in this study was a student activity questionnaire sheet and a test sheet. Subjects in this study were students of 4th semester of mathematics education study program in UMM. Data collection techniques used is online questionnaires for students and test giving. Data analysis techniques used are data reduction, data presentation, and taking conclusions. The result showed that the activities of students is in a good category. While the student test result shows that 82% of students score above 80. This means that student learning outcomes are very good. The conclusion of this research is the implementation of online learning using video as a teaching material effectively improving student learning outcomes.

Keywords: Effective Teaching Material, Video, Student Learning Outcome, Covid-19

ICO00123

Undergraduate students' schema of mathematics proof construction: sequence and implication

(Mathematics proof construction: An ability of first-year mathematics undergraduate students')

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ABSTRACT

This study purposed to describe the sequence of students' schema in mathematics proof construction. This study used a qualitative approach with a descriptive-explorative design which involved sixundergraduate students of first-year mathematics education major. The data were analyzed based on a concept-understanding schema of Moore. The results showed that the schema used by students was images-concepts to usage-concepts. Most of the students failed to connect images-concepts to definitions-concepts before reached usage-concepts to construct mathematics proof. Students also had difficult to apply definition-concepts schema in mathematics proof correctly. The quality of proof construction produced by first-year mathematics undergraduate students was an invalid formal-proof construction. Thus, the ability of first-year mathematicsundergraduatestudents'tounderstanding formal-definition concepts should develop in mathematics didactical approaches.

Keywords:proof construction, undergraduate students schema

ICO00097

Development of Mathematics Student Worksheets (LKS) Through the Approach Model Eliciting Activities (MEAs) on the Triangle Material

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ABSTRACT

Student Worksheet (LKS) is one of the teaching materials needed by teachers on the mathematics learning process to achieve basic competencies needed. The objective of this study is to determine the validity, practicality, and effectiveness of the development of worksheets based on the MEAs approach of triangular material. This type of R & D (Research and Development) research adopts the ADDIE development model. The trial sujects in this study are Grade VII students of SMP Negeri 1 Suli, Luwu Regency, totaling 10 students. Tehnique collection data that used were validity data obtained from validation sheets by experts, practicality data obtained from student response questionnaires and effectiveness data obtained from student learning outcomes tests. The data obtained were analyzed using descriptive statistics. The results of this study indicate that the validation of LKS is 0.70 in the very valid category, the average practicality of LKS is 0.73 in the practical category, and the average acquisition of the effectiveness of the LKS is 0.87 is in the very effective category increasing student learning outcomes in the material triangle.

Keywords :Development, Student Worksheets (LKS), Model Eliciting Activities (MEAs) Approach

ICO00313

UTILIZATION OF GRAPH APPLICATION IN THE MAKING OF BENGKULU MEMBERS B2 CITY

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ABSTRACT

Public transport is one of petrified transfortasi society in everyday activities, doing the activity that a short distance and the distance which can be reached by public transportation, in this cas e there are some constraints in using common trnsportasi one problem is the dreaded public transportation or less neatly triggering congestion. In studies here discussed how the graph is used to track pembutan memebatu in order to more regular and can reduce congestion. With their neat and orderly path can petrify people in making public transportation memudahnkan which they will use to get to their chosen destination. Irregular lane will cause problems such as ngetem and congestion. In penenlitian will use the method Chinese postman problem. The track and the circuit that is widely used is the path and Eulerian circuit.

Keywords: *Graf, paths, public transportation, postman china, track, circuit.*

ICO00219

PRACTICALITY OF LEARNING DESIGN BASED ON REALISTIC MATHEMATICS EDUCATION FOR DERIVATIVE TOPICS

(Practicality of learning design based on realistic mathematics education for derivative topics in grade XI SMA)

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ABSTRACT

The Derivative is one of the important subjects in mathematic. One of the goals of derivative learning is the students can / be able to solve mathematical problems in real life. This study is aimed to produce the products of teachers book and students book to improve the students' mathematical problem-solving abilities. The design of this study is developed based on realistic mathematics education that used Plomps' model and Gravemeijer & Cobb. The data collection of this study was the questionnaire that is answered by the teachers and the students, with the practicality value of the teachers' responses is 0.812 and the practicality value of students' responses is 0.820. The data were analyzed by using descriptive analysis. The results of this study were the design of derivative learning topics based on realistic mathematics education has been practical due to the design of RME-based learning topics derived from teacher and student books can be used to develop students' mathematical problem-solving abilities.

Keywords: derivative learning, realistic mathematics education

Group: 06_PHYSICS – AST

ICO00096

Syntesis and Characterization of Pyrite from Deposited Materials of the Bantimurung District of South Sulawesi

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ABSTRACT

Have been succesfully obtained Pyrite (Iron persulfide Pyrite) and Hematite (Fe_2O_3) minerals have been obtained from natural resources from Bantimurung District, Maros Regency, South Sulawesi Province. The method used in this purification is the hydrothermal method. Based on the results of the characterization obtained mineral pyrite with high purity of more than 90%. Based on analysis, this material has a cubic structure P a -3 with lattice parameter a = 5.4167 A^0 and Hematite group space structure -R 3 2 c with lattice parameters a = 5.048 A^0, b = 5.048 A^0, and c = 13.762 A^0. This results are in accordance with the surface morphology that is characterized using SEM in various magnifications. The results of the characterization and analysis of XRF, XRD and SEM also shown that the degree of crystallization and homogeneity of natural material deposits in the Bantimurung district are rich in iron, Magnesium (Mg), Sulfur (S), and are present with high percentages and also high value minerals such as Molybdenum (Mo), Neodymium with low percentages . With this composition, material in this region has the potential to be used as a photovoltaic coating in solar cell applications, for sulfur dioxide production, for the paper industry, manufacturing sulfuric acid, semiconductor materials, as well as sodium and lithium battery applications.

Keywords: pyrite minerals, hematite (Fe_2O_3), bantimurung SEM, XRD.

ICO00129

The Influence of Calcination Temperature to Calcium Content in the Mangrove Crab Shells (*Scylla serrata*) from Merauke

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ABSTRACT

This study introduced the use of shells of the Merauke Mangrove crabs as a natural source of calcium extracted through thermal decomposition process with various temperatures. The method adopted in this study was carried out in two stages; first, shells of the crabs that have been cleansed and dried under the sun for 24 hours, were mashed and then it divided into two parts. The first section was used for the analysis of calcium composition. While the second part was calcined at three different temperatures, 900°C, 1000°C and 1100°C for 5 hours before analysis. The results of the XRF showed that the raw powder of mangrove crab shell was contained 90.46% of calcium and 9.64% of other mineral content. This study revealed that the temperature of 1000°C is the right calcination condition to produce high calcium minerals in the mangrove crab shell, in which it reached 98.24% purity. The phase form that obtained from the XRD before being calcined was $CaCO_3$ and after the calcination process was $Ca(OH)_2$ / CaO hydration. This study also found that the calcined process has succeeded to decrease the carbon content in the shells. Therefore, it can be concluded that the mangrove crab shells from Merauke, possess basic materials as bioceramic.

Keywords : Calcination temperature, Calcium, Crab shells

ICO00135

The Analysis of Physical and Chemical Properties in Coral Areas of The Papua Region

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ABSTRACT

Coral reefs are possibly one of the most abundant natural resources in Indonesia. There have been many studies conducted on this material. In the case of coral reefs from Papua, the mineral content of this materialis CaCO3.It is a type of mineral that can be applied on the medical purposes as a basic ingredient for calcium on human bones and teeth. Thematerial is applied through the process of implant that is also known as the hydroxyapatite process.This process is biocompatible for human body. The purpose of this study is to determine the physical and chemical properties on the hydroxyapatite as the result of characterization process of coral reefs in Papua.

There are three types of coral reefs that obtained from Papua; Acroporacervicornis, Poritesmayeri, and Pocilloporadamicornis. Analysis of the physical properties of three coral reefs samples would determinethe density, porosity, and its structural characteristics. The analysis was rendered using a digital microscope, while analysis of the chemical properties of the samples was characterized by applying X-Ray Diffraction (XRD) and Energy Dispersive X-ray (SEM-EDX). From the analysis,it was revealed that the coral reef density value is 20.9 g / cm3, with porosity of 5.01%, while its structure is in the form of pores that are interconnected with its sizes ranging from 83 μm to 818 μm. The formed compounds are calcium carbonate in the phase of aragonite. This phase is highly suitable to be used in converting coral reefs into hydroxyapatite. In conclusion, the coral reefs originating from the Papua regionis highly suitable to be applied forsubstitution material on human bones.

Keywords : Coral reefs, Papua region, Physical and chemical characterization.

ICO00101

The Development of Learning Media Viewed from Concept Understanding and Critical Thinking of Students

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ABSTRACT

This research is a development research by referring to the ADDIE model, among others namely Analysis, Design, Development, Implementation, and Evaluation. This purpose of this research is to create learning media by using visual basic programming by paying attention concept understanding and critical thinking of students. This media intended for elementary mathematics courses. The instrument used in this research in the form of an assessment sheet given to 2 material experts and 1 media expert, lecturer and student representatives. The results showed: From the results validation of the material experts, students' understanding concepts showed an average of 3.70 with a very valid category and students' critical thinking showed an average of 3.4 with a valid category. From media validation experts, students' understanding concepts and critical thinking get the same value of 3.6 with a very valid category. While based on the results of the assessments from lecturer showed the results of the instrument with a value of 3.4 with a valid category viewed from concept understanding and a value of 3.2 with a valid category viewed from critical thinking, and from student representatives the average results of the instrument showed a value of 3, 8 with a very valid category.

Keywords:Media, Concept Understanding, Critical Thinking.

ICO00334

EFFECT OF GRAIN SIZE COCONUT FROND POWDER ON THE MECHANICAL PROPERTIES OF PARTICLE BOARD

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ABSTRACT

Particle board research made from coconut front powder with various grain size has been done. First particle board was made by mixing coconut front powder with various grain size there are 10; 25; 50 and 75 mesh with liquid rubber compound to obtain a particle board with the length, width and height of 5 x 10 x 7.5 cm and then dried by drying. Subsequently the particle board pressed to a thickness of 2.5 cm and then tested the modulus of elasticity (MOE), the modulus of rupture (MOR) and the Screw Hold Strength. The results indicated that the best condition was obtained on the use of 50 mesh coconut front powder and 45% liquid rubber compound. In this condition, the value of MOR, MOE and strength of screw are 2051.28 g / mm^2, 618.18 g / mm^2 and 4.9111 N / cm^2 respectively.

***Keywords*:** particle board, coconut front powder, liquid rubber compound, MOR, MOE

Group: 07_MATHEMATICS – STATISTICS

ICO00205

Application of Intuitionistic Fuzzy Soft Set to Topology

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ABSTRACT

A new topology on a set can be generated by a basis. In this paper, we construct an intuitionistic fuzzy soft basis for an intuitionistic fuzzy soft topology. Furthermore, we define the intuitionistic fuzzy soft topology generated by basis and establish some important theorem. Also, some concepts of intuitionistic fuzzy soft basis and subbasis are introduced here.

Keywords: Intuitionistic fuzzy soft set, Intuitionistic fuzzy soft basis, Intuitionistic fuzzy soft topology.

ICO00068

Likelihood ratio test for the mean of asymptotic spatial regression with the Brownian sheet noise

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ABSTRACT

Likelihood ratio test (LR-test) is frequently applied inregression analysis when the observations are normallydistributed. However, when the normality assumption is notfulfilled, LR-test can not be directly adopted for testing thesignificance of the model. In this work, we propose an approach byfirstly transforming the observations to a set-indexed partialsums process. The limit model is presented as a deterministictrend plus a random noise given by the set-indexed Brownian sheet.We show that the problem of testing the appropriateness of a modelcan be handled by testing the validity of the trend in the limitmodel by defining an LR-test based on the ratio between thelikelihood function under H_0 and under $H_0\cup H_1$. Therejection region as well as the power of the size α LR-testare obtained based on the Cameron-Martin-Girsanov formula of theRadon-Nikodym derivative of the set-indexed partial sums limitprocess of the observation with respect to the set-indexedBrownian sheet. Simulation study shows that the proposed testbehaves as a consistent test in that it maximizes the power whenH_1 is true. Application of the method to real data can help indetecting valid regression model describing the variability of themaximum height of corn plants over the experimental region.

Keywords: Partial sums process; likelihood ratio test; power function; linear regression; spatial process; Cameron-Martin-Girsanov density.

ICO00080

Optimal prediction in isotropic spatial process under spherical type variogram model with application to corn plants data.

