2017-18

Author: T.Mukherjee, Synthetic Metals

Author:T Mukherjee, Physical Review A

Author: Samit Majumder, The Journal of Physics Chemistry C

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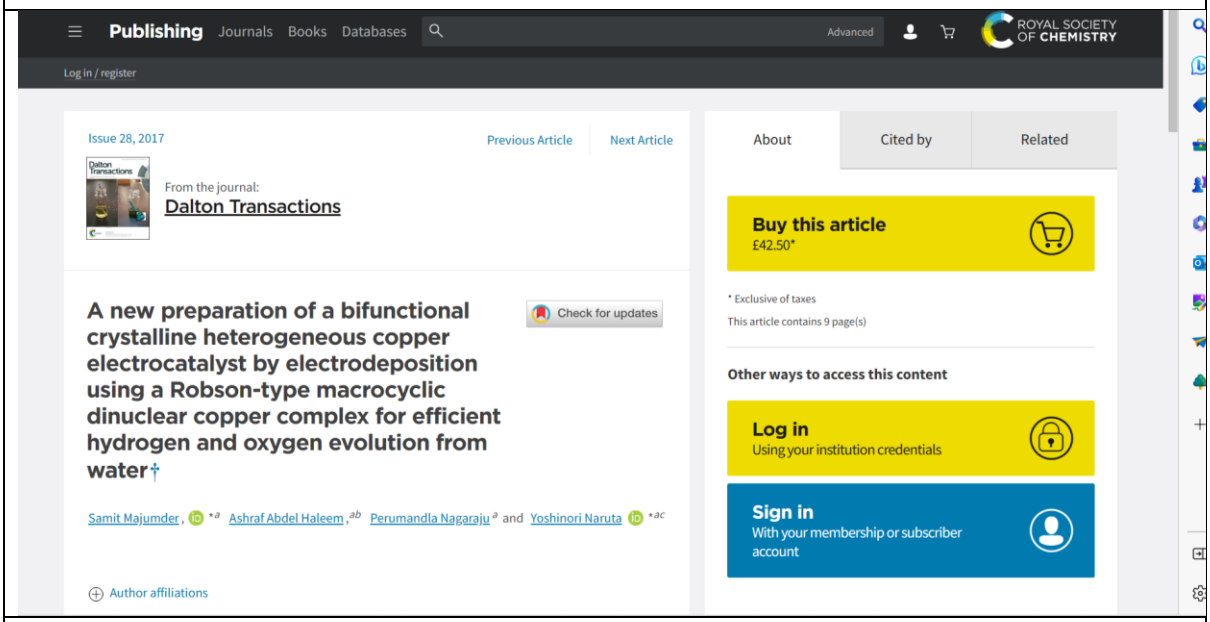

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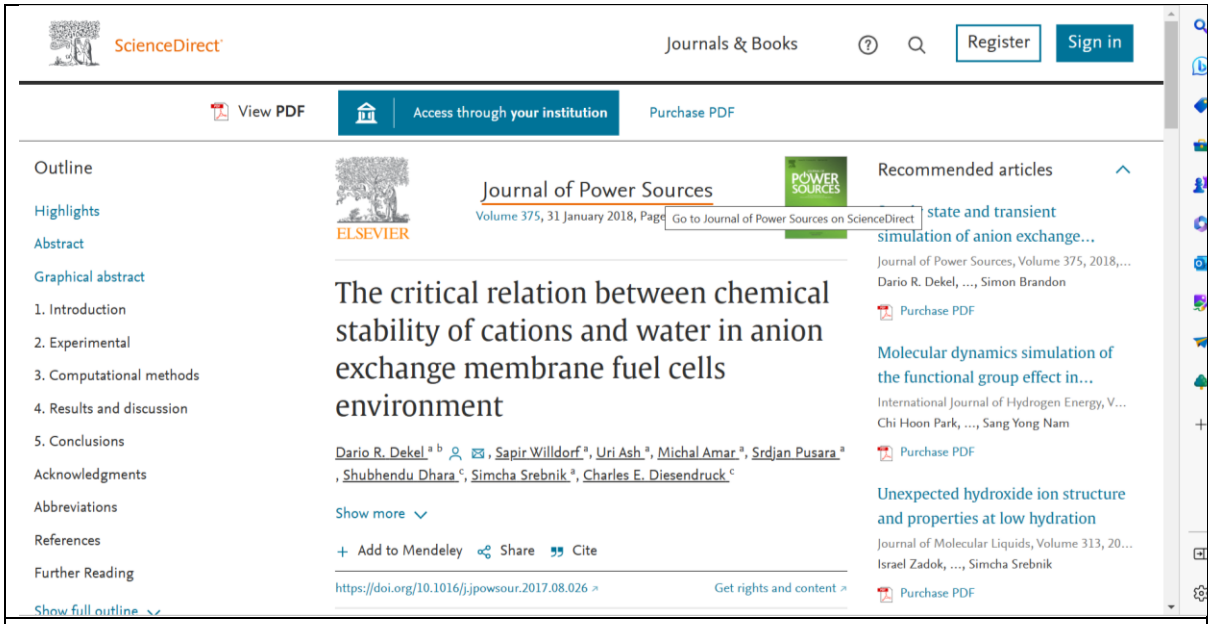

