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**Academic year  
2018-2019**

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SL.No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Calendar Year of publication	ISSN number
1	Disposal of Death Among the Liangmeis of Manipur	Dr. Th. Mina Devi	History	JONER, Journal of North-East Region	2018	ISSN:2321-0583
2	Traditional Beliefs and practices of the Liangmei Tribe with Reference to Birth: An Ethno-Historical Approach	Dr. Th. Mina Devi	History	North Asian International Research Journal of Social Science & Humanities	Jul-18	ISSN: 2454-9827

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### Disposal of Death Among the Liangmeis of Manipur

Dr. Th. Mina Devi  
Department of History  
Regional College, Lilong, Imphal West

#### Introduction:

The Liangmeis are one of the oldest tribes of Manipur. Ethnically and linguistically, they belong to the Tibeto-Burman family of the Mongoloid racial stock (Grierson 2000:477). The people of this tribe are found mainly in Tamei sub-division of Tamenglong District. They are found scattered also in the neighbouring districts of Tamenglong District, namely Chuchandpur District and Senapati District. The present paper attempts to look into the death and disposal of the Liangmei of Manipur.

According to Arnold Van Gennep (1960:11) the rites of passage are the rites and ceremonies that mark a critical transition in the life cycle of an individual from one status to another in a given society. These consists the process of separation from society, in calculation-transformation, and return to society in the new status. It usually covers birth, marriage and death. Kasheibon, funeral rites which are related to the interment beginning for the washing of the dead body, readiness for the burial of the dead and his voyage to the dead land and the stations through which the soul will precede his travel to the dead land (Tingkao Ragway Chapriak 2002:IV).

Death means the total cessation of life process that eventually occurs to all living beings. Among the Liangmeis, death is believed to be the departure of soul from the body permanently for the passage to the land of dead. And death usually takes place in the house. They bury their deceased body within the village. They have a graveyard for the village community. But, each clan also has its own burial place.

#### Types of death:

There are two types of death, namely Chura Mashit Sheibo and Tashit-Kasheibo.

Death due to sickness of an old age is considered as normal death; this is locally known as Chura Mashit Sheibo. Traditionally, the dead body is not bury only by the relatives of the deceased, but all the villagers take part in the funeral ceremony. Under this obligation, a formal announcement is made in the village; it is done by an elder of the village. As soon as the news reaches one's ear everyone will stop their works as a mark of condolence (Interview report). Moreover, it is a taboo as dead is unclean (Jevons:1986:59). On the day of burial, the villagers will bring gifts such as rice, wine to the bereave family as a sign of sympathy (Interview report).

It is a compulsory duty of every young men of the village to come at the house of the deceased and stay the whole night, if it does happen at night time. It is believed that if anyone in the house sleeps, he is liable to encounter the soul in dreams, and to sicken in consequence ( Hastings:418). So, the watchers ask riddles and play games to keep awaken.

The Liangmeis literally means people of the north; Liang means north and Mei, people.

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### TRADITIONAL BELIEFS AND PRACTICES OF THE LIANGMEI TRIBE WITH REFERENCE TO BIRTH: AN ETHNO-HISTORICAL APPROACH

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\*Assistant Professor of History Regional College, Lilong, Imphal West

#### ABSTRACT

*The rites of passage are the rites and ceremonies that mark a critical transition in the life cycle of an individual from one status to another in a given society. It usually covers birth, marriage and death. Birth is the first stage in the lifecycle of an individual. The birth ceremony of the Liangmeis comprises a number of rites such as cutting the umbilical cord, tying the baby's neck, leg with a black thread, taking only plain food by the mother, naming the child, fifth day Tajum Gibo ceremony etc.; the main objective of all these rites are to secure the child and sometimes the mother from evil forces and diseases. After birth, the young baby is developed, severed from the mother's body and becomes an independent individual. And the woman also has become a socially responsible mother. On fifth day, a ceremony is observed in which a name is given to the child, as without a name a person cannot be counted as a member of the family. The fifth day ceremony also recognizes the existence of the child and responsibility of the parents to bring up the young baby.*

*Keywords: Liangmeis, Birth ceremony, Tingwang, Kachapui, Tek Mumkhaibo*

#### INTRODUCTION

The Liangmei<sup>1</sup> are one of the oldest tribes of Manipur. Racially, they belong to the Mongoloid racial stock and speak the Tibeto-Burman language (Grierson, 2000:477). The population of this tribe is found mainly in Tamei sub-division of Tamenglong District, Manipur. These people are found scattered also in the neighbouring districts of Tamenglong District, namely Churachandpur District and Senapati District; outside the state of Manipur, they are found inhabiting in Juluke, Dimapur of Kohima District of Nagaland and Hailakandi District of Assam. The present article is a humble attempt to examine the traditional beliefs and practices of birth of the Liangmei tribe of Manipur.

#### METHOD AND MATERIALS

The present study has adopted ethno-historical approach. The data are based on available primary and secondary materials of published works and also on interview reports.

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# **ACADEMIC YEAR**

## **2019-2020**

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## 3.3 RESEARCH PUBLICATION AND AWARD

### 3.3.1.: NUMBER OF RESEARCH PAPERS PUBLISHED PER TEACHER IN THE JOURNALS NOTIFIED ON UGC CARE LIST DURING THE LAST FIVE YEARS

Sl.No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number
1	Soil Respiration in subtropical mixed disturbed forest and undisturbed mixed oak forest of Manipur, North- Eastern India.	Phurailaypam Apsara Devi	Botany	International Journal of Science and Research (IJSR), VOL.9, Issue Nov.2020	2019	ISSN: 2319-7064
2	A SURVEY ON IMAGE AND VIDEO UPSCALING AND MEASURING MATICES	Oinam James	Computer Science	Journal of Critical Reviews	2020	ISSN- 2394-5125 Vol 7, Issue 13, 2020

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International Journal of Science and Research (IJSR)  
ISSN: 2319-7564  
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## Soil Respiration in Subtropical Disturbed Mixed Pine Forest and Undisturbed Mixed Oak Forest of Manipur, North-Eastern India

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**Abstract:** Seasonal changes in soil respiration and its relationship with abiotic variables was studied in subtropical disturbed mixed pine forest and undisturbed mixed oak forest of Mothbung and Saparomeina Hill, Senapati District, Manipur located at a distance of 21.6km and 34km respectively from the Imphal city. Forest site I at Mothbung falls at 24.99°N latitude and 93.96°E longitude at an altitude of 970m and forest site II falls at Saparomeina falls at 25.04°N and 93.94°E at an altitude of 933m from the mean sea level by using alkali absorption method. The rate of soil respiration was highest during rainy season (472.99mg CO<sub>2</sub> m<sup>-2</sup> hr<sup>-1</sup> in disturbed pine forest site I and 534.72mg CO<sub>2</sub> m<sup>-2</sup> hr<sup>-1</sup> in undisturbed mixed oak forest site II) and minimum during winter season (165.72mg CO<sub>2</sub> m<sup>-2</sup> hr<sup>-1</sup> in disturbed pine forest and 124.31mg CO<sub>2</sub> m<sup>-2</sup> hr<sup>-1</sup> in undisturbed mixed oak forest). Abiotic variables (i.e. soil temperature, soil moisture, soil pH and soil organic carbon) also exhibited a positive significant relationship with the rate of soil respiration.