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ABSTRACT

A central problem in modelling of spatial data is the construction of an optimal prediction map of a numerical quantity or variable under study. In geostatistics this study is commonly called universal kriging. In this paper we study kriging method for isotropic spatial process under a variogram function belongs to the parametric family of spherical type. The parameters of the postulated variogram model are estimated by applying ordinary least squares method in that the squared distance between the variogram model and the associated variogram sample is minimized. Numerical approximation for finding the solution of the least squares equations is conducted by using graphical approach. The application of the method to a corn plant data results in the kriging map of the maximum height that can be achieved by the corn plants planted over a rectangular farm land. This investigation result can in advance describe the map of the fertility level of the farm land where the corn have been planted.

Keywords: Optimal prediction, universal kriging, least squares, spherical model, grafical method, kriging map.

ICO00102

Relationship of Rainfall and IOD Phenomena by using Spectral Analysis and SARIMA

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ABSTRACT

In this study aims to get the relationship pattern between rainfall in the four Station Climatology and Geophysics Meteorological Agency in Aceh region with the Indian Ocean Dipole (IOD) phenomenon in the Indian Ocean from the period of January 2010 to December 2019. Identification was obtained that the pattern of rainfall time series in the regions of Aceh Barat, Aceh Besar, Sabang and Aceh Utara has a pattern that tends to be similar for each month. It can be seen that the Aceh Barat region has high rainfall compared to the Aceh Besar, Sabang and Aceh Utara regions, this is due to the Aceh Barat region is sensitive to the occurrence of the IOD phenomenon (stronger than the other three regions) so it tends to get high rainfall one.

Rainfall in the regions of Aceh Barat, Aceh Besar, Sabang, and Aceh Utara can be seen the peak point of rainfall occurs at the end of the year which is around October, November, and December (OND). The boxplot shows that in rainfall data there are outliers, where the Aceh Barat region (September and December), the Aceh Besar region (April and August), the Sabang region (February, March, April, August, and November), and the Aceh Utara region (July and December). This indicates that in the month where there are outliers it has high rainfall (negative IOD).

From the time span of this study it is known that rainfall anomaly plots at four stations and the IOD index in 2016 and 2019 have different phases in contrastly, where in 2016 when the IOD index was negative, rainfall in the regions of Aceh Barat, Aceh Besar, Sabang, and Aceh Utara has increased. Conversely, in 2019 when the IOD index was in a positive phase, in the regions of Aceh Barat, Aceh Besar, Sabang, and Aceh Utara experienced a decrease in rainfall. It was found that the negative peak of the IOD event occurred in September 2016 while the positive peak of the IOD event occurred in October 2019. While the normal phase occurred in January to April 2019. In the IOD phases the minimum (negative) and maximum (positive) are conditions that are should be concern observed in an effort to risk reduction of disasters or the effects of these phenomena events.

***Keywords*:** IOD, Rainfall, Risk Reduction, Phase Condition, Outliers.

ICO00286

Modeling the Count Data of Public Health Service Visits with Overdispersion Problem by Using Negative Binomial Regression

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ABSTRACT

The count data of health service visits can be modeled into Poisson regression analysis, which must fulfill no overdispersion occurs by considering the ratio between mean and variance. The overdispersion test is performed by using the ratio of the sum of Pearson residuals over the number of degrees of freedom that must be less than one. The overdispersion problem can be corrected accurately by building mixture distribution where the parameter of Poisson distribution is made to have negative binomial distribution as the theoretical model. The data used in this study are the number of visits to public health service at Padang city as many as 460 data, where the predictor variables are age, sex, education level, occupation, income, home health status, individual health status, health insurance type, distance to health service and diet type. The best model of negative binomial regression is selected by considering the values of AIC, BIC, Log-likelihood, and overdispersion tests that occur between the resulting models. The final result of this count data model with negative binomial regression fits better and overcomes the overdispersion problem with the significant variable is individual health status for this population, and it can be explained that the more individual has a history of having severe illness the more often the number of visits to the health service, meanwhile the other predictor variables have no effect to the number of visits.

Keywords: Negative binomial regression, Poisson regression, Overdispersion, Health service, Count data.

Group: 08_BIOLOGY

ICO00007

The Relationship of Learning Motivation and Attitude inPracticum Activities with Student Practicum Test Results inInvertebrate Diversity Subjects

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ABSTRACT

Learning motivation and attitudes are low when practicum causes low practicumlearning outcomes. This study aims to determine student motivation and attitude in practicum activities, the relationship between motivation and attitude, the relationship between motivation and practicum test results, the relationship between attitude and practicum test results, and the relationship between student motivation and attitude in practicum with student practice test results in Diversity courses Invertebrate animals.

This research is a descriptive correlation study that was conducted in November-December at the Biology Department, FMIPA UNP. The sample consisted of 40 students who were in four classes. The sampling technique is Proportional Random Sampling where the sample is taken 25% from each class. The research instrument used learning motivation questionnaire and attitude questionnaire. The data in this study were analyzed using the simple and multiple Pearson Product Moment correlation formula, then t test and Fcount were performed to determine whether the relationship was significant or not and look for the Determination Coefficient (KP) to see the contribution of X to Y.

The results showed that students' motivation was 72.5% with very high criteria. Attitude is worth 47.5% with good criteria, and the relationship of learning motivation with attitude has r = 0.14, t = 0.88 and KP = 1.96% means the relationship is weak and insignificant. The relationship of learning motivation with practicum results r = 0.35, t = 2.30 and KP = 12.25% the relationship is moderate and significant. The relationship between attitude and practicum test results with a value of r = 0.06, t = 0.37 and KP = 0.36% means that the relationship is very weak and insignificant, and the relationship of learning motivation and attitude with the results of the practicum exam has r = 0.35 , F_{count} = 3.54 and KP = 12.25% which means that the relationship is moderate and significant.

Keywords:Practicum Activities, Learning Motivation, Attitudes, Test Results of Invertebrate Animal Diversity Practicum

ICO00032

Essay Test Integrated Critical Thinking Assessment In Human Anatomy And Physiology Learning

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ABSTRACT

This development research aims to determine the characteristics and feasibility of assessing critical thinking skills in human anatomy and physiology subjects. Development is carried out used the Plomp model (2013). The critical thinking assessment was developed in the form of an essay and scoring rubric referring to Finken and Ennis (2001) with FRISCO critical thinking indicators consisting of focus, reason, inference, situation, clarity, and overview. Expert validation was carried out by 3 expert validators and item validity was carried out on 109 biology education students at Universitas Negri Padang who had attended lectures on human anatomy and physiology. The results showed that: (1) the critical thinking assessment met the validity of the expert judgment in the valid category with an average of 4.60; (2) The mean of the question reliability coefficient by the validity of expert judgment was 98.40% in the reliable category; (3) The results of the item validity showed that out of 20 it was obtained 15 questions were in the valid category with a validity value of 0.453-0.693; (4) The assessment has an item reliability value of 0.795-0.838 with good criteria. The results of this study indicate that the questions developed can be used as an instrument in measuring critical thinking skills in human anatomy and physiology subjects.

Keywords: development research, assessing critical thinking skills, human anatomy and physiology subjects

ICO00332

Improving Preservice Students' Disaster Context Science Literacy (DCSL) Using Earthquake Precursor Learning Material

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ABSTRACT

The facts about Indonesia's disaster vulnerability have principally encouraged the implementation of disaster education, include science learning. Recent studies have performed various learning approaches, models, and media developed success to improve students' knowledge and literacy. Unfortunately, learning media which present disaster preparedness through earthquake precursor learning material (EPLM) was not available yet. Besides, specific learning material is also needed to develop students' scientific literacy so that students can solve daily life problems related to the disaster. The study aims to show improvement of disaster context scientific literacy using earthquake precursor learning material. We use the quasi-experiment method, one group pretest-posttest design. The population is preservice students in the field of Science Education. The sample is determined purposively. Data were analyzed statistically using the t-paired sample test. The instrument used is the Test of Disaster Context Science Literacy (DCSL) and descriptively using N-gain. The study showed that students' DCSL improved significantly, in three knowledge dimensions (content, procedural dan epistemic knowledge, procedural, and epistemic knowledge. The criteria for improvement are middle according to N-gain. Besides, EPLM has helped preservice students to perform three scientific competences, are explain scientific phenomena, evaluate and design inquiry, and interpret data and evidence scientifically.
Keywords: disaster context science literacy, precursor, earthquake, learning material

Keywords : -

ICO00225

The Infulence of Problem Solving Model Toward Student Critical Thinking Skills

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ABSTRACT

The aims of this study was to fine whether there was an influence of the problem solving model toward critical thinking skills student. A quasi experiment method whith the postest control group design was used in this study. Student were grouped in an experimental group (problem solving model) and a control group (direct instruction). The data from a test were analized using t-test with α= 0,05. The findings showed that there was a significant difference of critical thingking skills enhancement in experimental group than the control group.

Keywords : Problem Solving, Critical Thinking

ICO00308

Development of Invertebrates Diversity Practical Guide Oriented Contextual Approach for Student in Biology Department

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ABSTRACT

Practicum is an integral part of science learning which aims to provide opportunities for students to test hypotheses or observe real objects related to concepts or theories. In order for the practicum to be carried out well, it must be facilitated with practical guide. In this study, a practical guide for invertebrates diversity oriented contextual approach was developed. The purpose of this study is to produce a practical guide for invertebrates diversity oriented with contextual approach. The results of this study are a valid practical guide.Based on the research and development that has been done, practical guides that have been developed are in accordance with the established quality standards.

Keywords: Invertebrates Diversity, Practical Guide, Contextual Approach

Group: 09_CHEMISTRY – AST

ICO00346

The Effect of Polyethylene Glycol on The Quality of Bacterial Cellulose Based Biodegradable Plastic from Pineapple Skin (*Ananas comosus*)

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ABSTRACT

The purpose of this research was to determine the effect of polyethylene glycol (PEG) on the quality of bacterial cellulose (BC) based on biodegradable plastic from pineapple skin. Various concentrations and molecular weight of PEG as a plasticizer was added into the fermentation medium during the synthesis of BC-PEG composite. The obtained BC-PEG composite was purified by soaking it into cycled water-NaOH-water. Purified BC-PEG composite was compressed using a hot press with a pressure of 300 psi to obtain BC-PEG plastics. The BC-PEG plastics were characterized their physical properties (water content and degree of swelling), mechanical properties (tensile stress and strain, elasticity), molecular structure (functional group and degree of crystallization), and the degradation capability. The results showed that the water content and the degree of swelling of BC-PEG plastic decreased as increasing the concentration or molecular weight of PEG. The tensile strength properties of the BC-PEG plastic were also decreased as increased both the concentration and molecular weight of PEG. The BC-PG plastics were almost completely degraded for 2 weeks. FTIR results showed that functional groups appeared in BC-PEG plastics were similar to that of BC. Addition of PEG decreased the degree of crystallinity of BC-PEG plastic.

Keywords:BC, PEG, Pineapple skin, biodegradable plastic

ICO00090

The effect of boric acid on the preservation of palm replanting wood waste

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ABSTRACT

At present the area of oil palm plantations in Indonesia is approximately 11 million hectares. In addition to producing abundant of palm oil, this palm plantation also produces waste in the form of replanted wood when the regeneration of the plantation is carried out. The aim of this research is the utilization of palm wood replanting waste, by treating immersion with boric acid as a preservative with concentrations of 1%; 2,5% and 5% with soaking time of 2 days, 4 days and 6 days. From the preliminary analysis of replanting waste, the water content was obtained 34.41%, flexural strength 26.48 kg/cm^2 and compressive strength 3.73 kg/cm^2. After the preservative treatment with boric acid with 2; 4; and 6 days immersion, it was found the decrease of water content, increase of compressive strength and flexural strength. The 4 days immersion with boric acid 5% was the best treatment with the analysis results of water content decreased to 0.31%, analysis of flexural strength increased to 47.60 kg/cm^2 and compressive strength increased to 8.21 kg /cm^2.

Keywords: palm wood waste, boric acid, replanting

ICO00296

Colorimetric properties of dyed batik fabrics using gambier liquid waste

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ABSTRACT

The process of batik and colouring on cotton and silk using gambier liquid waste, through the wax removal process in hot temperature room affects the color characteristic and fastness properties of the fabric. The purpose was to study the effects of the batik process on the color and fastness properties the dyed fabrics. The study was conducted with the use of soda ash as the wax removal, and CaO, $FeSO_4$, $Al_2(SO_4)_3$ as mordant after mordanting the fabrics. The results showed that the batik process affects the can provide varying color strength (3.7 - 16.7) with color coordinates in the range of yellowish (7.7 - 19.9) to reddish (5.7 - 24.8) and fairly good color fastness to excellent against washing, rubbing and light effects. The highest color strength was obtained when using mordant $FeSO_4$ which was applied to silk.