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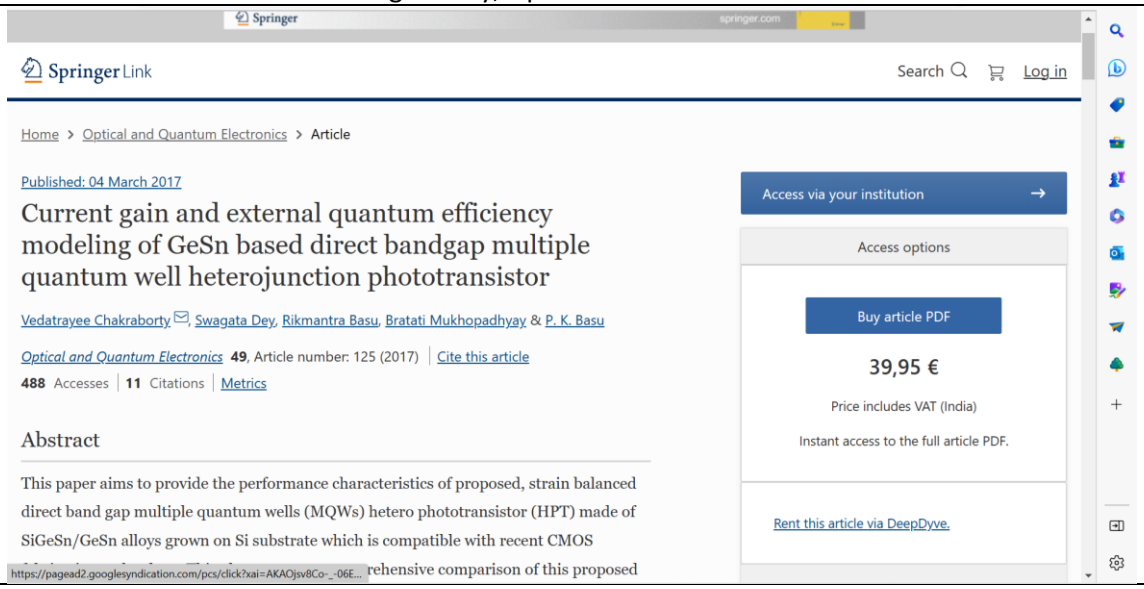

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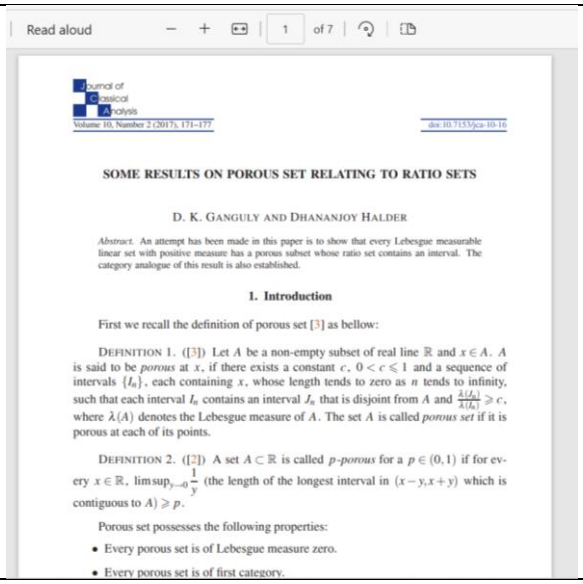