**Keywords:** Soil respiration, disturbed mixed pine forest site I and undisturbed mixed oak forest (Forest site II), abiotic variables

### 1. Introduction

Soil respiration is defined as the total CO<sub>2</sub> production in intact soils resulting from the respiration of soil microorganisms, roots and mycorrhizae. It is a useful parameter for studying soil biological activity, carbon cycling and energy flow in an ecosystem and is also considered as an important index of the decomposition system (Singh and Gupta, 1977). Hashimoto et al (2004) studied soil respiration in tropical forest of northern Thailand and reported that soil respiration was relatively high during the rainy season and low during dry season, although inter-annual fluctuation was large. Lashram et al, 2002; Bujayalaxmi and Yadava, 2008) studied soil respiration and its relationship with abiotic factor in different forest but limited information is available on soil respiration in subtropical disturbed pine and undisturbed mixed oak forests. Therefore, the present study was carried out to investigate the seasonal changes of soil respiration and its relationship to abiotic variables in subtropical disturbed mixed pine and undisturbed mixed oak forests of Manipur.

### 2. Study Area

The forest site is located at Mothbung that lies at 24.99°N and 93.96°E at an altitude of 970 m from the mean sea level and the forest site II is located at Saparomeina that lies at 25.04°N and 93.94°E at an altitude of 933m from the mean sea level. The average annual rainfall of the study area is 1131.8 mm, the mean monthly maximum ranges from 4.0°C (December) to 28.8°C (July) during the study period as shown in figure 1.

The disturbed mixed pine forest site I is dominated by *Pinus khasya* Royle, *Bambusa variegata*, *Emblica officinalis*, *Cestrum* species and other shrubs and herbs species. The disturbance occurs due to collecting of timber, grazing and other biotic disturbances. The undisturbed mixed oak forest site II is dominated by *Quercus serrata*, *Schinus molle*, *Quercus petraea* and other herbs and shrubs.

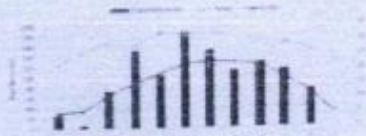


Figure 1: Climatological data of the study period

### 3. Materials and methods

The soil samples were collected from the upper layer of 0-10 cm in depth at monthly interval and brought to the laboratory for further analysis. The soil samples were sieved (2mm) to remove stones, roots etc. Soil texture was analyzed by pipette method. A soil thermometer was used to determine soil temperature. The soil moisture was measured by gravimetric method (oven dry at 105°C till constant weight). Soil pH was determined by Walkley Black method, total nitrogen by Kjeldahl method, Phosphorous by molybdenum blue method (Anderson and Ingram, 1993) Potassium was estimated by Flame photometer (Jackson, 1958).

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A SURVEY ON IMAGE AND VIDEO UPSCALING AND MEASURING MATICES

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Abstract

Image upscaling takes a key role in the field of image processing to enhance the image and video resolution for Super Resolution (SR) in the devices such as computer system as well as in smart phone. Nowadays many remarkable machine learning based techniques of image SR are being developed. In this paper a survey on current advanced image SR techniques which use the machine learning approaches with a systematic way is presented. It is also presented other topics regarding metrics along with publicly available benchmark datasets for evaluation of the performance. Here we give the conclusion for this survey after evaluation of the results by highlighting the merits and demerits of the techniques along with potential directions.

Keywords: Image Super-resolution, Image Upscaling, Machine Learning, Convolutional Neural Networks (CNN).

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INTRODUCTION

Digital photography takes a huge part of our everyday lives and we desperately need better picture quality, higher resolution and more functions. Images having many number of pixels as much as possible within a given size of the image is called High resolution (HR) image.

Therefore, a high quality photo provides important critical information usually for applications in various security and civil application like surveillance monitors, medical imaging, target identification etc. However, using higher image sensors and optics is a steeply-priced and additionally prescribing manner of increasing pixel density in the photo.

An image and video scaler/up-sampling is a system converting image/video signals from one resolution to another resolution. Scalers are usually used to transform a lower resolution signal like 480p (optical standard definition) to a higher quality resolution like 1080p (optical high definition) and the process is known as "up-conversion" or "up-scaling". In contrast, converting from high to low resolution is known as "down-conversion" or "downscaling".

The operation which associates the estimation of a fine-resolution image/video from a rough-resolution input image/video is often termed as image/video frame up-sampling. Since it can recover sharp edges and textures by suppressing pixel blocking means anomalies like noises and other visual artefacts from the coarse-resolution input image, it becomes an important imaging research topic in image processing.

Goal of image and video frame up sampling is to enlarge the dimension of the picture or video frame by maintaining the inverted information of the input image/video. So the term up-sampling/upscaling of image or video frame refers to a process which tries to achieve a High Quality Resolution pictures through the input low Quality Resolution (LR) pictures or multiple Low Quality Resolution pictures within the same scene. Human can interpret image or video scene only on improved detail of the scene and it can be provided by HR image/video.

Furthermore, due to physical and economical limitations of cameras, higher resolution camera cannot be used in on-board circuit of satellite. A LR image/video carries less information and it is caused by low resolution camera. Image and video up-sampling process aims to create such a High-Quality Resolution pictures and video from the available input Low Quality Resolution picture with a low cost imaging device.

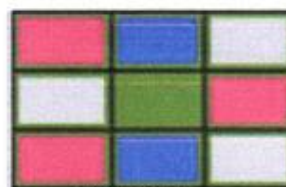
UP-SAMPLING METHODS

Up-sampling of an image, image frame, video might be classified in the following ways.

Based on Interpolation up Scaling

1. Interpolation using Nearest Neighbor.

In this type of up scaling interpolation, when resize the image or image frame the missing pixels are substitute with the nearest pixel of the missing pixel.