Keywords **:** batik, gambier extract, color strength, fastness properties

ICO00184

Electron Microscope and Diffraction Study of Snake Fruit (*Salacca zalacca* (Gaert.) Voss) Peels

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ABSTRACT

Electron Microscope and diffraction study of Snake Fruit (*Salacca zalacca (*Gaert.) Voss) Peels have been carried out by looking at the surface morphology of the snake fruit peel (outer and inner) and the treatment of snake fruit peel by heating 500 °C with Scanning Electron Microscope (SEM) analysis combined with *energy-dispersive X-ray spectroscopy* (EDS). The SEM micrograph of outer snake fruit peel shows patterned spots with carbon composition (55.73%), oxygen (23.28%), silicon (20.36%) and other components (0.63%). While on the inside it shows the shape like a fiber with carbon composition (46.40%), oxygen (50.43%) and other components (3.17%). Further treatment of snake fruit peel biomass by heating 500 ° C and confirmation by X-ray diffraction (XRD) showed the presence of carbon and crystalline phase of quartz silica. Further confirmation with SEM-EDS shows porous morphology with carbon composition (58.9%), oxygen (28.87%), silicon (5.71%) and other components (6.52%) on snake fruit peel with 500 heating °C.

Keywords:snake fruit peel, electron microscope, diffraction.

SESSION 3

Group: 01_BIOLOGY

ICO00099

Hypoglycemic effects of *Enhydra fluctuans* aerial extracts on alloxan-induced diabetic rats

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ABSTRACT

Enhydra fluctuans is one of the medicinal plants of the Minangkabau tribe, West Sumatra, Indonesia which is widely used by the community to treat various diseases including fever, ulcers, and blood glucose-lowering agents. However, scientific studying of its efficacy in reducing blood glucose is very limited. In this study, we evaluated the effect of *E. fluctuans* aerial extracts on decreasing blood glucose using oral glucose tolerance test in diabetic rats. 25 diabetic rats were divided into five groups with five replications: negative control, positive control (glibenclamide), ethanol extract dosage of 250, 500, and 1000 mg/kg BW. Blood glucose is measured at 0, 30, 60, 120, and 180 minutes. After that, the percentage of blood glucose reduction, and the area under the curve (AUC) are calculated.The blood glucose profile of diabetic rats was different from negative control treatments. The percentage decrease in blood glucose by administering a dosage of 500 mg/kg.BW at the 60th minute was significant ($p<0.05$) compared to other treatments. The AUC value of the treatment dose of 500 mg/ kg.BW was also significantly different ($p<0.05$). Glibenclamide was used as a reference showed a similar hypoglycemic effect to the tested extracts at a dose of 0,45 mg/kg BW at the 120th and 180th minutes. Our work results show that *E. fluctuans* aerial extract has the activity to reduce blood glucose and makes it feasible for natural compound sourcing for diabetes mellitus treatment.

Keywords: Hypoglycemic effect, *Enhydra fluctuans*, Alloxan, Diabetes, Blood glucose

ICO00089

SEM Morphology, porosity, swelling and hardness test of foam from dried albumin – gambier tannins

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ABSTRACT

Phenolic foam is a product of natural albumin made from gambier tannin, water, and other additional substances.The interaction of albumin and tannin polyphenols can be considerd as complex formations because of secondary bonds that exist between them. Albumin-based foam is produced by a high-speed mixing system, therefore obtaining a homogeneous emulsion of gas dispersion in the oven-dried liquid. The aim of this study was to examine the morphological structure, porosity, swelling, and hardness of a foam made from several concentrations of dried albumin mixed with gambier tannins. The results showed that there were large, small, regular and cracked pore structures, with an average porosity of 73.16%, swelling of 63,55%, and hardness of 22.09 (N / cm2) depending on albumin concentration used.

Keywords:Foam, tannin, albumin

ICO00331

ANTAGONISTIC TEST OF SIDEROPHORE PRODUCING FLUORESCENT PSEUDOMONAD AGAINST *Ralstonia solanacearum* CAUSES PATCHOULI WILT DISEASE

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ABSTRACT

Fluorescent pseudomonad are a group of microorganisms that live around the roots of plants. Fluorescent pseudomonad can produce siderophores, which are antimicrobial compounds that act as biocontrol agents for plant diseases. Bacterial wilt disease caused by *Ralstonia solanacearum* is a major problem in patchouli plant. The aim of this study was to examine the antagonist activity of siderophore producing fluorescent pseudomonad against *R. solanacearum* which causes patchouli wilt disease. This research is an experimental study, using a completely randomized design (CRD) with 7 treatments and 3 replications. Those treatments were various fluorescent pseudomonad isolates, namely PfPj1, PfPj2, PfCas, PfCas3, PfKd7, LAHP2, PfPb1. Research observations were in the form of inhibition zone diameter. The resulting data were analyzed using the ANOVA test and the DNMRT further test with a significant level of 5%. The results showed that all siderophore producing fluorescent pseudomonad isolates could inhibit the growth of R. solanacearum which causes patchouli wilt disease. The largest diameter of the inhibition zone was produced by the fluorescent pseudomonad LAHP2 isolate, which is 10.61 mm and the smallest was produced by the fluorescent pseudomonad PfPj2isolate, which is 3.94 mm.

Keywords: fluorescent pseudomonad,siderophore, *Ralstonia solanacearum*

ICO00084

Phytochemical analysis and antifungi activity of methanol extract of *Acalypha hispida* flower against the growth *Candida albicans* fungi

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ABSTRACT

Candida albicans is an opportunistic pathogenic yeast that causes the infection candidiasis. *Acalypha hispida* is one of the plants that has a potential for antifungal activity. This research aims to determine the phytochemical analysis and antifungi activity of methanol extract of *A. hispida* flower against the growth of *C. albicans*. This study used the disk-diffusion agar method by utilizing the paper disc. This research is made up of six treatments, which are positive control (ketoconazole) and methanol extract concentration of *A. hispida* by 0, 0.4, 0.6, 0.8, and 1.0 g/mL. The results of the study showed that the concentration of methanol extract of *A. hispida* offers an antifungal activity against the growth of *C. albicans*. Methanol extract of *A. hispida* flower contains alkaloids, flavonoids, terpenoids and fenols,

Keywords: phytochemical analysis, antifungi, *Acalypha hispida*, *Candida albicans*

Group: 02_CHEMISTRY

ICO00074

Functionalization Of Carrageenan For Rapid Naked-Eye Colorimetric Detection Of Iron(II) Ions In Water

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ABSTRACT

Rapid colorimetric detection provides a simple and easy procedure for daily routine monitoring. Colorimetric detection of metal ions utilizes the optical properties of metal ions by complex formation. Iron(II) ions make stable cationic complexes with phenanthroline. The specific color of complexes is orange-red. Carrageenan modified into beads to produced rapid colorimetric detection without leaching. The result showed the color change from ivory to orange-red. The carrageenan beads optimized condition and tested interference for selective rapid colorimetric detection results. It visualized by naked-eye and UV-Vis Spectrophotometer. The optimum conditions of rapid colorimetric detection obtained maximum wavelength of 510 nm, immobilization of phenanthroline was found for 11,46 mg g-1 beads, pH of solution ion Fe(II) was found 2 and stabilization of the rapid colorimetric detection was found 15 minutes. The result of interference testing showed some other metal ions affecting rapid colorimetric detection.

Keywords:rapid colorimetric, naked-eye, carrageenan, iron

ICO00255

Green Preparation of Activated Carbon from Palm Kernel Shell by Microwave Assisted Activation

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ABSTRACT

Activated carbon from palm kernel shell has been prepared by using microwave assisted activation.Carbonization was conducted at mild condition of 400ºC for 90 minutes heating time. Microwave irradiation 300 Watt for 2 minutes increases the carbon iodine number from 452.4021 mg/gup to829.4040 which is higher than SNI 06-3730-1995 requirement of750 mg/g for activated carbon. FTIR spectra results show that activated carbon has -OH groups at wave numbers of 3000-3500 cm^{-1}, C = C at wave numbers of 1550-1650 cm^{-1}, C-O at wave numbers of 1000-1260 cm^{-1} and C-H at wave numbers of 810-770 cm^{-1}. Adsorption test results showed that the prepared activated carbon was able to absorbPb^{+2} ion at the optimum concentration of 80 mg/L. Adsorption isotherm study conducted byFreundlich equation produces a regression coefficient R^2 = 0.8998 with a maximum adsorption capacity of 9.7505 mg/ g.

***Keywords*:**activated carbon, microwave, green chemistry, adsorbent, palm kernel shell

ICO00260

OPTIMIZATION OF NITRATE AND NITRITE ANIONS ADSORPTION ON MODIFIED SILICA USING BATCH METHOD

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ABSTRACT

Ammonia inorganic compounds are compounds that are often found because it is soluble in ground water which causes health hazards that are carcinogenic, mutagenic, tetratogenic, and cause metamoglobinemia. Ammonia compounds that have negative effects on humans are nitrate and nitrite anions. Disposal of liquid waste and the use of fertilizers cause nitrates and nitrites to dissolve so that it has a negative impact on groundwater. One of the efforts to overcome nitrate and nitrite in waste is by absorbing with adsorbent, where the adsorbent used is DMA modified silica. Characterization by scanning electron microscopy, infrared spectrum, adsorption of nitrites and nitrates from aqueous solutions at various pH, concentrations, and contact times. The results showed that silica modification with DMA increased the adsorption capacity of nitrates and nitrites.

Keywords:Adsoprtion**,** Silica, Nitrate, Nitrite, Batch Method

ICO00274

THE PRODUCTION OF SUTHA HAND SANITIZER AS AWARENESS ACTION DURING COVID-19 OUTBREAK

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ABSTRACT

The production of Sutha Hand Sanitizer in UIN Sulthan Thaha Saifuddin Jambi was carried out to prevent SARS-Cov-2 from being deployed in this area. This study aimed to initiate a social care action to always do good in the pandemic era for increasing the performance of work. This action was also expanded to local society in order to help them in the absence of a hand sanitizer. The data collected was obtained using community development approach. The results of this study were: (1) two products of Sutha Hand Sanitizer, such as from *Aloe vera* and WHO standard, were produced; (2) the products were distributed to Civitas academica of UIN Sulthan Thaha Saifuddin Jambi and the local society. This activity is one of the solutions for the lack of a hand sanitizer in markets due to panic buying phenomena in the early days of the pandemic. This study could be continued to the further research.

Keywords: Community development, Covid-19 pandemic, Sutha hand sanitizer

ICO00211

The potential of *Cinnamomum parthenoxylon* root extract as a biopesticide against termite and wood-rotting fungi

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ABSTRACT

Cinnamomum parthenoxylon is widely distributed in South-Eastern Asia. The wood is used for general construction and furniture materials. It is resistant to insect attacks because of its persistent smell.In this study, the antitermite and antifungal activity of *Cinnamomum parthenoxylon*root*n*-hexane and methanol fractions against *Coptotermes curvignathus*and wood-rotting fungi (*Trametes versicolor*and*Fomitopsis palustris*)were investigated in a laboratory test. A no-choice test was employedfor determining antitermite activity and antifungal activity using the agar media assay. The results showed that *n*-hexane and methanol fractions at concentrations tested were reduced the survival of termite and as well as exhibited significant inhibition of fungal growth compares to the corresponding control. The termiticidal activity, antifungal activity, and GC-MS profiling of root fractions will be discussed in this conference.

Keywords: *Cinnamomum parthenoxylon*, termiticidal activity, GC-MS, fungicidal.

Group: 03_MATHEMATICS – STATISTICS

ICO00228

Stability analysis and numerical simulation of diffusive prey predator Holling type II model

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ABSTRACT

The prey predator interaction is fundamental and important process in a population dynamic. In this paper, a diffusive prey predator holling type II model considering limitation of the prey growth is presented. The model consists two distinct population. Model is a nonlinear system of partial differential equations which is a initial boundary value problem. The behaviour solution of the model was analyzed by analyzing stability of the critical point. In solving this sytem, we use Homogeneus Neumann boundary conditions. Numerical solution was determined by using finite difference method. The results show that the diffusive model illustrates a spreading population over a limited area.

Keywords:Population dynamic. Diffusive model. Stabilty. Neumann boundary conditions. Finite difference method.

ICO00162

ANALISIS PENYEBARAN PENYAKIT PANDEMICOVID-19 DI INDONESIA DENGAN PEMODELAN SEIR ORDER FRAKSIONAL

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ABSTRACT

In this study we analyze the Spread of Covid-19 Pandemic Disease in Indonesia using Fractional SEIR Model. This mathematical model is in the form of a dynamic system consisting of nonlinear fractional differential equations. These equations represent compartments with certain health conditions that are considered to have a significant influence in the development of Covid-19 infectious diseases. This dynamical system is transformed numericallyby using a modification of the Euler method and also a mathematicalprogramwith Python software.The numerical results obtained for the prediction of the development of infectious diseases Covid-19 with respect to the time for the value of parameter b is the rate of birth and death, β is the transmission of the disease, σ is the incubation rate, μ is the cure rate and q the level of treatment.

