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A Study on the Characterization of PbS Thin Films

Aye Aye Mar*

Abstract

Starting materials lead acetate [$Pb(CH_3COO)_2.3H_2O$] and thiourea [$SC(NH_2)_2$] were weighed according to their stoichiometric composition. Then, equal molarities were mixed with distilled water, forming PbS thin films. The solution was sprayed onto the glass substrates using spray pyrolysis method at different temperatures. Structural, optical, electrical properties and type of the films were investigated. The electrical resistivity and conductivity of the films can also be deduced from the sheet resistance and thickness.

Key words: Lead acetate, thiourea , PbS thin films, electrical resistivity, conductivity

Calculation of I - VCharacteristics of Solar Radiation of Some Towns in Tanintharyi Region

Khin Moe Oo*

Abstract

The electrical performance of a photovoltaic (PV) silicon solar panel is described by its current – voltage (I-V) characteristics curve. In this research, the parameters of photovoltaic poly crystalline solar cell under solar irradiance at different regions were determined. Also the I-V characteristics for a PV module with tilted angle were studied. The experimental results show that the increasing of solar radiation, the open circuit voltage (V_{OC}) changed very little, the characteristics parameter short circuit current (I_{SC}) increase linearly, and the conversion efficiency (η) kept a constant approximately. The effect of tilted angle on the I_{SC} and V_{OC} of a solar panel are indicated from the experimental results. . So, the maximum current is obtained at tilted angle 45° at Myeik. The maximum power output under various regions is investigated in Tanintharyi Region.

Key words : photovoltaic poly crystalline solar cell, I-V characteristics

Design and Construction of Water Level Indicator with its Domestic Applications

Moe Sanda*

Abstract

Water level indicator circuit is designed and constructed by using CD 4066 BE quad bilateral switch IC, transistor, LEDs and Piezoelectric Buzzer. This circuit is easy to use for any simple on-off function. The advantages of water level indicator are it sequentially switched ON when it reaches a certain water level and also opens the LEDs automatically. Finallywhen the last switch is "ON", the transistor of the base bias is flowed by the current, the buzzer starts to work causing the alarm.

Key words: water level indicator, simple on – off function, LED

Ideals in Commutative Rings

Win Win Tun*

Abstract

In this paper, some basic definitions of rings and ideals are firstly introduced. Next, some properties of ideals in commutative rings are discussed.

The Influence of Media and Temperature on the Marine Zooplankton *Moina* spp.

Aye Aye Cho*

Abstract

Ecologically, zooplankton are one of the most important biotic components influencing all the functional aspects of an aquatic ecosystem, such as food chains, food webs, energy flow and cycling of matter. Their products are important in the function of aquatic communities and are the main food for various species of aquatic animals. Among them Moina is easily available, has high nutritional value, and the ability to produce mass cultures. In fact the present study was carried out to better understand the production of *Moina salina* (Daddy, 1888). Fifty individuals were cultured separately in starters of 50ml, 75ml and 100 ml of the same fishmeal media. The number of individuals produced from different media volume water were analysed. Parameters were recorded daily. *Moina* populations from different media volumes were compared. The experiment was conducted from June 2016 to February 2017. The study aims to contribute knowledge and support abundant live food for larviculture.

Key words: *Moina salina,* fishmeal media, *Moina* population

Wildlife Consumption around Palaw-Myeik-Bokpyin, Taninthayi Region

Khin Swe Oo[1], Yu Yu Htwe[2] & Hau Cingh Mang[3]

Abstract

A survey on wildlife consumption around Palaw-Myeik-Bokpyin, Taninthayi Region was carried out within six months from January 2016 to June 2016.A total of 22 survey points in restaurants and shops were recorded. Ten mammal species were recorded as regional delicacy in 7 (87.5%) of 8 restaurants and shops in Myeik and Palaw Townships. Eight species of mammals as foods in eight (57.14%) of 14 points were recorded in Bokpyin Township. According to the status of wildlife exploitation as foods in the study areas, the wild pig is the most favourite cuisine at the restaurants of those regions.