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Journal of Classical Analysis
Volume 10, Number 2 (2017), 171–177 doi:10.7153/jca-10-16

SOME RESULTS ON POROUS SET RELATING TO RATIO SETS

D. K. GANGULY AND DHANANJOY HALDER

Abstract. An attempt has been made in this paper is to show that every Lebesgue measurable linear set with positive measure has a porous subset whose ratio set contains an interval. The category analogue of this result is also established.

1. Introduction

First we recall the definition of porous set [3] as bellow:

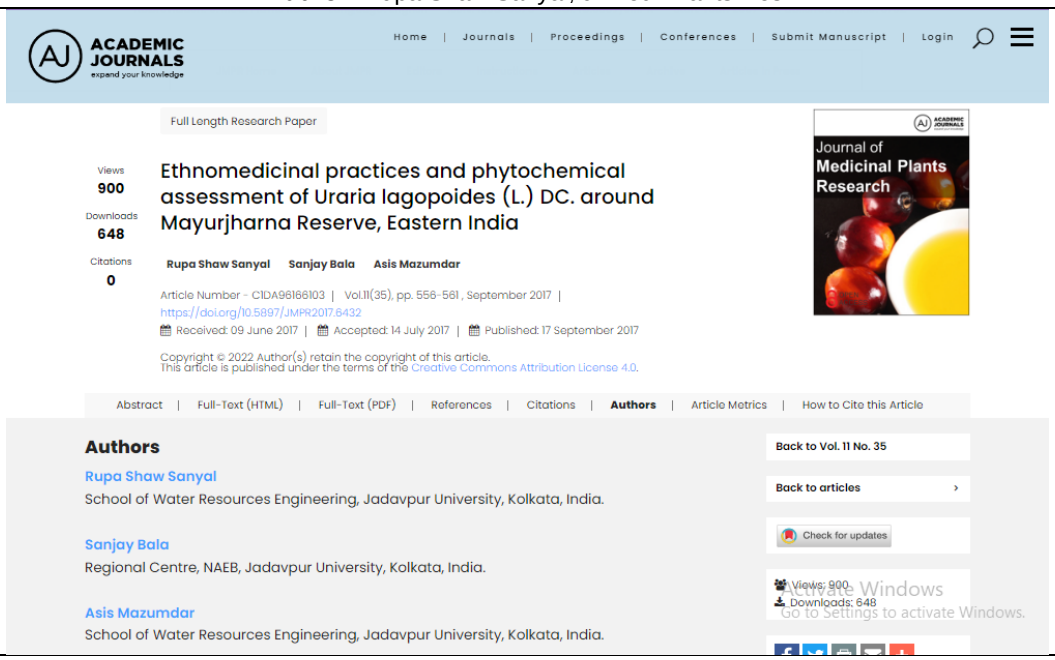
DEFINITION 1. ([3]) Let A be a non-empty subset of real line $\mathbb{R}$ and $x \in A$. A is said to be *porous* at x, if there exists a constant c, $0 < c \leqslant 1$ and a sequence of intervals $\{I_n\}$, each containing x, whose length tends to zero as n tends to infinity, such that each interval I_n contains an interval J_n that is disjoint from A and $\frac{\lambda(J_n)}{\lambda(I_n)} \geqslant c$, where $\lambda(A)$ denotes the Lebesgue measure of A. The set A is called *porous set* if it is porous at each of its points.

DEFINITION 2. ([2]) A set $A \subset \mathbb{R}$ is called p-*porous* for a $p \in (0,1)$ if for every $x \in \mathbb{R}$, $\limsup_{y \to 0} \frac{1}{y}$ (the length of the longest interval in $(x-y, x+y)$ which is contiguous to $A) \geqslant p$.