Keyword: Fractional SEIR model, dynamic system *Euler's method*and*softwarePhyton*

ICO00178

Dynamics of Predator-Prey Model Interaction with Intraspecific Competition

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ABSTRACT

In this paper, we have formulated and studied a dynamic predator-prey model. We have formulated intraspecific competition of predators. Holling type I and Holling type II response function have been used for the consumption of prey by two predators respectively. We have analyzed the positivity of solutions, existence of equilibria, and stability of the proposed system around these equilibrium points. Condition for local stability was obtained by eigenvalue approach and Routh-Hurwitz Criterion. Finally, some numerical simulation have been presented to investigate the dynamic of the system.

Keywords: Predator-prey; Intraspecific; Routh-Hurwitz Criterion.

ICO00265

Implementation of Arc Flow Model in Capacitated Multi-Period Cutting Stock Problem with Pattern Set Up Cost to Minimize The Trim Loss

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ABSTRACT

Two-dimensional Cutting Stock Problem (CSP) is a problem in cutting raw materials where the trim loss is on two sides, namely the width and length sides. This research implemented the Arc Flow model in capacitated multi-period with set up cost to minimize the trim loss in cutting of paper. The cutting patternsweregenerated by the Pattern Generation (PG) algorithm. Furthermore, it was formulated to a linear Arc Flow model where the constraints indicated the number of demands per item. The solution of the model was completed using the LINGO.13 application. The optimal solution of the Arc Flow model showed that the quantity demands for the second and third types of items were fulfilled. The maximum amount of inventory contained in the second type of item for the second period was 132517 sheets. Excess inventory will become a surplus. Based on the arc flow model solution it turned out that no trim loss was produced or in other words trim loss is equal to zero.

Keywords:Cutting Stock Problem, Arc Flow, Pattern Set Up

Group: 04_EDUCATION 1

ICO00298

Correlation between Learning style and achievement in Physics Learning

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ABSTRACT

Many factors affect student learning outcomes, one of the factors is learning style. Every child has their own way of learning, different ways of learning cause different learning outcomes. This study aims to determine the relationship between learning styles and student learning outcomes in physics subjects. The total population in this study were all students of class XI at Unsyiah Laboratory High School, totaling 200 students, while the research sample was 30 students. This research is included in the type of correlation research. Data collection techniques using questionnaires and documentation. Questionnaires are used to obtain learning style variables, while documentation is used to obtain learning outcomes variables. The data analysis technique used the product moment correlation technique (r). The results of the data analysis show there is a correlation at the significant level of 5%, based on these results it can be concluded that there is a positive and significant relationship between learning styles and student learning outcomes in physics subject for class XI at at Unsyiah Laboratory High School. In addition, the results of the study also showed that the greatest contribution of learning styles to learning outcomes was in analytic and holistic learning styles

Keywords : -

ICO00297

Impact of Project Based Learning on Students' Creative Thinking Skills and Learning Outcomes

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ABSTRACT

The purpose of the study was to determine the effect of the application of Project-Based Learning (PjBL) on creative thinking skills and student learning outcomes on vibrations and waves. The approach and design used were Quasi-Experimental and the one-group posttest-pretest. A purposive sampling technique has been used to select 2 classes of research samples, namely class VIII-A (control) and VIII-B (experiment) high school students. Data collection of creative thinking skills (CTS) and student learning outcomes (LO) using a test instrument in the form of multiple-choice questions developed by the researcher. The data analysis used the normalized N-gain score formula and the percentage formula. The results of data analysis indicate that the PjBL learning model can improve the CTS of the experimental class students with a high category compared to the control class. Student learning outcomes through the PjBL learning model shows better than through non-PjBL. The conclusion of this study is that the PjBL model can improve creative thinking skills and student learning outcomes.

Keywords **: -**

ICO00109

Need Analysis for Physics E-Module Based on Creative Problem Solving Integrated 21st Century Skills

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ABSTRACT

The 21st century has brought great changes in education process. Online learning is an alternative in the 21st century. Teachers are expected to be able to adapt to these changes, by developing teaching materials that are interactive, interesting, and can be accessed at any time. In addition, the development of teaching materials needs to pay attention to the skills needed by students today. This research is the initial part of development research. The purpose of this study is to determine the need for teaching materials that are appropriate for the 21st century. Through student analysis, curriculum analysis, and material analysis for physical learning, information is obtained that it is necessary to develop teaching materials in the form of integrated e-module of Creative Problem Solving models in order to achieve 21st century skills

Keywords:need analysis, CPS, E-Module, 21st century, Skill

ICO00335

Achievement of Students' Concept Mastery through Concept-based Learning and Drill Methods in Biology Instructional Methodology Course

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ABSTRACT

This research aims to determine the achievement of students' conceptual mastery in the Biology Instructional Methodology course through concept-based learning and drill methods. Data were collected using post-test questions to 40 biology teacher candidate students. This research is part of previous research, namely research on the development of a concept-based learning model and a drill method. Based on the data that has been collected and analysed, it is known that the achievement of student concept mastery is in the very satisfactory (C +) category with an average score of 64.90.

Keywords : *-*

ICO00051

EDUCATIVE WEBSITE DEVELOPMENT IN MICROBIOLOGY MATERIALS WITH THE QUR'AN INSIGHT

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ABSTRACT

The main problem in this study is that most students do not understand microbiology material, due to the lack of references used in lectures. IAIN Batusangkar already has adequate network and software facilities to support IT based learning. However, these facilities have not been used optimally in getting information to inprove the quality of microbiology lectures, whose material is also developing rapidly as technology develops. Educative website is a learning media that can be used as a reference in lectures, in addition to obtaining actual information, students also gain insight into the interpretation of the verses of the Qur'an relating to the subject matter of lectures. The purpose of this research is to see the validity and practicality of educative website in microbiology courses with Qur'anic insight. This type of research is research and development, the development model used is a 4-D development model. The data collection instruments in this study were the validity sheet of the website and the website practicality questionnaire sheet. The validity and practicality of the website are analized by calculating the percentage. The result of the study stated that the al-Qur'an oriented eductive website that was developed was valid with a percentage of 79.28 % and very practical with a percentage of 86.91 % assessment by students and a percentage of 77.58% by Microbiology lecturers.

Keywords: Educative Website, Microbiology

Group: 05_EDUCATION 2

ICO00218

Practicality of Realistic Mathematics Education Based Learning Design of Linear Programming

(For Financial Accounting Major in Vocational High School)

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ABSTRACT

This study discusses the practicality of Realistic Mathematics Education based learning design of linear programming for financial accounting and major in Xth grade vocational high schools. The research method used is qualitative research. This article discusses the practicality of learning design in the one to one evaluation and small group evaluation. The subjects in this study were mathematics teachers and Xth grade students in financial accounting majors at SMKN 2 Padang. The instruments used were interview guidelines and practicality questionnaires. Descriptive techniques are used to describe data from interviews. The practicality questionnaire of learning design is described by data frequency analysis techniques using the formula proposed by Purwanto. The results of the teacher's questionnaire responses were 89.17% with a very practical category. The results of the student response questionnaire were 77.79% with the practical category. Based on the results of interviews and questionnaires show that the learning design developed has been practically used both for teachers and students in learning linear programming.

Keywords:Linear Programming, RME, Practicality.

ICO00103

Scaffolding Based Learning: Strategies for Developing Reflective Thinking Skills

(Case Studies on Random Variable Material in Mathematics Statistics Courses)

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Abstract

Scaffolding is a learning model by providing assistance based on student difficulties. The purpose of this study is to describe the application of scaffolding-based learning to support students' reflective thinking skills in mathematics statistics courses. Research subjects were 43 5th semester students of mathematics education study programs. This type of research is a qualitative descriptive study with three research procedures carried out, namely: 1) a preliminary study, 2) planning, and 3) implementation. The instruments used were lecturer activity observation sheets and student activity observation sheets. The results showed that the components of scaffolding-based learning can be used to support students' reflective thinking skills in this case in learning mathematics statistics. Explaining and reviewing play a role in shaping pre-reflective situations, restructuring in shaping refective situations, and developing conceptual thinking play a role in shaping post-reflective situations.

Keywords:Scaffolding, Reflective Thinking, Mathematics Learning

ICO00111

Defragmentation of Preservice Teacher's Thinking Structures in Solving Higher Order Mathematics Problem

(**Research Subtitle**; maximum 14 words; written in English; font Palatino Linotype; size 10; one space; Center alignment; attract readers and convey main findings of research)

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ABSTRACT

Demands to have higher order thinking skills is not only aimed for the students. A teachers must have that skills first.The problem now is the lack of preservice teacher's competence in solving mathematics problem with high order thinking skills. This study aims to find out the construction errors and problem solving by preservice teacher when solving problem with high order thinking skills, especially on trigonometry material. In order to repair these errors, a defragmentation process is carries out on their stucture of thought. The qualitative research methods applied to describe thinking structures and the form of defragmentation given. The research data were analyzed using Miles and Huberman's model of data analysis, namely reducing data, presenting data and making conclutions. The research found that there are three forms of concept's construction errors and solving problem, they are wrong pseudo, mis-logical construction and hole of construction. Based on the findings of errors, the researcher performs a defragmentation process of thinking structure by providing scaffolding. The form of scaffolding given were giving a recommendation to rechecking, recall existing schemes fo assimilation, and explaining the actual logics.

Keywords: Defragmentation, thinking structures, mathematics learning, high order thingking skills, trigonometry.

ICO00110

DEVELOPMENT OF 3D ANIMATED VIDEO ON MATHEMATICS LEARNING IN PRIMARY SCHOOLS

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ABSTRACT

The background of this research is due to the limited learning media in the form of 3D animated videos for Mathematics. This study aims to develop a 3D animation video on the operation of the addition and subtraction of integers in elementary schools. The development model used is the DDD-E model. Furthermore, the 3D animated video developed was validated twice by the material validator and the media validator. After the product was revised according to the validator's suggestions and input, the average validation value was 94.65%. These results indicate that the 3D animated video developed is in very valid criteria. Next, the product was tested on a small scale to 16 elementary school students, to find out the attractiveness of the video. The results obtained were 86.28% for attractiveness and 92.86% for practicality.

Keywords: 3D animation video, mathematics learning

ICO00182

The impact of an exploratory approach in teaching mathematics to students' creative thinking abilities

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ABSTRACT

The purpose of this study is to determine the impact of an exploratory approach on the creative thinking abilities of Junior High School students in Bengkulu City. This type of research is experimental research with Posttest-Only Control Group Design. The research sample is 87 students of 8th grade at SMPN 1, SMPN 11, and MTs Ja-Al Haq in the second semester of 2019/2020 Academic Year. Based on the Kruskal_Wallis H. test, the asymp value is 0.00 smaller than 0.05, so there is differences in students' creative thinking abilities, which is taught by using an exploration approach to teaching mathematics in high, middle and lower level schools. The average value of students' creative thinking skills from each school level is as follows: upper level school is 63.34; middle level schools is 59.38, and lower level school is 49.27. The ability to think creatively High School Junior high level students better than lower school students. The ability to think creatively of middle level Junior High School students is better than lower level school students. However, based on the Mann-Whitney test, a significance value of 0.489 is greater than 0.05 between the ablitiy of the creative thinking of high school students and middle school students. So, there is no difference in the ability to think creatively High School Junior high school students with middle school students.

Keywords: Exploration approach, creative thinking.

Group: 06_PHYSICS – AST

ICO00248

The Dynamics of rainfall and temperature on peatland in South Sumatera during the 2019 extreme dry season

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ABSTRACT

During the extreme dry season of 2019 massive fires broke out on peatlands in South Sumatera. This study examines the dynamics of rainfall and temperature in the peatlands of South Sumatra in the 2019 dry season as one of the fire disaster mitigation efforts. The data used are in situ measurement data by the Peatland Restoration Agency's measurement stations on two peatlands in South Sumatra. The results of this study indicate that rainfall in July until October 2019 was very minimal even in one of the study sites in August there was no rain. This shows that rainfall anomaly has occurred along with massive fires so that rainfall is possible to be used as one of the fire control parameters in peatlands. The lack of rainfall in South Sumatra during this period was due to the positive Indian Ocean Dipole phenomenon that occurred in the Indian Ocean. The results of this study also showed that temperature did not have a clear pattern of relationship with fire events on peatlands.

Keywords **: -**.