(a) 3x3 Pixel Image



(b) 7x7 up Sampled Image with Missing Pixels

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Sl.No	Title of paper	Name of the author/s	Department of the teacher	Name of the Journal	Year of publication
1	Common Injuries in Football Players of Manipur	Maibam Chourjit Singh <sup>1</sup> , Athokpam Manoranjan Singh <sup>2</sup> , Chetan Maibam <sup>3</sup> H. and Jibonkumar <sup>4</sup>	Physical Education	Wesleyan Journal of Research	Nov-20
2	New Rhipicephalus species(Family:Ixodidae) from cattle in Manipur, India	A. Jeeran and R.K. Gambhir	Zoology	Uttar Pradesh Journal of Zoology	21st Aug. 2020
3	Fine Root Biomass and nutrient concentration at subtropical disturbed mixed forrest and undisturbed mixed oak forest of manipur, north-eastern india	Phurailaypam Apsara Devi	Botany	International Journal of Science and Research (JSR), VOL.10, Issue 12 Dec.2020	Dec. 2020
4	SPRAIN AND STRAIN INJURIES OF KNEE IN FOOTBALL	Dr. MAIBAM CHOURJIT SINGH <sup>1</sup> , ATHOKPAM MANORANJAN SINGH <sup>2</sup> , Dr. CHETAN MAIBAM <sup>3</sup> AND Dr. H. JIBONKUMAR <sup>4</sup>	Physical Education	The International journal of analytical and experimental modal analysis	Oct-21
5	Study of Optical Properties of CaF <sub>2</sub> : Eu NANA PARTICLES SYNTHESIZED BY SIMPLE CHEMICAL CO-PRECIPITATION METHOD	L.Shantibala Devi, Th. Komol Singh and L. Rgahumani Singh	Physics	International Journal of Multidisciplinary Educational Research	May-21

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*Wesleyan Journal of Research*, Vol 13 No 42 (November 2020)

Research article: (P.E.)

### Common Injuries in Football Players of Manipur

Maibam Chourjit Singh<sup>1</sup>, Athokpam Manoranjan Singh<sup>2</sup>, Chetan Maibam<sup>3</sup> H. and Jibonkumar<sup>4</sup>

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<sup>3</sup>Assistant Professor, Dept. of Surgery, Regional Institute of Medical Sciences, (RIMS), Manipur

<sup>4</sup>Assistant Professor, Dept. of Anthropology, Presidency College, Govt. of Manipur

**Abstract:** The main goal of the study is to find out the significant difference between common injuries in Manipur footballers. The subjects are randomly selected 48 football players, including 24 forwards and 24 defenders, aged 19 to 30 years. Injuries, namely cut and bruise, knee and ankle sprains, were selected as variables for this study. Data is collected from the venue of the Tournament by watching each match. Classic statistics such as mean, standard deviation, t-test and correlation are calculated with a 0.05 probability level. Based on the outcomes of the analysis, it can be concluded that forwards have a higher risk of injury than defenders. Still, there is no significant difference in knee sprain between the two positions. However, there is a moderately high correlation in the selected injuries.

**Keywords:** Injuries, Cut & Bruise, Knee Sprain, Ankle Sprain, Striker, Defender.

#### Article History

Received: 15/10/2020; Accepted: 15/11/2020

Corresponding author: Maibam Chourjit Singh

#### 1. Introduction

Football in various forms is, without doubt, the most popular sport in the world. Football or soccer is by far the largest sports in the world. It is the most popular sport in the world played in all countries without exception. The sport has a rich history, although it was formalized as we know it today with the conception of the Football Association in 1863. The game soon spread to continental Europe and then to South America and other continents. The world governing body, the Federation of the International Football Association (FIFA), was established in 1904, and the first Olympic football competitions were held four years later. In 1993, the Federation International de Football Associations (FIFA) represented 179 national football associations.

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## SPRAIN AND STRAIN INJURIES OF KNEE IN FOOTBALL

Dr. MAIBAM CHOURJIT SINGH<sup>1</sup>, ATHOKPAM MANORANJAN SINGH<sup>2</sup>,

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### Abstract

The main goal of the study is to find out the significant difference of sprain and strain injuries of knee in the game of football with especially reference to the 60<sup>th</sup> CC-MEET football tournament of Manipur. The subjects are randomly selected from this particular tournament comprising 50 male football players consisting of 25 right wingers and 25 left wingers ageing 19 to 30 years. The relevant data are collected from the venue of the tournament by watching and observing each match with the help of the medical team assigned by the organizer for the whole tournament. Classical statistics such as mean, standard deviation, t-test and correlation are calculated with 0.05 probability level of significance. Based on the outcomes of the analysis, it is concluded that though right wingers have a higher risk of injury than left wingers in both the sprain and strain injuries of knee, there is no significant difference in both the injuries between the two positions.

**Keywords:** Injuries, Knee sprain, Knee strain, left wing, right wing and CC-Meet.

### INTRODUCTION

Football in various disciplines is, without a doubt, the most popular sport in the world. Football or soccer is by far the greatest sport in the world. It is the most popular sport in the world practiced in all countries, without exception (Goal, 2020). The sport has a rich history, although it was formalized as we know it today with the creation of the Football Association in 1863. The sport soon spread to continental Europe and then to South America and other continents. The world governing body, the Federation of the International Football Association

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**A NEW *Rhipicephalus* species (Family: Ixodidae) FROM CATTLE IN MANIPUR, INDIA**

**A. JEERAN<sup>1\*</sup> AND R. K. GAMBHIR<sup>1</sup>**

<sup>1</sup>Department of Zoology, Parasitology Section, Manipur University, Canchipur, 795003, Manipur, India.

**AUTHORS' CONTRIBUTIONS**

Both the authors' co-operate with each other and contributes maximum effort to complete this research work. Finally, the authors have read and approved the manuscript.

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**Original Research Article**

**ABSTRACT**

The present paper deals with the occurrence of a species of tick belonging to the genus *Rhipicephalus*. The species under this genus have usual morphological features viz., having a hard sclerotized scutum which completely cover the dorsal surface of the body in males but present a small shield just behind the capitulum in female, basis capitulum is hexagonal in shape, mouth part anterior in position, eyes if present are located near the lateral margin of the scutum, presence of adanal plate in male, presence of festoons, etc. The present specimen, was encountered amongst a group of ticks that had been collected from cattle (*Bos indicus*) from Singda Kadangban (24°54'9" N, 93°53'2"E), Imphal West District, Manipur, India. On detail microscopic observation, under (CH20i) the present specimen was found to possess certain prominent variation differentiating from that of the known species, closest one being *Rhipicephalus bursa* on some distinct morphological characters like accessory adanal plate, adanal plate, sub-anal plate, spiracle, spiracle area, etc. These morphological variations are quite prominent and authentically support to the erection as a new species, to accommodate it under the genus *Rhipicephalus* giving the name of species as *R. kadangbandi*, taking the locality of occurrence.