Porous set possesses the following properties:

- Every porous set is of Lebesgue measure zero.
- Every porous set is of first category.

Author: Rupa Shaw Sanyal, J. Med. Plants Res.



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Ethnomedicinal practices and phytochemical assessment of Uraria lagopoides (L.) DC. around Mayurjharna Reserve, Eastern India

Rupa Shaw Sanyal Sanjay Bala Asis Mazumdar

Article Number - C1DA96186103 | Vol.11(35), pp. 556-561, September 2017 |
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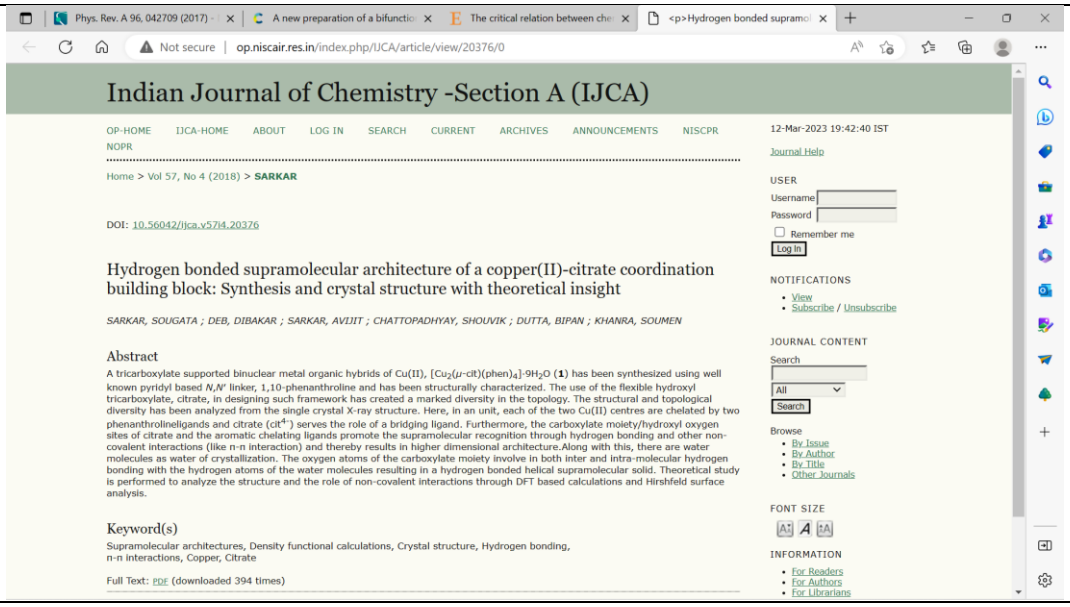

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DOI: 10.56042/ijca.v57i4.20376

Hydrogen bonded supramolecular architecture of a copper(II)-citrate coordination building block: Synthesis and crystal structure with theoretical insight

SARKAR, SOUGATA ; DEB, DIBAKAR ; SARKAR, AVIJIT ; CHATTOPADHYAY, SHOUVIK ; DUTTA, BIPAN ; KHANRA, SOUMEN

Abstract

A tricarboxylate supported binuclear metal organic hybrids of Cu(II), $[Cu_2(\mu\text{-cit})(phen)_4]\cdot 9H_2O$ (**1**) has been synthesized using well known pyridyl based *N,N'* linker, 1,10-phenanthroline and has been structurally characterized. The use of the flexible hydroxyl tricarboxylate, citrate, in designing such framework has created a marked diversity in the topology. The structural and topological diversity has been analyzed from the single crystal X-ray structure. Here, in an unit, each of the two Cu(II) centres are chelated by two phenanthrolineligands and citrate (cit^{4-}) serves the role of a bridging ligand. Furthermore, the carboxylate moiety/hydroxyl oxygen sites of citrate and the aromatic chelating ligands promote the supramolecular recognition through hydrogen bonding and other non-covalent interactions (like π-π interaction) and thereby results in higher dimensional architecture.Along with this, there are water molecules as water of crystallization. The oxygen atoms of the carboxylate moiety involve in both inter and intra-molecular hydrogen bonding with the hydrogen atoms of the water molecules resulting in a hydrogen bonded helical supramolecular solid. Theoretical study is performed to analyze the structure and the role of non-covalent interactions through DFT based calculations and Hirshfeld surface analysis.