ICO00289

Online Learning Quality at Islamic Universities of Sulthan Thaha Saifuddin JambiBased on Students' Perception

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ABSTRACT

During the COVID-19 outbreak, all implementation of learning from elementary school to higher education level was forced to migrate from traditional face-to-face learning to online learning. This study aims to analyze the effectiveness of the implementation of online learning at the Islamic State University of Sulthan Thaha Saifuddin Jambi using variance-based structural equation modeling (SEM with PLS). Two hundred and fifty students, consisting of one hundred and fifty Non STEAM students and one hundred STEAM students, participated in this study. The findings indicate that the interaction of lecturers and students is the main factor affecting the quality of online learning. Additionally, flexibility and quality of learning content also affect the quality of online learning. Interaction between students has no significant effect on the quality of online learning

Keywords: online learning, structural equation modelling, teacher-students' interaction, students-students interaction, content quality, learning flexibility

ICO00093

Stability analysis of Single-Brane with Gauss-Bonnet Term in a Bulk

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ABSTRACT

We study single-brane 4 + n dimensions which is embedded in bulk 5 + n dimensions with scalar field and Gauss Bonnet terms in bulk.The brane field equation is obtained by performing a bulk field projection by using the Gauss-Codazzi equation. The Einstein brane field equation is formed into the standard Einstein field equation in the Theory of general relativity with additional terms Gauss Bonnet and extra terms. Furthermore cosmological application obtained by reviewing brane's spacetime is homogeneous and isotropic. FRW metric is taken with two scale factors that are internal dimensions and external dimensions which have a relationship $b(t)=a(t)^\\gamma$.Finally, a dynamic analysis is performed to determine the stability of this model by taking the case of the absence of extra terms.

Keywords:braneworld, dynamical system, Gauss-Bonnet, universal extra dimensions.

ICO00094

Simple Design Of Control Motor AC For Rotary Forcespinning

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ABSTRACT

The use of rotary forcespinning in the manufacture of nano fibers should receive special attention because of its ability to produce fibers with high production speeds and can be applied to materials that facilitate the utilization of melt. To produce fiber, the forcing technique utilizes centrifugal force obtained from high-speed, high-torque motor changes. AC motor is one of the choices in meeting the needs for making fiber using the system. Large torque and maximum rotation speed of the motor, provide answers to the needs of the rotary force pinning system. However, behind the advantages of the motor, controlling the rotation speed of the motor becomes a problem that needs to be fixed. A simple system to regulate an AC motor using a microcontroller system and an AC dimmer circuit that uses an AC system that goes into the motor that has been built. The results obtained show that a simple system design can be obtained on an AC motor with good linearity, while the error value obtained is still high and needs further refinement.

Keywords: rotary forcespinning, nano fibers, high-speed, AC motor, error value.

ICO00023

A Preliminary Study : The Urgency of STEM-Based Science Practicum Book for Secondary School

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ABSTRACT

The reseacrh purpose is to analyze the needs of Science Technology Engineering and Mathematic (STEM)-based science practicum books for secondary school. This is descriptive qualitative research with quetionnare and interview methods. The sample of this research were secondary school science teacher and students. The data were analyzed decriptively with the results of data processing in percent (%). The results showed that 98% of secondary school science teachers did not know that STEM-based practicum activities could train 21st century students' skills and 90% of secondary school students stated that they never carried out practicum activities other than laboratory activities. The results also shows that 75% of students do not have science practicum book and only have worksheets provided when carrying out practicum activities. Furthermore, the results of the study also showed that 70% of students stated that practicum activities were not discussed deeply when they entered the class. It can be concluded that there is an urgency to develop a STEM-based science practicum book to that can practice students' 21st century skills in facing the era of the industrial revolution 4.0.

Keywords:STEM-Based Science Practicum Books, 21st Century Skills, Secondary School

Group: 08_BIOLOGY

ICO00014

Antimicrobial activity of endophytic fungi from Andalas (Morus macroura Miq.) plant.

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ABSTRACT

Many of recent study were conducted to find and investigate new antimicrobial substance to overcome the bacterial resistance problem. We can explore antimicrobial substance from medicine plant including Andalas (Morus macrouraMiq.), but the status of this plant is endangered. So, we can use endophytic fungi from this plant since they were known have the ability to produce similar antimicrobial compound. The aim of this study is to find some endophytic fungi from Andalas plant that have the ability to inhibit pathogen growth. Part (roots and leaves) of Andalas plant sample was collectedatAndaleh village, Tanah Datardistrict, West Sumatera.Part of plant surface sterilization was using NaOCl 0.5%. Isolation of endophytic fungi from Andalehplant was using PDA containingChloramphenichol 500mg/l. Antimicrobial activity assay was conducted by agar dilution method. This study using 3 microbial agents i.e. Escherichia coli, Staphylococcus aureus and Candida albicans. We found 19 pure isolates of endophytic fungi from roots sample meanwhile 9 pure isolates from leaves. The morphology of endophytic fungi from roots were differ from those find from leaves. Mostof those endophytic fungi (24 of 28 isolates) have the ability to inhibit E.coli and S. aureus growth, but none of them have the same ability to inhibit C. albicans. The highestaverage inhibition zone against E. coli was 47.1 mm and 51.7 mm against S. aureus. Meanwhile the lowest average inhibition zone against E.coli andS. aureus was 13.6 mm. Based on this study, we can conclude that endophytic fungi from Andalas plant are potential source to develop antimicrobial agent.

Keywords **:** Andalehplant, antimicrobial activity, endophytic fungi.

ICO00008

Isolation and Characteristics of Inulase producing Bacteria from rhizosphere of *Dahlia hybrida* Hort.

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ABSTRACT

The Inulinase enzyme was widely used in industrial sector. The function of this enzyme is hydrolyzing inulin to fructose. The use of fructose as a food or beverage sweetener is more beneficial than sucrose. This enzyme was produced by plants containing inulin and microorganism. The ability of bacteria to produce inulinase is more effective and efficient because it is able to live in an extreme environment and is easily manipulated genetically. The purpose of this study was to isolate and determine the characteristics of *Dahlia hybrida* Hort's rhizosphere inulinase producing bacteria. In the present study, the extracted inulin and Isolated Bacteria were identified by using morphologhical and molecular approaches. The DNA and 16s rRNA was isolated from the Bacteria. In total four type of isolates Bacteria and grouped to gram negative with bacillus shaped cells are found. While every types of isolates have different in morphological of colony as following: Isolates LK1 with irregular shape of morphology and edge of colony, isolates LK2 with round shape and flat edge, LK3 with roots shape and branch-shaped edge, and LK4 with round shape and flat edge.

Keywords: Inulase, Inulin, Bacteria, Fructose, *Dahlia hybrida*

ICO00258

Microhabitat of Leptophryne borbonica and its calling behavior (Tschudi, 1838) in Sumatera Barat

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ABSTRACT

We surveyed the microhabitat of Hourglass toad in various elevations. We found that this species distributed in various microhabitat including rocky river, small stream with middle current level, very small stream with little water. Small number of individuals were observed far away from water bodies. Interestingly, males emitted calls near the heavy water flows creating very noise back sound. It might suggest the behavior to hide from predator's detection through the sound.

Keywords:Anurans, habitat, calling site, highland, lowland

ICO00285

Population density of *Tor tambra* Fish in Batang GadisRiver Mandailing Natal North Sumatra

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ABSTRACT

Tor tambra Fish is a freshwater fish commodity with a high economic level, therefore people take the fish continuously. There has not been any cultivation of Tor tambra fish from the Batang Gadis riverMandailing Natal. This study aims to determine the population density of Tor tambra fish and physico-chemical factors in the Batang Gadis river. This type of research is descriptive. The research location was determined using purposive random sampling at every 4 (four) stations. In each sampling, 3 (three) replications were carried out. The results showed that the population density of Tor tambra in the Batang Gadis riverMandailing Natal was 0.04 per unit area. The physical quality of water in the Batang Gadis river is still quite good as a place to live for fish, namely with an average temperature of 24, 25 0C, pH 5.22, DO 5.50, BOD 2.77, depth 30-200 cm, current 0.05 -0.1 m / sec

Keywords : -

Group: 09_CHEMISTRY – AST

ICO00175

The Implication of the Human-Organization Technology (HOT) -Fit Framework on the Digitalization of Sharia Banking in Indonesia

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ABSTRACT

The purpose of this research was to be able to empirically prove the HOT-FIT framework by seeing the relationship between indicators in the "HOT-FIT (Human, Organization and Technology)" framework on the use of digitalization that Sharia banking has in Indonesia. This study used primary data collected by questionnaires distributed through Twitter and WAGS that managed by researchers involving a sample of 145 respondents from users of digitalization of Sharia banking in Indonesia. The sampling method was the number of indicators multiplied by 5 (five) according to the Hair Technique. The data analysis method was carried out using the SEM approach, because the first objective of the study was to test the theory,then the analysis technique used Covariance-based SEM (covariance based SEM), that is the SEM approach using Smart PLS 3. The results of this study found that the variable system quality has an influence on the system use and user satisfaction variables, while the information quality variable has no effect on the system use and user satisfaction variables, but the service quality variable does not have an influence on the system use variable but has an influence on the user satisfaction variable. System Use variables, User Satisfaction, Environment and Structure have an influence on the Net Benefits variable. The results of this study were expected to become the foundation for organizations, especially Sharia banking, in determining policies related to the development of a digitalized system in the future.

Keywords: HOT-FIT Model, Digitalization, Sharia Bank, Indonesia.

ICO00235

Design and Analysis Security Architecture Virtualization OpenVz

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ABSTRACT

OpenVZ is a capsule-based virtualization technology for OS Linux which is allows administrators deploying multiple Operating Systems with differents virtual hardware spesification, called containers,virtual environments or Virtual Private Servers. In this paper, we propose new security architecture for OpenVZ depend on type of attacks that commonly happen in servers . This security technic called OpenVzSec. Server is attacked by client using OS windows and Ubuntu OS which is equipped with attacker code program based on python language. Type of attacks used in this research : SSH vulnerability, SYN Flood attacks, Attack on the Rootkit vulnerability, and checksum spoofing. Some server attacks on server and containers able to detected and anticipate by OpenVZSec. The OpenVZSec security model does not decrease perfomance of the server.

Keywords:Virtualization, OpenVZ, Security Server, Virtual Private Servers, Server attack

ICO00263

Very Low-Frequency/Low-Frequency Receiver For Monitoring in The Low Ionosphere Layer

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ABSTRACT

The Ionosphere layer can affect the propagation of radio from one area to a very far area in the Earth and between satellite to the receiver. Every ionosphere layer has different characteristics and the presence of the ionosphere changes every day according to solar activity. The D layer is the innermost ionosphere layer, 60 - 95 km above the surface of the Earth. Observation of the D layer cannot be carried out by balloon, ionosonde, and satellite due to very low so it is very few observations and continuous observations are difficult. Signal VLF/LF can travel very far about hundreds to thousands of kilometers from the transmitter with repeated reflections between the earth and the ionosphere known as the Earth-Ionosphere Wave Guide (EIWG). VLF/LF receiver is an instrument for observing changes in the low ionosphere layer. This paper will focus to monitor disturbance ionosphere from solar activity.

Keywords: VLF/LF Receiver, The D Ionosphere layer, Disturbance Ionosphere

ICO00259

ANTI-INFLAMMATORY ACTIVITY OF ETHANOL EXTRACT OF SUNGKAI LEAF (*Peronema canescens* JACK) IN CARRAGEENAN-INDUCED MALE MICE

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ABSTRACT

Anti-inflammatory compounds play a role in suppressing/reducing inflammation by inhibiting the formation of prostaglandin mediators, inhibiting the migration of leukocyte cells to the inflammatory area and inhibiting the release of prostaglandins from the cells where they are located. Several plant-derived compounds that can act as anti-inflammatory candidates are flavonoids, saponins, alkaloids, and phenols. The study aimed to determine the anti-inflammatory activity of the ethanol extract of sungkai leaves and to determine the effect of the concentration given on the level of anti-inflammatory activity. The method used was the formation of granuloma pockets and edema on the back of mice by induced subcutaneous 2% carrageenan, divided into 5 treatment groups; negative control (vaseline flavum), positive control (hydrocortisone acetate 2.5%) and ethanol extract of sungkai leaves with various concentrations of 5%, 10%, and 15% respectively, by looking at the volume of exudate, the percentage of inflammation inhibition and the number of differential leukocyte cells. The results of the anti-inflammatory activity showed that the ethanol extract of sungkai leaves had a significant effect on the average exudate volume and the percentage of inflammation inhibition. At a concentration of 15%, the extract was able to reduce exudate volume by 46.67 ± 5.506 µl and inflammation inhibition by 87.78%. Also, the ethanol extract of sungkai leaves significantly affected lymphocytes, stem neutrophils, and segment neutrophils, but did not significantly affect the number of monocyte cells. At a concentration of 15% the ethanol extract of sungkai leaves showed the smallest number of leukocyte cell types, 50.11 ± 2.389 lymphocyte cells; stem neutrophil cells 10.44 ± 0.475; segmented neutrophil cells 19.78 ± 0.596 and monocyte cells 2.0 ± 0.236. It can be concluded that the ethanol extract of sungkai leaves has anti-inflammatory activity but has not approached the effect of anti-inflammatory drugs in general.