Key words: wildlife consumption, favourite cuisine

Petrography of the Metamorphic Rocks Exposed in the Yega-Ywathaywar Area, Sagaing Township, Sagaing Region

Su Myat Aung*

Abstract

The study area, Yega-Ywatharywar is situated about 7km north of Sagaing Township. The study area constitutes both metamorphic rocks; gneiss, calc-silicate rocks, marbles and skarn, and igneous rocks; amphibolite. Based on the constituent mineral assemblages and textures, the metamorphic units can be subdivided into two types: metasedimentary (metapsammite, metacarbonate, skarn) and metaigneous (metabasites). More than forty thin sections were cut from various representative rock samples collected from the study area for the petrographic features of the mineral assemblages. The Michel Levy's method is used to decide the plagioclase composition.

Key words: Petrography, Metasedimentary, Metaigneous, Facies, Grade

Study on Some Biological Aspects of Hilsa Shad from Kyauk Phyar River Mouth, near Myeik

Nyo Nyo Tun[1], Kyaw Thura[2], Si Thu Hein[3] and Hnin Hnin Maw[4]

Abstract

Hilsa shads (*Tenualosa ilisha*) near Myeik were by-catch species and found in the catch more abundantly in October and November. They were more common near Panar Taung and Thet Yar Wa waters. Different size groups occurred in different seasons along Kyauk Phyar River Mouth. Although diverse food items were observed, phytoplankton especially diatoms dominated in the stomachs of this species.

Key words: Hilsa shads, phytoplankton, by-catch species

Socio-economic Assessment on Fishing Communities in Kyauk-Phyar and Thit-Yar-Wa Villages, Tanintharyi Region

Zin Lin Khine[1] and Hnin Hnin Maw[2]

Abstract

A socio-economic baseline assessment was conducted in Kyauk-Phyar and Thit-Yar-Wa villages from June, 2015 to May, 2016. Household survey data indicated that the community infrastructure and basic services were limited in both villages. These communities require facilities for electricity, transport, education and health care. Most respondents identified as Burma and Buddhist. Most people between the ages of 20-40 years had only basic education while very few achieved college degrees. Fishing was the main source of income and primary occupation for most respondents in the two villages but their income was not enough for their livelihood. They faced most difficulties in the rainy season (June-September). The primary occupations of some respondents were agriculture and shop keeping. Most respondents rated the current conditions of coastal resources at poor or moderate levels. Most fishermen who had fishing experience perceived a decline in the catches of fish and marine resources in the present period in comparison to the last five years. The household members had low awareness of rules and regulations of fishing and forestry. Coastal resources conservation training and appropriate plans are needed to develop public awareness of fishing and forestry laws and regulations.

Key words: Fishing, Kyauk-Phyar, livelihood, socioeconomic, Thit-Yar-Wa.

Study on the Seasonal Variation of Marine Phytoplankton in the Water off Kyun-Su Island (Myeik Archipelago)

Si Thu Hein[1], Lett Wai Nwe[2]

Abstract

This study focused on the seasonal variation of species composition, distribution and density of phytoplankton. Phytoplankton samples were collected three times from the surface layer of Kyun-Su jetty water, Lat.12° 29' N and Long. 98° 28' E, 2013-2014. A total of 89 phytoplankton species belonging to 2 genera with 2 species of blue-green algae, 33 genera with 59 species of diatoms, 10 genera with 28 species of dinoflagellates were identified. The seasonal occurrence of species during the study period was recorded. The highest phytoplankton density (39.96 x 10^3 cells / m^3) was recorded in July. The numbers of phytoplankton density were higher in the rainy season (July) and lower in the cold season (December) and slightly higher again in late summer (May).

Key words: phytoplankton, Kyun-Su jetty water, blue green algae, seasonal occurrence, regions.

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Study on the Green Algae (Chlorophyta) from Escape Bay and Adjacent Areas, Myeik Coastal Waters

Tin Tin Kyu,[1] San Tha Tun,[2] Yin Yin Htay[3]

Abstract

A total of 29 species of marine benthic green algae comprising to 13 genera, 11 families of 4 orders were bimonthly collected from Escape Bay and adjacent areas, Elphinstone Island, Myeik Archipelago during June 2013 to February 2014. The seaweed sampling stations were Escape Bay (Lat 12° 16' N Long 98° 00' E), Zalatt-Aw-Nge (Lat 12° 18' N Long 98° 02' E) and Grants Island (Lat 12° 23' N Long 98° 08' E). Among these species, *Caulerpa racemosa* was a dominant species throughout the study period. And, *Caulerpa taxifolia* and *C. peltata* were very rare species.