**Keywords:** Tick; *Rhipicephalus*; *Bos indicus*; Singda Kadangban; Manipur.

**1. INTRODUCTION**

The first rhipicephalid recognized was the cosmopolitan species *Rhipicephalus sanguineus* [1,2,3,4] collected in France and described by Pierre Andre Latreille (1806) [5,4]. He placed this tick under the genus *Ixodes* but Koch (1844) [5,4] reclassified it as a member of his newly created genus

*Rhipicephalus* and at the same time described three new species, *R. capensis*, *R. senegalensis* and *R. simus* [1,2,3,4]. The family Ixodidae composed of approximately 13 genera of which the genus *Rhipicephalus* is one of the largest. Members of the family Ixodidae, to which the genus *Rhipicephalus* belongs, are characterized by having a hard sclerotized scutum, which completely covers the

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## FINE ROOT BIOMASS AND NUTRIENT CONCENTRATION AT SUBTROPICAL DISTURBED MIXED FOREST AND UNDISTURBED MIXED OAK FOREST OF MANIPUR, NORTH-EASTERN INDIA.

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### Abstract:

Fine root biomass and its nutrient concentration in different soil depths (0-10cm, 10-20cm and 20-30 cm) were studied in disturbed mixed pine forest (forest site I) and undisturbed mixed oak forest (forest site II) at Senapati District, Manipur. Fine roots from both the study sites were collected by soil corer. Maximum fine root biomass were found in 1-10 cm (2037.80 gm<sup>2</sup> in forest site I) and 2170.63 gm<sup>2</sup> in forest site II) throughout the year in both the study sites. Maximum fine root biomass was found in the month of December (205.65 gm<sup>2</sup> and 223.40 gm<sup>2</sup> in forest site I and site II respectively). The amount of nutrient (NPK) in fine roots varies in different soil depth in both the study sites throughout the year.

### Index terms:

Live fine roots, nutrient concentration (NPK), disturbed mixed Pine forest (forest site I), undisturbed mixed oak forest (forest site II).

### Introduction:

Fine roots (<2.00mm represent a dynamic portion of belowground biomass. The fine root only a small fraction of the total root biomass. The fine roots play an important role in the soil profile development and after the dead also adds to the organic matter of the soil thus enriching the soil fertility. The quantity and activity of the small diameter of the root systems are of great significance as regards to water and nutrient supply. The knowledge of fine root biomass is important for understanding energy flow and nutrient cycling (Aarits et al 1992; Khiewtmar and Ramakrishnan 1993). Fine roots conserve the nutrients by preventing the leaching losses from the ecosystem. Studies on fine root dynamics in forest ecosystem have been studied by several workers (McClougherty et al 1982; Fitter 1985; Vogt et al 1990; Pregitzer et al 2002) but there is limited information on fine root biomass and nutrient

concentration (NPK) in three different soil depths in the disturbed mixed pine and undisturbed mixed oak forests in the subtropical forest at Senapati District of Manipur. The present study aims to study the fine root biomass and nutrient concentration (NPK) from three different soil depths in subtropical forest.

### Study sites:

The study sites are situated in the Senapati District of Manipur. The forest site I is located at Moibung that lies at 24.99°N and 93.90°E at an altitude of 970m from the mean sea level and the forest site II is located at Saparmeina that lies at 25.84°N and 93.94°E at an altitude of 933m from the mean sea level. The climate of the area is monsoonic with warm moist summer, a distinct rainy season and cool dry winter. The average annual rainfall of the study sites is 1131.8 mm, the mean monthly maximum ranges from 4.9°C (December) to 28.8°C (July) during the study period as shown in figure 1.

The disturbed mixed pine forest (forest site I) is dominated by *Pinus Khezya Roylei*, *Bauhenia Vorelgata*, *Emblica officinalis*, *Cedrela toona* and other shrubs and herbs species. The disturbed mixed oak forest is dominated by *Quercus serrata*, *Schinus wallichii*, *Quercus polytachya* and other shrubs and herbs.

### Result:

The soil of forest site I is sandy loam in texture (sandy 42%, silt 25% and clay 33%). The soil temperature ranges from 8° to 30°C, soil pH ranged from 4.63 to 6.57, soil moisture ranged from 0.727 to 26.13%, soil organic carbon ranged from 0.092 to 4.8%, soil total nitrogen ranged from 0.092 to 0.587%, soil available phosphorous 0.021 to 0.096% and soil potassium ranged from 0.115 to 0.482% as shown in table 1 & 2.

The soil forest site II is clayed loam in texture (sand 32%, silt 25% and clayed 42%). The

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**STUDY OF OPTICAL PROPERTIES OF CaF<sub>2</sub>: Eu NANOPARTICLES SYNTHESIZED BY SIMPLE CHEMICAL CO-PRECIPIATION METHOD****<sup>1</sup>L. Shantibala Devi, <sup>2</sup>Th. Komol Singh and <sup>3</sup>L. Rgahumani Singh**<sup>1&2</sup>Department of Physics and <sup>3</sup>Department of Electronics<sup>1&2</sup>CMJ University and <sup>3</sup>D.M. College of Science<sup>1&2</sup>Jorabat, Meghalaya and <sup>3</sup>Imphal, Manipur  
India**Abstract**

In this work, nanoparticles of europium doped calcium fluoride (CaF<sub>2</sub>:Eu) has been prepared by Simple Chemical Co-Precipitation Method in which 0.05 mol of CaCl<sub>2</sub> is used as the calcium ion source and 0.05 mol of NH<sub>4</sub>F as the fluoride ion source. 1 mol% of Eu(NO<sub>3</sub>)<sub>3</sub> was used as the dopant. The synthesized nanoparticle samples was characterized by X-ray diffraction (XRD) and the average crystallite size was found to be 25.58 nm. The energy band gap is found to be 3.75 eV.

**Keywords:** Calcium Flouride, Co-Precipitation, Dopant, Nanoparticles, X-ray Diffraction.

**Introduction**

As alkaline-earth fluorides exhibit single properties, it finds a number of applications in optics and electronics [1]. Fluorides are transparent in a wide wavelength region from Vacuum Ultraviolet (VUV) to Infrared (IR) due to its large band gap [2,3]. The fluoride materials normally possess low refraction index and phonon energies, usually in the range of 400–500 cm<sup>-1</sup> as compared to oxides [4], which in turn can decrease the nonradioactive transition probability of the active ions [5]. These materials also find their applications in laser and frequency conversion when their features are combined with the spectroscopic characteristics of rare earths used as doping ions [6]. Therefore, they can act as the window materials for both ultraviolet and infrared wavelength regions [7]. As calcium fluoride (CaF<sub>2</sub>) possesses good stability, non-hygroscopic behavior and applications as optical device, especially in ultraviolet and vacuum ultraviolet (VUV), it had considerable interest among the various fluorides. CaF<sub>2</sub> being one of the alkaline-earth fluorides, it has a well-known fluorite-type structure. Each Ca<sup>2+</sup> ions lie at the nodes in a face-centered lattice whereas F<sup>-</sup> ions lie at the centers of the octants [1,8]. CaF<sub>2</sub> nanoparticles exhibit high laser induced damage threshold and high transparency up to vacuum ultraviolet. Therefore, they can be considered as the most promising candidate to replace the fused silica for deep ultraviolet laser lithography techniques and ultraviolet transparent optical lenses [9]. Furthermore, CaF<sub>2</sub> can act as optical waveguide for optoelectronic devices [10,11]. RE-doped CaF<sub>2</sub> is also becoming an attractive material for up-conversion (UC) luminescence and can be compared with RE-doped NaYF<sub>4</sub>, which is broadly acknowledged as the most efficient UC host [12–15].