***Keywords**:* Sungkai, Anti-Inflamasi

SESSION 4

Group 01_BIOLOGY

ICO00341

Anatomical and Energy Characteristics of Invasive Species Wood *Melastoma malabathricum*, L and *Calliandra callothyrsus*, Meissn

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ABSTRACT

The presence of invasive species is often seen as environmental and economic problem. In the other hand, the potential of these species which have fast growing and regeneration ability can be use for a couple interest like alternative bioenergy utilization. This study is aimed to observe the wood anatomical and energy characteristics of invasive species Melastomamalabathricum, L danCalliandracallothyrsus, Meissn. This research is analyzed descriptively for anatomy characteristic, calorific value, ash and moisture content. Anatomical characteristic of wood from two species are diffuse porousvesel, solitary and multiple vesel, frequency of vesel rare to many and diameter of vesel small to rather small and paratracheal axial parenchyma. Rays uniseriate or biseriate with 1-3 seriate, height of rays category is extremely short and width rays is narrow to extremely narrow. All rays ishomorocelular with upright or procumbent cells. The calorific value of these species start form 3887,59 to 4132,99 kal/gr. Ash content start from 1,27- 1,73 % meanwhile the moisture content are 11,6 – 12,6 %. Base on energy properties, Calliandracallothyrsus, Meissn fulfill the standard of bio pellet production base on SNI 8021 and EN- 14961-2.

Keywords:Invasive species, wood anatomy, calorific value, Melastoma malabathricum, L, Calliandra callothyrsus, Meissn

ICO00348

Stingless Bee Species and Current Condition of Stingless beekeeping in West Sumatra

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ABSTRACT

Stingless bees run the important role in ecological and economical aspects. People have been use the pollen, honey, and cerumen of stingless bees. A total of 13 species of stingless bee was identified from several area of bee keeping in West Sumatra during 2019 Stingless be expedition to know the species of stingless bee and the current condition of stingless beekeeping in this province. *Heterotrigona itama* was selected as the most popular species for beekeeping, followed by *Geniotrigona thoracica*and *Tetragonula laeviceps.* Several *Tetragonula* species was also selected by beekeeper i.e.*T. minangkabau, T. fuscobaelata* and *T. geissleri.* The number of colonies, duration of bee beekeeping, the methods of harvesting and other related conditions were discussed.

Keywords: Stingless beekeeping, Species, Current condition, West Sumatra.

ICO00010

COMPARISON OF NUTRITIONAL CONTAINERS OF KANGKUNG (*Ipomoea aquatica*) CULTIVATED HYDROPONIC AND NON HYDROPONIC

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ABSTRACT

Vitamins are complex organic compounds that are essential for growth and other biological functions of living things. The main source of vitamins is leafy green vegetables. Leaf green vegetables can be cultivated non-hydroponically and hydroponically. In vegetables there is beta-carotene which is the initial form of vitamin A so it is called pro vitamin A or provit A. In the body provitA functions as a strengthening of body tissues, helping the growth process and the visual process. Provit A contained in many vegetables berhij au leaves such as spinach . The objectives of this study were: To compare the nutritional content of kale vegetables cultivated hydroponically and non-hydroponically. This research was conducted at RumahKawat and the Biology laboratory of Padang State University in July 2020. This research is a descriptive study. The analyzes carried out in this study were: Vegetable moisture content, Vitamin C content by chromatography (HPLC) method.
Based on the research results, the nutritional content of water spinach cultivated non-hydroponically is higher than the nutritional content of water spinach cultivated hydroponically.

Keyword : water spinach, nutritional content, hydroponics, cultivation.

ICO00003

Optimization of Blood Serum Sample Volume in Enzymatic Measurement of Lactic Acid Levels Using a Nanofotometer

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ABSTRACT

Physical exercise is an activity that is carried out repeatedly and continuously. Excessive physical exercise will increase metabolism in the body. High anaerobic metabolism results in excessive accumulation of lactic acid. The method of measuring lactic acid in professional or non-professional sports practice is the lactic acid rapid test. However, this rapid test method has several drawbacks. The standard method in measuring lactic acid levels is the enzymatic method with the principle of spectrophotometric measurement. Nowadays nanofotometer technology can make it easier to measure the level of something. Where the volume of the reaction used becomes less. Therefore, enzymatic measurement of lactic acid levels using the nanofotometer principle requires optimization of the sample volume and the final reaction. Basically, enzymatic measurement requires optimum conditions. This study aims to determine the optimum volume of blood serum samples and final volume of reaction in enzymatic measurement of lactic acid levels using a nanofotometer. The research subjects consisted of 2 male students and 2 female students in swimming class, Sports Education Study Program, Faculty of Sport Science, Padang State University. Subjects did 200m of hypoxic exercise, then blood was collected for analysis of their lactic acid levels. The results showed that the optimum blood serum sample volume in enzymatically measuring lactic acid levels using a nanofotometer was a sample volume of 1.5 µL and the final volume of reaction was 12.5 µL. The results obtained are fast and standardized. In conclusion, enzymatically measuring lactic acid levels using a nanofotometer is effective and efficient for physical exercise.

Keywords: Optimization, Lactic Acid, Enzymatic, Nanophotometer

Group: 03_MATHEMATICS – STATISTICS

ICO00278

The Locating Chromatic Number of Disconnected Graph with Path and Double Stars Graph as Its Components

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ABSTRACT

Let $H(V,E)$ is a disconnected graph and c is a k-coloring of Hthen induced partition of$\prod = \{C_1, C_2, \dots, C_k\}$from $V(H)$, where C_i is the set of all vertices receiving color i. The color codes of a vertex$v \in V(H)$is the ordered k-tuple$(d(v,C_1), d(v,C_2), \dots, d(v,C_k))$where$d(v,C_i) = \min\{d(v,x|x \in C_i\}$and $d(v,C_i) < \infty$for $1 \le i \le k$. The coloring$c$is locating$k$-coloring of H if all vertices of H have distinct color codes. The locating-chromatic number of H, denoted by$\chi_L'(H)$, is the smallest k such that H admits a locating-coloring with k colors. In this paper, we study the locating-chromatic number of disconnected graph with path and double stars graph as its components.

Keywords:locating-chromatic number, disconnected graph, path graph, double stars graph.

ICO00180

Theoritical study of the concept tsunami wave differential equations using the leap frog scheme

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ABSTRACT

This study examines the basic theory of tsunami wave propagation models based on the completion of numerical based partial differential equation. The research objective is to obtain a tsunami wave propagation model through the completion of a numerical wave based differential equation using the leap frog scheme. The method used in this research is a basic exploration of shallow water wave equation through wave physics theory by considering influential parameters and then solved using numerical methods. Some parameters that influence are friction factor, depth and flux change in the tsunami wave propagation model.

Keywords: Partial Differential Equations, Numeric, Leap Frog Scheme.

ICO00192

ON EDGE MAGIC TOTAL LABELING OF CYCLE BOOKS B(5,2,3,n,2)

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ABSTRACT

Let$p$and $q$be the number of vertices and edges of a graph$G$respectively. An edge-magic total labeling of a graph$G$ is a bijectivefunction□: $V(G) \cup E(G) \rightarrow \{1, 2, 3, \dots, p+q\}$suchthat □$(x)$ + □(x, y) + □$(y) = k$,for any edge$(x, y) \in E(G)$. If□$(x) \in \{1,2, \dots, p\}$for any $x \in V(G)$, then□refers to a*super edge-magic total*labelingof$G$.An edge-magic total labeling of a graph G is a very importent subject in the information technology. It provides a lot of difficult problems.Therefore it can be used as basic knowledge to construct an uncrackable passwoord sharing. One of intersting research topic is super edge magic total labeling of cycle books. A cycle book$B(a, m, b, n, t)$is contructed from$m$copies cycle$C_a$and$n$copies cycle$C_b$with a commont pathP_t. It is an unsolved problems to determine a super edge-magic totallabeling of a cycle book$B(a, m, b, n, t)$ even for the case$a = b$. This article discusses a partial solution to this problem. We prove that a cycle book$B(5,2,3, n, 2)$has asuper edge-magic total labeling for any positive integer$n$.This result is proved by the theorem of Figueroa-Centeno, Ichishima, and Muntaner-Batle. In addition, we prove thata cycle book$B(5,2,3, n)$have an edge-magic total labelingfor$1 \leq n \leq 6$.

***Keywords**:* edge, magic, cycle, books, total, labeling

Group: 04_EDUCATION 1

ICO00077

Improved Understanding of Student Particle Dynamics Concepts Using basic Physics Modules Based on Concepts

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ABSTRACT

This study stems from the results of observations made by researchers who found that students had difficulty in drawing free diagrams in solving particle dynamics problems that indicated students did not understand the concept of dynamics correctly. Students have difficulty in changing information from one form to another. One of the students' understanding of the concept of Particle Dynamics is one of them caused by the lack of use of appropriate teaching materials in learning Particle Dynamics. This basic concept-based physics module has a concept column that explains the concept of Particle Dynamics precisely. Modules are also equipped with sample questions and discussion related to concepts in the Particle Dynamics material. The purpose of this study was to find out how to increase understanding of students' particle dynamics concepts after using a concept based physics module. The sample of this research was 28 Semester 1 Department of Biology Tadris IAIN Kerinci students, who were 28 students taking Basic Physics courses. The research method used is a pre experimental method with one group pretest posttest design. Research data were analyzed using <N-Gain>. The results obtained an increase in the medium category with an average value of N-Gain <N-Gain> of 0.51. This increase occurs in indicators interpreting, modeling, classifying, summarizing, summarizing, comparing, and explaining.

Keywords: Physics module, concept, particle dynamics, conceptual understanding

ICO00257

The Profile of Prospective Physics Teachers' Conceptual Change Based on Cognitive Style Dimensions through Collaborative Learning on Electricity and Magnetism Topic

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ABSTRACT

This study aims to explore conceptual changes of prospective physics teachers on electricity and magnetism topic based on the different of their cognitive style dimension through collaborative learning. The research method used was pre-experiment with pre-test and post-test designs. The sample in this study was 30 prospective physics teachers at a university in Makassar for the first year of the 2018/2019 academic year. Conceptual changes of prospective physics teachers were measured by a four tier multiple choice test model. The analysis of conceptual changes is divided into three categories, namely not understanding, understanding, and misconceptions. The dimensions of student cognitive style are divided into the dimensions of Field Independence (FI) and Field Dependence (FD) which are measured using the Group Embedded Figure Test (GEFT) standard test. The results showed that there were no FI students who had misconceptions both on the initial and final test. The percentage of FI students decreased in the category of not understanding (1%), and increased in the category of misconceptions (1%). Meanwhile, FD students experienced misconceptions both on the initial test (34%) and the final test (20%). The percentage of FD students in not understanding category decreased (2.7%) and increased in understanding category (17.7%). The results also provided information that collaborative learning contributed to improving students conceptual changes from misconceptions and not understanding concepts to understanding concepts.

Keywords: conceptual changes, cognitive style dimensions, electricity and magnetism topic, and collaborative learning.

ICO00262

Identification of Preservice Biology Teacher's Misconceptions on the Concept of Mangrove Ecology Using the Certainty of Response Index (CRI)

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ABSTRACT

The integration of mangrove ecological concepts and contexts in biology learning is expected to support maritime-based education. The concept of mangrove ecology is important to understand by preservice biology teachers, especially in coastal areas. The real knowledge and experience of preservice biology teachers in coastal areas related to mangroves is predicted to be different from the concept of mangrove ecology that has been studied by experts. This causes misconceptions that can affect the integration of the concept of mangroves ecology in biology learning. To analyzed the misconceptions of preservice biology teachers, the Certainty of Response Index (CRI) method was used. The instrument used was a multiple choice test equipped with a confidence level in answering it. Identification of misconceptions using CRI was carried out to determine the level of understanding and misconceptions of preservice biology teachers, then also to identify what sub-concepts these misconceptions occurred. The research was conducted on 12 preservice biology teacher who took mangrove ecology courses in the 2018/2019 school year. The results of the average distribution preservice biology teacher' understanding levels are 45% understanding of the concept, 7% guessing, 8% not understanding the concept, and 40% misconception. The sub-concept with the most misconceptions was the mangrove research method as much as 47.92%, while the least occurred in the sub-concept of mangrove resilience 33.33%. Given the high level of misconceptions, it is necessary to increase the understanding of the concept of preservice biology teacher related to the concept of mangrove ecology.