Key words: Green algae, *Caulerpa racemosa*, *Caulape taxifolia*, Escape Bay, Myeik Archipelago

Study on the Species Diversity, Food and Feeding Habits of *Secutor* species from Palaw Township

Khin May Chit Maung[1], Khin Yu Nwe[2] and Kay Khine Soe[3]

Abstract

Three species of the genus *Secutor* belonging to the family Leiognathidae sampled from Shutpon and Pitat, Palaw Township from June 2015 to May 2016 were identified as *Secutor hanedai*, *S. insidiator* and *S. ruconius* based on the external morphological characteristics. Key to the species of the genus *Secutor* was provided. Diatoms and copepods were the major food items of *Secutor ruconius*. *Secutor hanedai* was the most dominant species, followed by *S. ruconius* and *S. insidiator*.

Key words: Copepods, Diatoms, Leiognathidae and *Secutor*.

Study on the Cuttlefishes in Palaw Township

Khin Yu Nwe[1], Khin May Chit Maung[2], Kay Khine Soe[3]

Abstract

The cuttlefish species were studied from the collected samples of Shutpon and Pitat, Palaw Township from June 2014 to May 2015. A total of 4 species belonging to 3 species of Sepia and 1 species of Sepiella were identified. The distribution of species in two stations was recorded. The internal and external characters of cuttlefishes, key to genus of Sepia and Sepiella and key to the species of Sepia from Palaw Township were presented in this paper.

Key words: cuttlefishes, Shutpon, Pitat and Palaw Township

အသစ်တိုးပွားလာစေသော မြန်မာဝေါဟာရများ

ဇော်ဝင်း[၁]၊ ရီရီလွင်[၂]၊ ကိုကိုအောင်[၃]

စာတမ်းအကျဉ်း

မြန်မာဘာသာစကားသည် ရှင်သန်လျက်ရှိသော ဘာသာစကားဖြစ်သည့် အလျောက် စကားလုံးအသစ်များ၊ အဓိပ္ပာယ်အသစ်များ ဖြစ်ပေါ် ပြောင်းလဲ လျက်ရှိသည်။ စကားလုံးအသစ် ဖြစ်ပေါ်ပြောင်းလဲမှုကို လူမှုဘာသာဗေဒ ဘာသာ စကားပြောင်းလဲမှု ကဏ္ဍတစ်ရပ်အဖြစ် လေ့လာသည်။ ယခုစာတမ်းတွင် ပြင်ပ ပြောင်းလဲမှုနှင့် အတွင်းပြောင်းလဲမှုဟူသည့် ပုံစံနှစ်ရပ်ဖြင့် လေ့လာထားသည်။ ပြင်ပပြောင်းလဲမှုတွင် ဘာသာစကားထိတွေ့မှုကြောင့် လည်းကောင်း၊ အတွင်း ပြောင်းလဲမှုတွင် အသစ်တီထွင်ခြင်း၊ ပေါင်းစပ်ခြင်း၊ အတိုကောက် အသုံးပြုခြင်း၊ အနက်ချဲ့ထွင်ခြင်းဖြင့် လည်းကောင်း၊ မြန်မာဘာသာစကားတွင် စာလုံးအသစ်များ ပြောင်းလဲဖြစ်ပေါ်လာသည်။

သော့ချက်ဝေါဟာရများ– စကားလုံးအသစ်၊ ဘာသာစကားပြောင်းလဲမှု၊ ဘာသာစကား ထိတွေ့မှု၊ ပြင်ပပြောင်းလဲမှု၊အတွင်းပြောင်းလဲမှု။

Developing Students' Speaking and Listening Confidence through Communicative Activities

Ohnmar Phyu[1], Rena G. Frohman[2]