In the last 5 years, fluoride compounds are more attracted due to the possibility of preparing nano powders of fluorides which can produce ultimate effects on their physical properties [16]. Therefore, a number of synthesis methods had been employed to produce CaF<sub>2</sub> nanoparticles such as co-precipitation method [17], hydrothermal method [18–20], reverse micelle method [3], etc. Since the fluoride compounds are very sensitive to water and oxygen which are always present in the environment, the production of fluoride compounds is a challenge for researches. The possibility of contamination with impurities like O<sup>2-</sup> and OH<sup>-</sup> is very high due to similarity of the ionic radius [21,22]. Such impurities can affect the luminescence properties [23] acting as luminescence quenching centers, degradation of the transparency, lights scattering defects and others. However, the chance to incorporate these impurities can be reduced by following the process of annealing. Further, the liquid-phase methods have the advantages of simple operation, controllable granularity and the nanoscale powders materials thus prepared have high surface activity. So, in this work, we synthesized CaF<sub>2</sub> nanoparticles by Co-Precipitation method.

**Experimental Details**

Eu doped Calcium Fluoride nanoparticles was prepared by the chemical co-precipitation method. Calcium chloride and ammonium fluoride of AR grade were taken as the calcium ion source and fluoride ion source respectively. 0.05 mol of CaCl<sub>2</sub> was dissolved separately in 20 ml double distilled water to form a clear solution. 0.05 mol of NH<sub>4</sub>F was also dissolved in 20 ml of distilled water to form a clear solution. Then 1 mol% of Eu(NO<sub>3</sub>)<sub>3</sub> was added to the CaCl<sub>2</sub> solution and the mixture was stirred continuously for 20 minute and subsequently 50 ml ethanol was added to the solution. The same is further stirred for 10 min. The NH<sub>4</sub>F solution was added drop wise in the solution until the precipitation was complete. The precipitates so formed were filtered out and washed four times with double distilled water. The precipitate was finally dried at 120°C for 5 h. to obtain the sample. The sample is crushed to

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Sl.No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Calendar Year of publication	ISSN number
1	First report of Rhipicephalus deltoideus from Manipur, India	A. Jeeran and R.K. Gambhir	Zoology	Flora and Fauna	20th Sep. 2021	2456 - 9364 (Online) 0971 - 6920 (Print)
2	Effect of Time and Electric Field in Teflon Bioelectrets	S.Jinibala Devi	Physics	International Journal of Creative Research Thoughts(IJCRT)	Feb-22	ISSN:2320-2882
3	Haematoma and Haemorrhage Injuries in Football	Dr. Maibam Chourjit Singh, Dr. Chetan Maibam, Dr. H. Jibonkumar and Athokpam Manoranjan Singh	Physical Education	International Journal of Economic Perspectives,15(1),358–367	18-Dec-21	ISSN: 1307-1637

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**First report of *Rhipicephalus deltoideus* from Manipur, India**

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**Received** : 25.08.2021; **Accepted** : 20.09.2021

**ABSTRACT**

The present paper deals record of a *Rhipicephalus* tick, reported for the first time from Manipur, a new record of India. The species under this genus have usual morphological features viz., having a hard sclerotized scutum which completely cover the dorsal surface of the body in males but present a small shield just behind the capitulum in female, basis capitulum is hexagonal in shape, mouth part anterior in position, eyes if present are located near the lateral margin of the scutum, presence of adanal plate in male, presence of festoons, etc. The present specimen which is reporting as a new record was collected from cattle (*Bos indicus*) from Wakha (24°46'22" N, 93°59'12"E) Imphal East District, Manipur, India. On detailed microscopic observation, the present specimen was found to possess the morphological characters similar to the already known *Rhipicephalus* species, *Rhipicephalus deltoideus* is a first record from India.

Figures : 02

References : 06

Table : 01

KEY WORDS : *Bos indicus*, Cattle, Manipur, *Rhipicephalus*, Tick, Wakha.

**Introduction**

Ticks are obligate blood-feeding acarine parasites feeding on the blood of terrestrial vertebrates at some stage of their life cycle. Many species are of considerable interest and clinical importance as vectors of a wide variety of pathogens to both humans and animals<sup>1</sup>.

They are members of the phylum Arthropoda, class- Arachnida, order- Acarina. Within the Acari, the suborder Ixodida consists of three families of ticks - Argasidae, Nuttalliellidae and Ixodidae. The systematics of the Ixodida were reviewed. The members of the genus *Rhipicephalus* are characterized by having a hard sclerotized scutum which completely covers the dorsal surface of the body in the males but is merely a smaller shield just behind the capitulum in the females and immature stages; hypostome and palps are short, presence of hexagonal shape basis capituli when viewed dorsally, presence of festoon, mouthparts of all these ticks are anterior in position; their eyes, when present, are near the lateral margin of the scutum, and their spiracles, which are large, are located behind coxae IV, adanal plate is present only in the male. The family

Ixodidae consists of approximately 13 genera of which the genus *Rhipicephalus* is one the largest<sup>6</sup>. The present specimen belonging to the genus *Rhipicephalus* was recovered from the cattle (*Bos indicus*) which are domesticated in the locality of Wakha, Imphal East District, Manipur (India) during the month of July- August, 2020. The purpose of the present study is to explore the tick fauna from different parts of Manipur (India) that remain unexplored for long period so far and for proper cataloguing of the existing ticks, from this region.

**Materials and Methods**

The tick parasites were collected by hand manually or by large forceps according to the convenience from the body of the cow and kept inside collection bottle containing 70% alcohol and brought to the laboratory. The collected specimens were preserved in 70% ethyl alcohol containing few drops of glycerol. After removing from the preservative, the ticks were placed in water for one hour and were then transferred in a cavity block containing 10% KOH solution and keep in this medium for at least 24 hours until it is suitably cleared. Then the ticks were washed thoroughly in water to remove KOH and were

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## Effect of Time and Electric Field in Teflon Bioelectrets

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### Abstract:

Bioelectret of Teflon sheet was prepared for the polarizing time of 5, 6, and 7 hr with a field strength of 700, 800, and 1000 kV/m at room temperature (300 K). The thermally stimulated discharge current (TSDC) spectra of Teflon were complex and were composed of two peaks of opposite polarity. This suggests that there are two separate mechanisms for the release of TSDC. In addition, TSDC spectra of non-polarized Teflon sheets give triple reversal from positive to negative, negative to positive, and again from positive to negative.