Keywords:misconceptions, concept of mangrove ecology, certainty of response index (CRI).

ICO00125

Effects of Physics Enrichment E-Book of Motion Theme Based on Contextual Teaching and Environmental Education on Academic Performance of Grade X Students

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ABSTRACT

Teaching should have a context for creating the meaningful learning. In addition, students should have a variety of learning resources to enrich their abilities. However, learning resources for physics enrichment were still not available. The solution to this problem is to apply physics enrichment e-books by integrating contextual teaching and environmental education. The objective of the research was to investigate the effect of physics enrichment e-books by integrating contextual teaching and environmental education on academic performance of students. The research method was quasi-experimental for two groups of samples. The research design can be entered into the posttest only design. Data collection instruments consist of written test of knowledge aspect, observation sheet to assess attitudes, and performance assessment sheet to assess thinking skills of students. The results of data analysis stated that the application of physics enrichment e-book had a significant effect on academic performance of grade X students including knowledge, attitudes, and thinking skills aspects.

Keywords: Enrichment, E-book, Contextual teaching, Environmental education.

ICO00336

Identification of Concept Understanding by Class VIII Students SMPN 29 Padang Using Diagnostic Tests Four-Tier Multiple Choice

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ABSTRACT

Students need concept understanding so that it is easier for them to understand and solve problems both related to biological concepts and their application in everyday life. Among the biology materials whose concepts are difficult to understand by students, is the human circulatory system, because this material contains many abstract mechanisms and processes,which causes students' learning achievement is to be low.Therefore, in order to find out which students are classified as understanding, not understanding, misconceptions, and errors, it is necessary to identify the conceptual understanding of the human circulatory system material using the Four-Tier Multiple Choice diagnostic test. This research is a descriptive study conducted at SMPN 29 Padang. The research subjects were 66 students of class VIII SMPN 29 Padang who were determined by simple random sampling technique. The research instrument was the Four-Tier Multiple Choice diagnostic test. The research data were analyzed and presented as a percentage. The results showed that the level of understanding of the concepts of class VIII students of SMPN 29 Padang on the material of the human circulatory system was as follows; a. understand the concept as much as 19.84% (very low criteria), b. do not understand as much as 12.60% (very low criteria), c. Misconceptions were 51.71% (with moderate criteria), and d. error as much as 15.85% (with very low criteria). Thus it can be concluded that there are more students who experience misconceptions than understand concepts, do not understand concepts, and errors.

Keywords :Concept Understanding, Diagnostic Tests, Four-Tier Multiple Choice. Concept Understanding.

Group: 05_EDUCATION 2

ICO00070

Application of Analytical Hierarchy Process in Evaluating the Effectiveness of E-Learning Implementation for Logic and System Modeling Learning

(**Research Subtitle**; AHP for E Learning System)

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ABSTRACT

The logic and modeling of systems thinking are studied by students in various subjects, one of which is mathematics. An e-learning system can be used to learn these abilities. Survey was conducted using sample fromstudent in Information system design courses. The data obtained was evaluated using the Analytical Hierarchy Process. The AHP method was chosen in order to obtain an effectiveness comparison between e-learning tools and face-to-face learning in the classroom.

Keywords:Analytical Hierarchy Process, e-learning, Mathematical Modeling, System Modeling

ICO00312

IMPROVE THE CREATIVE THINKING SKILL THROUGHT THE CREATIVE PROBLEM SOLVING (CPS) LEARNING IN STUDY PROGRAM SI MATHEMATICS EDUCATION FKIP UNIVERSITY OF BENGKULU

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ABSTRACT

This research aims to improve the creative thinking skills students of the Mathematics Education Study Program FKIP Bengkulu University through the Creative Problem Solving (CPS). The method used is classroom action research (CAR) consisting of 4 stages, namely planning, implementation, observation, and reflection. The technique of valuing data uses a creative thinking test of 5 essay questions and an observation sheet. The subjects in this study were students of the University of Bengkulu's S1 Mathematics Education Program Odd Semester Academic Year 2019/2020 class VII E consisting of 11 people. The results of this study indicate that the application of CPS learning can improve the ability to think creatively about cycles, namely: 1) Cycle I, the average value of students is 66.36 with completeness criteria of 65.625% with sufficient criteria. 2) Cycle II test scores increased by an average of 80.3636 and completeness 90.905%.

***Keywords*:** Creative Problem Solving, creative thinking

ICO00188

Mathematics Pre-service Teachers' Perception on Realistic Mathematics Education

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ABSTRACT

Realistic Mathematics Education (RME) have become a trending topic to be discussed among educational experts for a long time. However, there is a need to analyze whether it still suitable to use in the classroom teaching. Therefore, the aim of this study is to describe mathematics pre-service teachers' perception about RME. This study is a descriptive researchusing survey method. The data were collected through questionnaire. The collected data was analyzed by using percentage technique.

Keywords: realistic mathematics education

ICO00309

Encouraging Students' Active Learning Activities through Implementation of MASTER Learning Model Based on Mind Mapping Techniques

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ABSTRACT

Students' active learning activities are one indicator of success in a learning process. In fact, students tend to listen to teacher explanations which hamper students learning activities. This point make students not free to develop their potential, so the most students are not interested in mathematics learning. Therefore, there needs to be an effort in this problem, namely by using the steps in the learning model. This study aims to determine the application of MASTER based on mind mapping in increasing the learning activities of students at UNP Laboratory Development High School. The research method used is descriptive method with a qualitative approach. Based on the results of the study, it was concluded that the learning activities of implementation of the MASTER based on mind mapping experienced an increase in the A4 indicator and experienced fluctuations in indicators A1, A2, A3, A5, and A6. This shows that the implementation of the learning model makes students more active than learning using conventional learning models.

Keywords: Active learning activities, MASTER based on mind mapping, Conventional learning

ICO00199

Perception of readiness for online learning: Voice from Mathematics Learners' in Remote Area

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ABSTRACT

This research explores students ' readiness in the remote areas of this year, on the subject of mathematics. The instrument used is student readiness for online Learning (SROL) instrument consisting of four dimensions, online student attributes, time management, communication, and technical. Validity and reliability of SROL instrument were examined. Statistic descriptive students' perception of data on readiness in online learning was presented, while to look at the level of importance of each component, used the analysis using SEM. Technical and communication competencies were rated high for importance compared to online student attributes and time management. Other results also show that gender has significantly different perception of online learning readiness.

Keywords: learners'readiness, learners'perception, online learning, mathematics learners

Group: 07_PHYSICS – AST

ICO00112

Metformin Consumption on Total Cholesterol Levels in Cardiac Polyclinic of Undata Hospital

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ABSTRACT

Type 2 Diabetes mellitus was disorder of high blood glucose level caused by insufficiency of insulin production or insulin receptor resistant or both. Metformin was the first line therapy to lowering blood glucose level. Moreover, in some cases proved that metformin could lowering total cholesterol level. This study aimed to determined the effect of metformin consumption on total cholesterol levels of type 2 diabetes mellitus patientsin Cardiac Polyclinic of Undata Hospital of Palu. The method was prospective cross sectional study, with measurment of total cholesterol levels before and after 3 months of consumption metformin in single use and combination therapy. Then the total cholesterol levels had been analyzed using Wilcoxon statistical trials. The result was 0.114 or P = > 0.05, indicated that it has no signification between consumption metformin in single use or combination to lowering total cholesterol levels. However, the average of total cholesterol level of the patients has decreased by 3,5%, where at the initial measurement the average of total cholesterol level was 174,96 mg/dl and the at final measurement was 168,83 mg/dl. So it is necessary to consider the use of metformin in patients with type 2 diabetes mellitus with cardiovascular disorders.

Keywords: Type 2 Diabetes mellitus, total cholesterol level, metformin, Undata Hospital.

ICO00114

Characterization of catechin microcapsules from gambier using modified flour coatings from bengkoang

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ABSTRACT

Active compounds of catechin from gambier have several disadvantages, that was difficult to dissolve in water and easily oxidized so that need to be overcome by coating with the starch matrix. Modified starch from yam (bengkoang) was produced from acid hydrolysis process, precipitated with alcohol so that it has a helical hole and a porous structure and a function as a matrix. This study aims to determine the effect of modified starch from yam as a matrix on the characteristics of catechins microcapsules from gambier. The treatments tested included the ratio of catechins in modified starch (25%, 50%, 75%), a speed of 6000 rpm, and a stirring time of 15 minutes on the emulsification process. The parameters observed consisted of the loading capacity of catechins in coatings, morphology (SEM), antioxidant activity, and FTIR. The results showed that catechins encapsulated at a ratio of 1: 3 had the highest antioxidant activity, ie 15.30 ppm with morphological of the sphere and smooth. The material ratio affects the surface of the catechin microcapsules with elemental mapping shows the color the brighter, the higher the amount of catechin concentration in encapsulation. The FTIR analysis showed the binding of catechins ingredient in the matrix as seen new absorption peaks at wavelengths of 1515 cm^{-1} and two peaks at 1810 cm^{-1} and 2250 cm^{-1}. Catechin microcapsules encapsulated with modified starch have shown good resistance to air/oxygen diffusion during storage.

Keywords:Bengkoang, modified, gambier, catechin, microcapsule.

ICO00121

The Implementation of Utaut 2 Model to See Generation Y Interests and Behavior Using Tokopedia in Indonesia

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ABSTRACT

The purpose of this study was able to prove empirically about the influence of the "Unified Theory of Acceptance and Use of Technology 2" model on the use of TOKOPEDIA e-commerce in Indonesia, especially Generation Y. This study used primary data collected by questionnaires distributed through Twitter media that managed by ourselves involving a sample of 185 respondents from Generation Y users of Tokopedia E-Commerce in Indonesia. The sample methodology used with the number of indicators multiplied by 5 (five) in accordance with Hair.et al Technique. Data analysis was conducted using SEM approach with Smart PLS 3 tools. The results of this study found that only Hedonic Motivation, Personal Innovation and Social Influence Variables had a positive and significant influence on Behavioral Intention E-commerce Tokopedia, while Effort Expectancy, Facilitating Conditions, Perceived Risk, Perceived Risk, Performance Expectancy and Price Value Variable did not have a significant effect. Whereas to see the Use of Tokopedia Behavior by Generation Y only the Behavioral Intention, Facilitating Conditions, and Habit variables had a positive and significant effect while others did not have a significant effect on Use Behavior. The result of this study was expected to provide references and information to E-Commerce TOKOPEDIA companies regarding public interest and behavior, especially Generation Y in the use of TOKOPEDIA so the results of this study can be used as a strategic guideline model for the development of E-Commerce Tokopedia and other E-Commerce companies.

Keywords:E-Commerce, Tokopedia, UTAUT 2, Indonesia.

ICO00130

An Assessment of Support Vector Machines Classification to Estimate Burn Area of Peatland in Muaro Jambi District Jambi Province

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ABSTRACT

Forest fires have become an annual disaster in Indonesia which has an impact on peatland degradation.Peatland has an important role that needs to be protected,the role of peatland as water storage media in the rainy season.Prevention and suppression of forest fires need to be done continuously considering the magnitude of loss caused by forest fires.One way that allows us to know the conditions forest and peatland fires are using technology remote sensing. Satellite imagery generated from remote sensing can analyzed through the classification process.This study appliedSupport Vector Machines algorithms to classify classes burned area, vegetation and bared soilfrom remote sensed data of peatland area inMuaro Jambi District Jambi Province. By implementing the Support Vector Machinesalgorithm, this research obtained a classifierwith the accuracy of 90%.The estimated area of peat based on the Support Vector Machines classifier on August 15th 2019 in Kumpeh Ulu Muaro Jambi District, Jambi is 2.966 Ha at the burned area class, 29.390 Ha at the vegetation class and 14.023 at the bared soil class.

Keywords:Classification,Forest fire,Peatland, Support Vector Machines

ICO00021

Structure Modified of Activated Carbon Monoliths Derived from Teak Leave for Performance Electrodes Supercapacitors

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ABSTRACT

The synthesis of supercapacitor electrodes based activated carbon monoliths from teak leaves to produce different carbon structure has been completely studied. This research aims to modify the carbon biomass into rod, sheet, and fiber structures. The KOH was used as an activating agent, followed by an integrated step of pyrolysis both carbonization and physical activation. The carbonization process was conducted at a temperature of 600 °C. The physical activation temperatures were conducted in CO_2 at different temperatures, which was 750 °C, 800 °C, 850 °C, and 900 °C. The modified activated carbon from teak leaves display carbon rod (750 °C), carbon sheet (800 °C), carbon fiber (900°C). The carbon structures have many advantages, providing the large specific surface area (514.419 $m^2\ g^{-1}$) for carbon fiber and the carbon sheet structure performs the high specific capacitance (168 $F\ g^{-1}$) in two electrodes system. This study provides an economic approach for preparation of electrode materials based various structure for energy storage system by abundant materials.