Abstract

Speaking and listening are two major parts of English communication that require considerable amounts of practice to develop fluency. In Myeik University, of the four language skills, speaking is generally considered difficult to learn and many students are reluctant to speak. A common complaint among teachers is that students are unwilling to talk. There are many possible reasons why students tend to be silent listeners rather than active learners in the class. One influential factor may be the psychological pressure of making mistakes in the presence of classmates. Students may also lack the knowledge and confidence to say out loud what they know in front of their teachers and friends. In the same way, listening is an internal process that cannot be directly observed. It is an active process in which the listener needs to construct the overall message that is exchanged between listener and speaker and respond appropriately. It is well recognized that for students to develop fluency in speaking and listening, confidence is a key factor. If students lack confidence to speak they will be less willing to take risks to produce free spontaneous speech, which is the foundation of real conversations. In order to develop students' confidence in speaking and listening, communicative activities can be used in English as a Foreign Language (EFL) classes. The results from "The English Conversation Class" at Myeik University run by an Australian Volunteer for International Development (AVID) Teacher Trainer, with input from the English Department, showed that in fact communicative activities helped to develop students' speaking and listening confidence. Students' perceptions of their confidence in speaking and listening increased significantly over a four-week pilot class.

Key words : speaking, listening, communicative activities

ဥပဓိလဝဏ္ဏဇာတ်ရိပ်၏ ထူးခြားသောဘဝဖြစ်စဉ်

မြင့်မြင့်စန်း*

စာတမ်းအကျဉ်း

ဤသုတေသနစာတမ်းတွင် တေဒဂ်ဘွဲ့ထူးရ ဥပဓိလဝဏ္ဏဇာတ်ရိပ်၏ ဘဝအဆက် ဆက် ပါရမီ ဖြည့်ဆည်းခဲ့ခြင်းများ၊ ဆုတောင်းဆုယူပြုခဲ့ခြင်းများ၊ ဉာဏ်အမြော်အမြင် ကြီးမြတ်ခြင်းများ၊ ထက်သန်သော လုံ့လဝီရိယရှိခဲ့ခြင်းများ၊ ယုံကြည်မှု သဒ္ဓါတရား ကောင်းများနှင့် ပြည့်စုံခြင်း အစရှိသည်တို့ကို တင်ပြထားသော စာတမ်းငယ်တစ်စောင် ဖြစ်သောကြောင့် ဖတ်ရှုသူတို့အနေအားဖြင့် ဥပဓိလဝဏ်ဇာတ်ရိပ်မ အပေါ်တွင် ဂုဏ်ယူ အားကျစေရန်၊ နှစ်သက်လေးစားကြည်ညိုစေရန်၊ အတုယူစေရန်၊ သဒ္ဓါတရား များတိုးပွားလာစေရန် ရည်ရွယ်ပါသည်။

သော့ချက်စကားလုံးများ- ဥပဓိလဝဏ်ဇာတ်ရိပ်၊တေဒဂ်ဘွဲ့၊ဉာဏ်အမြော်အမြင်ကြီးမြတ်ခြင်းများ၊

Remaining of Relics by *Gotama Buddha*

Ohnmar Swe*

Abstract

Omniscient *Gotama Buddha* showed the sentient beings the way to perfect happiness. During his lifetime his physical being, knowledge and attributes had been objects of worship. After, *Parinibbāna*, his final passing away, only the latter two remained as objects of veneration. However he had prescribed four kinds of *Cetī*, to be worshipped in his stead, namely, *Dhamma Cetī, Dhātu Cetī, paribhoga Cetī* and *Udissa Cetī*. The *Buddha*'s relics, are in two categories; one which remain without disintegration, unbroken relics (*Asambhinna Dhātu or Avippakiṇṇa Dhātu*) and those lying in disintegration, broken relics (*Sambhinna Dhātu or Vippakiṇṇa Dhātu*). The relics of *Gotama Buddha* were left behind before his *Parinibbāna* so that they might aid teaching to be spread far and wide. They should be worshipped by every Buddhist. The various kinds of relics by *Gotama Buddha* are discussed in this paper.

Key words: *Gotama Buddha, Parinibbāna, Dhātu Cetī, Asambhinna Dhātu* or *Avippakiṇṇa Dhātu, Sambhinna Dhātu* or *Vippakiṇṇa Dhātu, Buddha*'s relics

Determination of Molecular Weight of Certain Types of Honey

Mi Mi Lay*

Abstract

Two honey samples were collected from Tanintharyi and Kyun Su Townships. The physicochemical properties of both honey samples such as colour, refractive index, free acids, pH, moisture content, solubility and average molecular weight were conducted by conventional methods and modern techniques. It was found that the value of free acids, pH and refractive index of both honey samples were not too much different but the moisture of Tanintharyi honey sample was higher than that of Kyun Su honey sample. From the solubility test both honey samples are soluble in some organic and inorganic solvents except water. The molecular weights of both honey samples were determined by viscometric method. It was found that the average molecular weight of Kyun Su honey sample was greater than that of Tanintharyi honey sample.