Keyword(s)

Supramolecular architectures, Density functional calculations, Crystal structure, Hydrogen bonding, π-π interactions, Copper, Citrate

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PAPER

Modeling of tunneling current density of GeC based double barrier multiple quantum well resonant tunneling diode

Swagata Dey[1], Vedatrayee Chakraborty[2], Bratati Mukhopadhyay[1] and Gopa Sen[1]

Journal of Semiconductors, Volume 39, Number 10

Citation Swagata Dey *et al* 2018 *J. Semicond.* 39 104003

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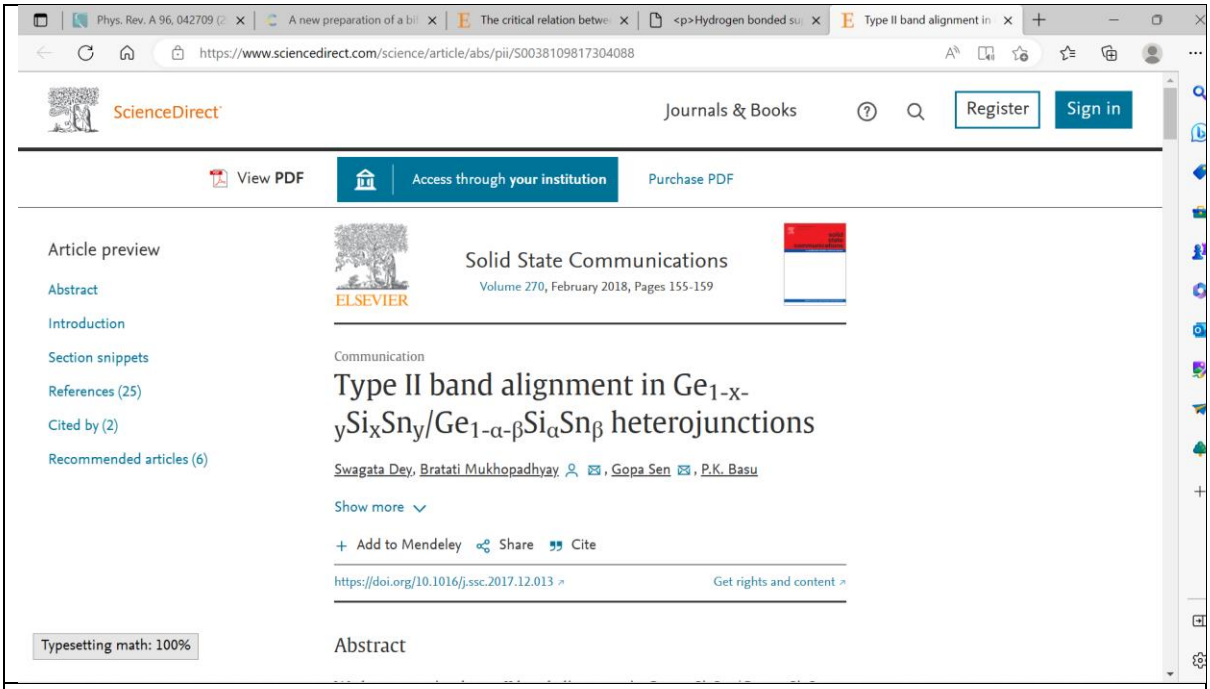