**Keywords:** Bioelectret, Teflon, TSDC, polarizing time, spectra, homocharge.

### Introduction:

Polytetrafluoroethylene (PTFE) also known as Teflon is a class of polymer with the chemical structure of PTFE  $[\text{CF}_2-\text{CF}_2]$ , is like that of polyethylene (PE), except that the hydrogen atoms are completely replaced by fluorine (hence it is referred as a perfluoro polymer). The fluorine content in PTFE is theoretically 76% and it has 95% crystallinity. It is the size of a fluorine atom which forms a uniform and continuous sheath around carbon-carbon-bonds and hence imparts good chemical resistance and stability to the molecule. This uniform fluorine sheath also provides electrical inertness to the molecule.

PTFE has a wide range of practicable temperatures from  $-180^\circ\text{C}$  to  $+260^\circ\text{C}$  and a wax-like surface to which anything is hardly plastics. PTFE has the lowest coefficient of friction of all known solid materials. It has the best electrical properties of all plastics. Today, PTFE applications range from low-tech non-stick frying pan surfaces to high-tech exotic medical and hospital uses including implants, surgical instruments, test equipment, and dramatic uses in firefighting equipment etc<sup>1</sup>.

PTFE has excellent properties such as chemical inertness, heat resistance (both high and low), electrical insulation properties, low coefficient of friction (static 0.08 and dynamic 0.01), and exhibits high thermal stability without obvious degradation below  $440^\circ\text{C}$ . It has excellent electrical properties such as high insulation resistance, extremely low dielectric constant (2.0) due to the highly symmetric structure of the macromolecules. These properties come from the special electronic structure of the fluorine atom, the stable carbon-fluorine covalent bonding, and the unique intramolecular and intermolecular interactions between the fluorinated polymer segments and the main chains.

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Retrieved from <https://ijeponline.org/index.php/journal/>

## Haematoma and Haemorrhage Injuries in Football

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### Abstract

The purpose of the study is to investigate and find out the variation in Haematoma and Haemorrhage traumatic injuries among the football players during match according to their positions, levels and stages of the tournament. From 61<sup>st</sup> Sir Churachand Singh KCSI-CBE Memorial Football Tournament (CC Meet) 2018-2019, 11<sup>th</sup> Manipur State League 2016 (MSL) Football Tournament and Thangjam Birachandra-Maipakpi Memorial 22<sup>nd</sup> -winners' Cup for Men Football Tournament, altogether 133 matches 798 (133 matches x 6 position) positions of the players consisting of state and national levels players in the entire tournaments are taken as source of subjects. The variations in the selected types of injuries are found to be statistically insignificant ( $P > 0.05$ ) between state level and national level matches in the study population. The notable variations in stage-wise injury rate of haemorrhage are found to be league ( $0.00 \pm 0.040$ ), pre-quarter final ( $0.03 \pm 0.181$ ) and semi-final ( $0.03 \pm 0.167$ ) while their overall figure of  $0.01 \pm 0.071$ . Out of the two types of injuries, haematoma ( $F = 7.69$ ;  $P < 0.01$ ) is found to be highly significant according to positions of the players in the tournaments viz., mid-fielder, striker, right-wing, left-wing, defender and goalkeeper. On the other hand, the variation in haemorrhage is observed to be statistically significant ( $P < 0.05$ ) with respect to the different positions of the players in the tournaments under study. Thus, it is concluded that variation in the Haematoma and Haemorrhage traumatic injuries among the football players of Manipur according to their position as well as stages of the tournament can be seen. Besides, it is also seen that the traumatic injuries in the football players who are playing at the national level are higher in the occurrence of injuries than the state level.

**Keywords: Traumatic, Injuries, Haematoma, Haemorrhage, Football and Position.**

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Sl.No	Title of paper	Name of the author/s	Department of the teacher	Name of the Journal	Year of publication	ISSN number
1	An Assessment of Mental Toughness Among Taekwondo and Thang-ta Player	Johnson Nameirakpam, Dr. Y. Wise Blessed Singh	Physical Education	Journal of Xi'an Shiyou University, National Science Edition	Jan-23	ISSN:1673-064X
2	Image Super Resolution Based on Machine Learning for Enhancing Quality Image	Oinam James, Th. Rupachandra Singh, T. Romen Singh	Computer Science Department	IEEE	2023	Electronic ISBN:979-8-3503-9938-7 Print on Demand(PoD) ISBN:979-8-3503-9939-4
3	Comparison of coordinative abilities on taekwondo players mixed martial arts fighters and judokas	Johnson Nameirakpam, Dr. Y. Wise Blessed Singh	Physical Education	GIS Science Journal	2023	ISSN NO: 1869-9391
4	Study of Sensation Seeking and Anxiety State between Students of Management and Physical Education	Johnson Nameirakpam, Nongmaithem Aristotle Singh, Naorem Asha Devi, Dr. Y. Wise Blessed Singh, Kh.Rakesh Singh	Physical Education	International Journal of Creative Research Thoughts(IJCRT)	Mar-23	ISSN:2320-2882
5	Structural Characterization of CaF <sub>2</sub> : Dy Nanoparticles Synthesized by simple Chemical Co-Precipitation Method	L.Shantibala Devi,L.Raghumani Singh, Th. Komol Singh	Physics	Journal of Scientific research	2022	doi:10.37398/JSR.2022.660419

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Journal of Xi'an Shiyou University, Natural Science Edition ISSN: 1673-064X

AN ASSESSMENT OF MENTAL TOUGHNESS AMONG  
TAEKWONDO AND THANG-TA PLAYERS

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**Abstract:**

The goal of this research was to examine the Mental Toughness among Taekwondo and Thang-Ta players. To analyze the data on mental toughness the following mental toughness dimensions namely Rebound ability, Handling pressure, Concentration, Confidence and Motivation were taken up for the present study. The mental toughness was tested on a total 60 male players who participated in the national level competitions. Among them thirty players were Taekwondo players (N=30) and the remaining thirty players were Thang-Ta players (N=30). Their aged ranged from 18- 26 years old. To compare the significant difference between the two groups independent t- test was employed for data analyses by using the statistical software SPSS. It was discovered that there is insignificant difference in overall mental toughness and various dimensions of mental toughness i.e rebound ability, handling pressure, concentration and motivation but significantly differs in 'confidence' only.  
**Keywords:** *Mental toughness, Thang-Ta, Taekwondo.*

**INTRODUCTION**

Thang-ta is a combat sport incorporating a variety of striking and grappling techniques. Fights are won by knockout, submission, referee intervention, or a judges' decision at the end of the regulation time. Typical amateur bouts are scheduled for three 3-minute rounds, whereas

<http://xisdxjsu.asia>

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## Image Super Resolution Based on Machine Learning for Enhancing Quality Image

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**Abstract**— Image High Resolution takes a principal function to the region of the photograph filtering to enhance the photograph and video frames for Enhanced Resolution in gadgets such as laptops and smartphones. This presents a deep learning technique for enhancing resolution for single picture super resolution. The method directly learns an end to end mapping between low quality and high-quality resolution pictures. A deep convolutional neural network represents the mapping, which takes the poor resolution picture as input and produces a high quality resolution image.