Key words: Honey samples, physicochemical properties, viscometric method

Effect of Vegetable Wastes on the Fertility of Soil

Kyaw Zan Aung,[1] Tun Oo,[2] Nay Thwe Kyi[3]

Abstract

The compost production is considered an economic and environmentally means to reduce the waste such as municipal and agricultural wastes going into landfill. The aim of the research concerns with the effect of vegetable wastes on the fertility of soil. In this research work, the first experiment was carried out the preparation of two composts by mixing the various ratio of soil and organic matter (using tea waste and vegetable waste), compost - 1(soil: organic matter = 3:1) and compost - 2(soil: organic matter = 1:1). Physicochemical properties such as texture, moisture, electrical conductivity, organic carbon, humus, pH, cation exchange capacity, total N %, available nutrients and exchangeable cation of soil and composts were investigated by conventional methods and modern techniques before and after composts preparation. According to the soil texture analysis, the control soil and two compost soil samples were found to be loam type. The pH of control soil was 4.66 and said to be strongly acid. The prepared two compost soils were increased the pH value (6.47 and 6.79) which can suitable for plants. Increase in physicochemical properties was noticed in compost 1 and 2 when compared to control soil. Generally, nutrient contents such as K content and total N were increased in the two compost soil amples but available P content in compost-1 was decreased. Moreover, cation exchange capacity, organic carbon and humus contents in the two compost soil samples were also larger value than control soil. Exchangeable cation such as Ca^{++} and K^{+} ions contents were generally increased but Mg^{++} content was gradually increased from compost-1 to compost-2 soil samples. The second experiment was conducted to assess the effect of two composts as well as on the plant growth and nutrients uptake. The lady's finger plants were planted in control and two compost soils pots. After plantation, cation exchange capacity (CEC) of soil was slightly decreased in compost-1 and compost-2. The amount of exchangeable cation such as calcium, magnesium and potassium before and after plantation were slightly decreased in two compost samples. Above the context, the prepared composts with vegetable wastes can be used as a good source of nitrogen, phosphorous, potassium for plant growth and compost can reduce the farmer's budget for crop fertilization and for environmental pollution.

Key words : Compost, control soil, environmental prevention, physicochemical properties, N,P,K

Fabrication of Zinc Oxide Nanowire with Natural Dye Extract for Dye Sensitized Solar Cell Application

Aye Thandar Oo[1], Myint Thu[2], Myint Myint Moe[3]

Abstract

Zinc oxide nanowires grown from aqueous solutions of hexamethylenetetramine ($C_6H_{12}N_4$) and zinc nitrate ($Zn(NO_3)_2$) are used in dye-sensitized solar cells. Firstly, ZnO film was coated by using spin coating technique. And then, ZnO nanowires were grown by using chemical bath deposition method (CBD). The nanowires structure was sensitized with natural bark dye and assembled into a DSSC (Dye – Sensitized Solar Cell) This research has been focused on the synthesis of ZnO nanowires film for its application in DSSC devices using the bark sensitizer. The DSSCs converted the energy in light absorbed by dyes or pigments into other forms of energy. High performance carbon electrode was prepared onto ITO (Indium doped tin oxide) glass and used as counter electrode. The photovoltaic properties showed that under sodium lamp, power conversion efficiency of 2.795%, 4.257% and fill factors of 0.68, 0.81 at growing time 7 h and 14 h, respectively. The conversion efficiency of DSSC at growing time 14 h (4.257%) was found to be larger than that of the cell at 7 h (2.795%). According to the experimental results, ZnO nanowires might be promising, credible and applicable in use for photoelectrode of dye-sensitized solar cell (DSSC) architecture.

Key words: Zn O nanowires, dye – sensitized solar cells, chemical bath deposition method, High performance carbon electrode Photovoltaic Properties.