Keywords: Teak leaves, activated carbon, carbon electrodes, carbon structure, supercapacitor.

Group: 08_BIOLOGY

ICO00216

In silico PCR study to detect non-halal mitochondrial *ND5* gene in food samples

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ABSTRACT

The commitment of the Government of Indonesia in protecting the rights of Muslim consumers to consume halal products has been regulated in Law No. 33 of 2014, which is the Halal Product Guarantee (*Jaminan Produk Halal*/JPH) which states that products that enter, circulate and trade in Indonesian territory must be halal-certified. Nevertheless, in the community there are cases which meat-based food products are found to be mixed with pork in order to reduce production costs. An alternative solution that can be used to test pork content in food products accurately is through Polymerase Chain Reaction (PCR) because this technique can detect and amplify non-halal DNA sequences specifically from small size of samples. Specificity of PCR depends on primer designing. *Cyt-b* is a mitochondrial gene commonly used for target detection of pig content by PCR, but because the sequence is almost similar to cattle *cyt-b* , false positives often occur during laboratory test. Therefore this study aims to design primers that amplify another mitochondrial gene, *NADH dehydrogenase subunit 5 (ND5)* and conduct in silico PCR studies using bioinformatics software. Mitochondrial *ND5* sequence of *Sus scrofa* and *Bos taurus*were downloaded from NCBI and pairwise-aligned using Geneious Prime bioinformatic software. Primers were designed on species-specific sequence for pig and cattle. The primers specificity were checked using PrimerBLAST tools in NCBI. The result of this study were two pair of primers that amplify 467 bp fragment of *ND5* specific to pig and 206 bp fragment of *ND5* specific to cattle.

Keywords: in silico PCR, non-halal detection method, *NADH dehydrogenase subunit 5 (ND5),* pig.

ICO00215

In silico study of developing a method for detecting pathogenic bacteria in refillable drinking water samples

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ABSTRACT

The existence of the Refill Drinking Water Depot (*Depot Air Minum Isi Ulang*/DAMIU) helps people with the need for cheap and refillable ready-to-drink water. However, if the drinking water provided is of poor quality it will have an impact on health. One of the parameters of quality of drinking water that is suitable for consumption is not contaminated by *Escherichia coli*, *Salmonella* and *Shigella* sp. Beside microbiological tests, water quality testing can be carried out molecularly only in few hours, using PCR (Polymerase Chain Reactions) technique. Although PCR is a basic molecular technique, various detection methods can be developed from it. The key to success in making a PCR-based method is inseparable from bioinformatics studies when designing primers that are specific to pathogen target DNA. The purpose of this research was to design pathogen-specific primers and do in silico study of PCR using bioinformatics software to get better planning in developing detection method. DNA sequence templates of *E. coli*, *Salmonella* and *Shigella* sp were downloaded from NCBI and multiple-aligned using Geneious Prime bioinformatic software. Primers were designed according to conserved region of these pathogens. The primers specificity were checked using PrimerBLAST tools in NCBI. The result of this study was a pair of primers that amplify 825 bp fragment of *16S rRNA* sequence specific to *E. coli*, *Salmonella* and *Shigella*.

Keywords: in silico PCR, pathogen detection method, *E. coli*, *Salmonella*, *Shigella*

ICO00253

Primers and probes design of multiplexing qPCR for simultaneous detection of non-halal gene content from food samples

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ABSTRACT

Nowadays halal food is not only a concern of a Muslim-majority countries but also a concern of other Muslim-minority countries from Thailand, Vietnam, South Korea, China, to European countries. Competing in the halal industrial market is not easy. Indonesia still faces challenges and obstacles regarding halal certification because of the assumptions that every product produced in Indonesia is generally halal so it does not require halal certification for that product. But these assumptions turned out to be used by irresponsible people by mixing halal food with pork or fanged animals in order to get more profit. Therefore Halal Examining Institutions (Lembaga Pemeriksa Halal/LPH) must be able to develop methods that can detect non-halal content in a product. Multiplex quantitative real time PCR (qPCR) is the answer because it can detect the non-halal content of various types of animal species simultaneously and quantitatively. Design of primers and probes is the crucial factors that determine the best performance of multiplex qPCR analyses. Thus, this study aims to design primers and probes that meet the multiplex qPCR criteria to detect and amplify DNA from pork, rat and cattle. Sequence of *ND5* of *Sus scrofa*, *Rattus rattus* and *Bos taurus*were downloaded from NCBI and aligned using Geneious Prime software. Conserved region of these species were used for primer design whereas species-specific sequence were used for probe design. The result of this bioinformatic studies were a pair of conserved primers with 166 bp amplicon size and species-specific probes of *Sus*, *Rattus* and *Bos.*

Keywords : primer and probe design, non-halal detection method, multiplex qPCR, *ND5*.

ICO00307

Diversity of Ants (Hymenoptera: Formicidae) in the Mangrove ForestTourism Park of Pariaman, West Sumatra

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ABSTRACT

Ants are a social insect with high diversity and distributed widely to the world in many types of habitats including mangrove ecosystem.They also plays important role in mangrove ecosystem, but the study of ant in this habitat of West Sumatra still scanty. The purpose of this study was to understand the ant diversity in mangrove ecosystem of Pariaman, West Sumatra.The collection method used in this research is baited trap, beating and hand collection.A total of 11 species, 10 genera of ants belonging to 3 subfamilies werefound in this study. Formicinae is the subfamily with highest number of species (5 spp.) and follows by Myrmicinae (4 spp.) and Dolichoderinae (2 spp.). The following invasive and tramp species were found in the present study,*Anoplolepis gracilipes*,*Tapinomamelanochepalum*, *Tetramoriumsimillimum*, and*Tetramoriumbicarinatum*. The ant speciesdiversity index in this study is moderate (H '= 1,2), while the evenness index classified as moderate (E = 0,5), and no species of antsdominate of this area were found (D = 0,5).

Keywords: *Ants,Invasive, Mangroves, Tramp, West Sumatra*

ICO00275

The Effect of Weight Training on Protein Metabolism of the Members of the Padang State University Fitness Center

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ABSTRACT

Weight training on muscles will affect protein metabolism. No studies have been conducted regarding the effect of weight training on keratinin, urea, and total protein levels. This study was an experiment with a pre and post-test group method on 22 male people who met the criteria at the Padang State University fitness center. The results showed an average increase in creatinine levels, where the mean value of creatinine before weight training was 0.823mg / dL and after weight training was 0.959 mg / dL. The total protein pretest value was 8.33 ± 1.72 g / dL while there was a decrease in the average posttest amounting to 6.72 ± 1.54 g / dL. The average pretest urea level was 16.95 ± 9.93 mg / dL, while the posttest average increased by 24.68 ± 16.79 mg / dL. It can be concluded that there is an effect of weight training on creatinine, urea and total protein levels with a p value <0.05

Keywords: weight training, creatinine, urea, total protein

Group: 09_CHEMISTRY – AST

ICO00091

Storage resistance and level of panelist acceptance of tomato sauce enriched with kandis acid (*Garcinia cowa* Roxb) extract as a preservative

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ABSTRACT

Kandis acid (*Garcinia cowa Roxb*) is a fruit that contains phenolic compounds, flavonoids, alkaloids, saponins, ascorbic acid, and citric acid hydroxides which act as antimicrobials and food preservatives. The purpose of this study is to utilize kandis acid extract as a natural preservative to increase the storage life of tomato sauce to minimize the use of synthetic food preservatives. This research was conducted with a completely randomized design (CRD) method with the treatment of kandis acid extract macerated with water using an autoclave at 121^0C for 15 minutes (A), using a magnetic stirer with a temperature of 100^0C for 8 hours (B), using a magnetic stirer with temperature of 60^oC for 24 hours (C), using ethanol and distilled water with a ratio of 1: 1 for 24 hours (D), without the addition of kandis acid extract as control (E), and the addition of citric acid (F). Organoleptic test for tomato sauce products produced includes color, taste, aroma, and texture. The analysis of pH and mold contamination were done every 2 weeks for 6 (six) weeks. The results of the analysis showed that the addition of kandis acid extract by maceration using an autoclave with temperature of 121^oC for 15 minutes was the optimal treatment for organoleptic flavors, aromas and textures with values of 4.08; 4.17; 4.08 respectively, with pH of 3.8 and mold contamination of 35 colonies/g for six weeks storage. This result was not different from the administration of citric acid and fulfills the standard according to SNI 01-3546-2004 (tomato sauce),

Keywords: Kandis acid, macerated, tomato sauces

ICO00092

The Development of Web Based Geographic Information Systemfor Green Open Space in Jambi City

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ABSTRACT

Green open Space is one of the urban elements that play an important role in creating a healthy environment.Besides being protected area, green open space also has social function as a place of recreation and sport. The government has built a comfortable green open space. Unfortunately, many people do not know the location of green open spaces. This research developed a web-based Geographic Information System for Green Open Space in Jambi City which is equipped with a virtual tour that presents an attractive panorama simulation of locations. This research used the prototyping method in its development and the Laravel framework for the web application. User acceptance test (UAT) method was used to test the system. From the UAT results, the system has been successfully fulfilled the needs of users.

Keywords: Green open Space, Geographic Information System,Prototyping methods.

ICO00266

Plant Growth Promoting Rhizobacteria (PGPR): as a Potential Biocontrol for *Curvulariaoryzae* In vitro

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ABSTRACT

Rhizobacteria is an environmentally friendly and sustainable biocontrol agent, used as an alternative in the management of plant pathogens. Furthermore, their suppression mechanism often varies, as some are capable of producing antibiotic compounds, competing with, and increasing plant growth, although t some forms possess multiple control. This study, therefore, aims to determine the activity of rhizobacterial antibiosis against *Curvulariaoryzae* in vitro. The experiment was conducted at the Laboratory of Biological Control, Department of Pests and Plant Diseases, Faculty of Agriculture, Andalas University. In addition, the procedure required using an experimental method, which was carried out in a Completely Randomized Design. The antagonistic rhizobacterial selection of *C. oryzae* fungi was carried out using a dual culture test, on a total of 7 isolates, and 4 were selected, encompassing *Stenotrophomonasmalthopilia* KJKB5.4, *Stenotrophomonaspavanii* LMTSA5.4, *Bacillus cereus* AJ34 and *Alcaligenesfaecalis* AJ14 as potential candidates in the control of *C. oryzae*, with suppression effectiveness that was above 50%. In addition, it was also established that all four isolates possessed the propensity to produce chitinase enzymes.

Keywords: Antagonistic, chitinolytic, biological control, rhizosphere

ICO00132

The Analysis of Factors That Influence Millennial Generation Behavior to Use a Go-PAY Digital Wallet in Indonesia

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ABSTRACT

The purpose of this research is was able to prove empirically the "Unified Theory of Acceptance and Use of Technology 2" model toward millennial behavior to use the Go-PAY Digital Wallet. This study used primary data collected by questionnaires distributed through Twitter media that managed by ourselves involving a sample of 185 respondents from Go-Pay users in Indonesia. Data analysis was conducted using the SEM approach with Smart PLS 3 tools. The results of this study found that only Habit, Price Value Variables had a positive and significant effect on intention to use Go-Pay while Work Expectation, Supporting Conditions, Hedonic Motivation, Social Influences, Perceived Risk and Related Privacy Systems Variables did not have a significant effect. Whereas to see Use Behavior only the habits, Supporting Conditions, Interests of Use that have a positive and significant effect while others did not have a significant effect. The result of this study was expected to provide a reference and information to Go-PAY companies regarding the Millennial Generations interest and behavior to use Go-PAY so the result of this study can be used as a strategic guideline model for Go-PAY future development and other Fintech companies in Indonesia.

Keywords:Digital Wallet, Go-PAY, UTAUT 2, Indonesia.

ICO00169

AgroEduTourismInformation System Development of Dataran Kempas Village

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ABSTRACT

Dataran Kempas is an agro edu tourism village located in Tanjung Jabung Barat District Jambi, has a lot of agricultural potential including compost production, tilapia farming, sheep breeding, red ginger cultivation, horticulture, and plastic waste recycling. Unfortunately, many potential tourists do not know about these agro edu tourism.The use of information media and promotion has not run optimally. Therefore, Dataran Kempas village needs anagroedutourisminformation system.The information system provides information about agro edu tourism, which shows the amenities, activity, even the cost.This system was develop using prototyping method consisted of communication, quick plan and modeling quick design, construction of prototype, deployment delivery and feedback.User acceptance test (UAT) method was used to test the system. From the UAT results, the system has been successfully meet the needs of users.

Keywords:Agro edu tourism, Information System,Prototyping methods.