**Keywords**— High-resolution Photograph, Image Upscaling, Machine Learning, CNN.

### I. INTRODUCTION

Digital photography has become an integral part of our daily life. It increasingly requires superb image quality of higher resolution and increased usefulness. High-resolution (HR) images contain as many pixels as feasible within a given image size. As a result, a high-resolution snapshot typically provides vital or even critical information for several security and civic applications like surveillance monitors, medical image purposes, target identification, and so on [1].

A system that converts image photographs or video frames from one resolution to another is known as image and video scaling up-sampling [2]. Changing a lower resolution signal, such as 360 pixels standard definition, to a higher quality resolution, such as 1080 pixels high definition, is known as up-sampling or up-scaling, as well as super resolution [3]. Changing image pixels from a higher to a lower resolution is called down-sampling or downscaling [4]. Single image or scaling up of video frames (multiple photographs of a scene) is a phrase used to describe the method for generating a good resolution single image or numerous frames (video) [5] resulting from a poor resolution input. It becomes a significant imaging study issue in image processing because minimizing pixel block may retain textures and fine edges from the outcomes in noise and other visual abnormalities from the poor quality resolution source of the input images.

To achieve better image and video enhancement, it has to expand the size of a photograph or video pixel frame without deforming properties from the input low-quality resolution photograph or video frames [1]. As a result, picture or video frame up-sampling up-scaling refers to generating a high-quality photograph from a poor-quality resolution

photograph or numerous poor-quality resolution pictures of the identical region(video). Only greater scene detail, which can be offered by HR image/video, allows humans to interpret picture or video scenes [5].

### II. CONVOLUTIONAL NEURAL NETWORKS

A Convolutional Neural Network is a technical part of deep learning network design that analyzes input without the human hand needing to work to extract features [6]. CNN are particularly effective for recognizing patterns in photos, like recognizing things, human faces, and places involved for security purposes [7].

The use of convolutional neural networks (CNNs) for deep learning is common for three reasons. Firstly the use of CNN brings down the desire for humans (manual) because CNN trains the image data directly to extract features [8]. Secondly, in terms of recognition, CNN output data are quite accurate. Lastly, CNNs may also use for recognizing new activities, enabling the expansion of pre-existing networks.

Super Resolution technique is the conversion of poor-quality resolution photos into high-resolution pictures. Single Image-High Resolution (SIHR) and Video-High Resolution (VHR) are high-quality resolution techniques. The purpose of SIHR is to transform low-quality photographs into better high-quality ones. VHR aims to rebuild low-quality resolution videos into high-quality resolution videos derived from SIHR [9].

Regarding multi-layer neural networks, a CNN analyzes pictures [10]. CNN for super resolution aids in effective training implementation, convenient data access, and faster and higher-quality training of more prominent models. Feature retrieval and representation, non-linear mapping, and restoration(reconstruction) [11] are the core components of CNN video super resolution approaches. These modules are helpful for better performance. These characteristics may lead to better image outcomes.

The procedure of extracting features and meaningful representation from low-resolution pictures for improved output is known as feature extraction and representation. Non-linear mapping is a process in which features are translated non-linearly from one high-quality dimensional image vector to another high-quality dimensional image vector. The last stage is reconstruction, which integrates the predictions to estimate High resolution (HR) pictures. Fig. 1 shows the overview of the network.

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COMPARISON OF COORDINATIVE ABILITIES ON TAEKWONDO PLAYERS  
MIXED MARTIAL ARTS FIGHTERS AND JUDOKAS

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**Abstract**

The aim of the study was to compare the coordinative abilities of taekwondo players, mixed martial arts fighters and judokas. Totally 75 athletes were chosen for the study 25 taekwondo players, 25 MMA fighters and 25 judokas whose age between 18-22. All risks and benefits pertaining to the study were explained to the athletes. Ball reaction exercise test, Numbered Medicine ball run test, Long nose test, Sprint at given rhythm and Backward Medicine ball run test were used for the purpose for determining Reaction ability, orientation ability, Balance ability, Rhythm ability and Differentiation ability of the athletes participating into the study. The collected data were statistically analyzed by using one way Analysis of variance (ANOVA) statistics. To find out the paired mean difference, the Scheffe's post hoc test was used. The level of confidence was fixed at 0.05. According to the findings, it is concluded that MMA fighters has higher differentiation abilities than taekwondo players and judokas. And, judokas has higher orientation abilities, reaction abilities, balance abilities and rhythm abilities follows by taekwondo players and MMA fighters. It is also concluded that athletes practicing judo has more coordinative abilities as compare to mixed martial arts and taekwondo.

Keywords: coordinative abilities, Taekwondo, MMA, judokas, differentiation, orientation, rhythm, balance, orientation.

**Introduction**

Coordinative abilities are known as skill, competence and mastery defined by the body motion control and orientation process. The skill Word used by many authors in the literature has a more restrictive meaning compared with wealth (complexity) which defines the distinctive indications of these abilities. The same authors define the coordinative abilities as follows. It is a psychometric qualities' mixture that is unique to the activities in various types by restructuring the physical basis that principally exists, orients itself to the different situations in a fast and efficient way implies the ability of learning new motions quickly (Smidu, 2014). Motor coordination is defined as the ability of displaying the motions containing skill in a fast, fluent and successful way (Connick et al. 2015).

Judo is a sport that entails the complex motions to be performed and high-level planning to be used. It is seen that there are differences in the regional brain morphology of judoka and athletes of other defense arts compared with sedentary individuals (Jacini et al., 2008). In other words, judo is a dynamic sport which contains high-density intervals requiring complex skills and tactical excellence for the success. Judoka must perform many actions during the match (Degoutte et al., 2003).

Mixed martial arts(MMA), sometimes referred to as cage fighting, no holds barred and ultimate fighting, is a full contact combat sport based on striking, grappling and ground fighting, incorporating techniques from various combat sports from around the world. Mixed martial arts (MMA), a combat sport consisting of wrestling, boxing, and martial arts, is a popular activity associated with danger and violence. The popularity of combat sports and especially Mixed Martial Arts (MMA), through the Ultimate Fighting Championship (UFC) fights, has been growing fast, with a large number of athletes being involved in MMA training and fights, while the number of spectators and fans has also increased rapidly (La Bounty et al., 2011).

Taekwondo has been a part of the Olympic demonstration program since Seoul 1988 and Barcelona 1992, before becoming an Olympic discipline from the Sydney 2000 Olympic Games. In this paper we

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## STUDY OF SENSATION SEEKING AND ANXIETY STATE BETWEEN STUDENTS OF MANAGEMENT AND PHYSICAL EDUCATION

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**Abstract:** The purpose of the study was to analogy on the sensation seeking and anxiety state in the management and physical education. So the study entitled as "A Study of Sensation Seeking and Anxiety State between Management and Physical Education Students. The objectives of the study were (i) to know the level of sensation seeking and anxiety in management and physical education students; (ii) to examine the sensation seeking and anxiety state between management and physical education students. It was hypothesized that (i) the sensation seeking in management students will be higher than the physical education students (ii) the anxiety state of management students will be lower than the students of physical education. The Significance of the study will be helpful in knowing the level of personality traits between Physical education and management students, which would help them in altering their present traits, if the traits could not cope with their present achievements. It will also help in formulating the psychological programs, curriculum and schedules of teaching or training on the basis of their sensation and anxiety levels by their teachers and their coaches. In this study Seventy Eight male and female (78), post graduate pursuing subjects were randomly selected from department of Physical Education and Management from Annamalai University. The age of the subjects was ranging from 18 to 27 years. To compare the sensation seeking and anxiety state between Physical Education Students and Management Students, Z test was applied. Further the level of significance was set at 0.05 level of confidence.

**Index Terms:** Sensation Seeking, Anxiety State, Management, Physical Education.

### I. Introduction

There are different variables in psychology which affects the performance of an individual in all spheres of his living like in sports or academic and so on. Some of the variables of psychology named Anxiety, Aggression, stress, Fear, Sensation and Arousal, etc. are certainly important to drive an individual for his performance. The study of sensation seeking and anxiety could also be a vital tool to examine the performance of the students in academics and sports. There are different variables in psychology which affects the performance of an individual in all spheres of his living like in sports or academic and so on. Some of the variables of psychology named Anxiety, Aggression, stress, Fear, Sensation and Arousal, etc. are certainly important to drive an individual for his performance. The study of sensation seeking and anxiety could also be a vital tool to examine the performance of the students in academics and sports.

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## A Study on Feminine Consciousness in Toni Morrison Novel

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### Abstract

Toni Morrison's writing style is easily distinguishable due to her unique use of language. Her novels are easy to read, and she incorporates many different styles into her writing, such as switching the voice of narration throughout her stories for a change of perspective. Some of her most commonly used techniques are the use of descriptive analogies, important historical references, and varied sentence structure.

**Keywords:** Story, Historical, Writing, Important

Toni Morrison was born Chloe Ardelia Wofford on February 18, 1931 in Lorain, Ohio, to Ramah and George Wofford, she later took the name Anthony, shortened to Toni. As a child she enjoyed storytelling and reading, so it was assumed that she would do well in school. Her upbringing inspired many of her novels (Bloom 10). From her family she was taught to have a strong, black self-image which is prevalent in her novels. Maternal authority and equality in marriage. Power in black community, African American identity, shame, trauma, and family life.

Today, the feminist literary criticism is the direct product of the 'Women's movement' of the 1960s. This movement was literary from the beginning, in the sense that it realized the significance of the images of women promulgated by literature, and saw it as vital to combat them and question their authority and their coherence. Black feminism argues that sexism, class oppression, and racism are inextricably bound together. Forms of feminism that strive to overcome sexism and class oppression but ignore race can discriminate against many people, including women, through racial bias.

Feminists such as Alice Walker (1983) believed that black women experienced a different and more intense kind of oppression than that of white women. They point to the emergence of Black feminism, after earlier movements led by white middle-class women, which they regard as having largely ignored oppression based on race and class. Patricia Hill-Collins (1991) defined Black feminism, in *Black Feminist Thought*, as including women who theorize the experiences and ideas shared by ordinary black women that provide a unique angle of vision on self, community, and society.

### Aims of Study

The aims at studying and critically exploring the major novels by Morrison. The scholars around globe have attempted to study and scrutinize her novels from different points of view such as social realism, male domination and double harassment by Black as well as White.

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## Structural Characterization of $\text{CaF}_2$ : Dy Nanoparticles Synthesized by Simple Chemical Co-Precipitation Method

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**Abstract:** In this work, nanoparticles of dysprosium doped calcium fluoride ( $\text{CaF}_2$ :Dy) has been prepared by Simple Chemical Co-Precipitation Method in which 0.05 mol of  $\text{CaCl}_2$  is used as the calcium ion source and 0.05 mol of  $\text{NH}_4\text{F}$  as the fluoride ion source. 1 mol% of  $\text{Dy}_2\text{O}_3$  was used as the dopant. The synthesized nanoparticle samples was characterized by X-ray diffraction (XRD) and the crystallite size using the dominant (111) peak was found to be 56.09 nm. SEM image shows the presence of spherical shaped nanoparticles. The PL emissions bands are observed at 479 nm (blue emission peak) and 573 nm (yellow emission peak).

**Index terms:** Calcium Fluoride, Co- Precipitation, Dopant, EDAX, Nanoparticles, Photoluminescence, X-ray diffraction

### 1. Introduction

As alkaline-earth fluorides exhibit single properties, it finds a number of applications in optics and electronics [1]. Fluorides are transparent in a wide wavelength region from Vacuum Ultraviolet (VUV) to Infrared (IR) due to its large band gap [2,3]. The fluoride materials normally possess low

refraction index and phonon energies, usually in the range of 400-500  $\text{cm}^{-1}$  as compared to oxides [4], which in turn can decrease the nonradioactive transition probability of the active ions [5]. These materials also finds their applications in laser and frequency conversion when their features are combined with the spectroscopic characteristics of rare earths used as doping ions [6]. Therefore, they can act as the window materials for both ultraviolet and infrared wavelength regions [7]. As calcium fluoride ( $\text{CaF}_2$ ) possesses good stability, non-hygroscopic behavior and applications as optical device, especially in ultraviolet and vacuum ultraviolet (VUV), it had considerable interest among the various fluorides.  $\text{CaF}_2$  being one of the alkaline-earth fluorides, it has a well-known fluorite-type structure. Each  $\text{Ca}^{2+}$  ions lie at the nodes in a face-centered lattice whereas F-ions lie at the centers of the octants [1,8].  $\text{CaF}_2$  nanoparticles exhibit high laser induced damage threshold and high transparency up to vacuum ultraviolet. Therefore, they can be considered as the most promising candidate to replace the fused silica for deep ultraviolet laser lithography techniques and ultraviolet transparent optical lenses [9]. Further