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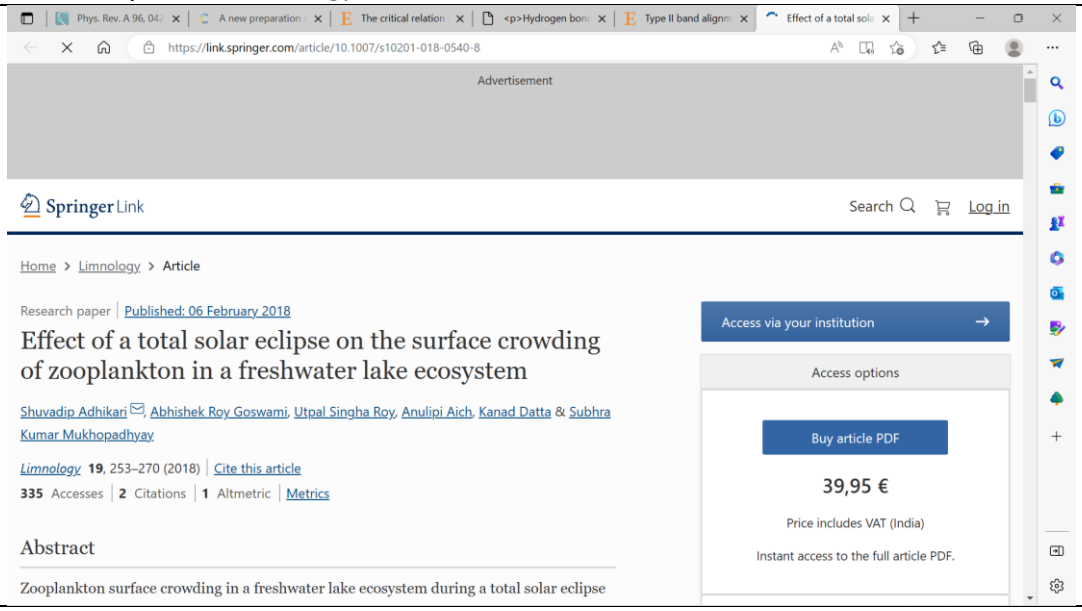

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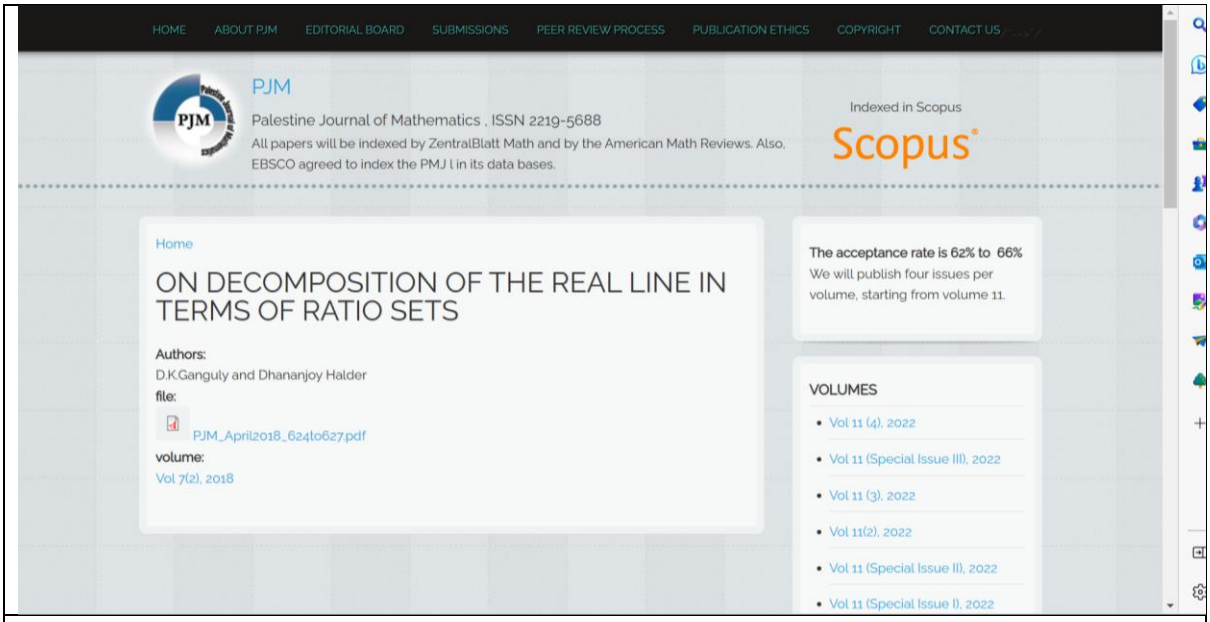

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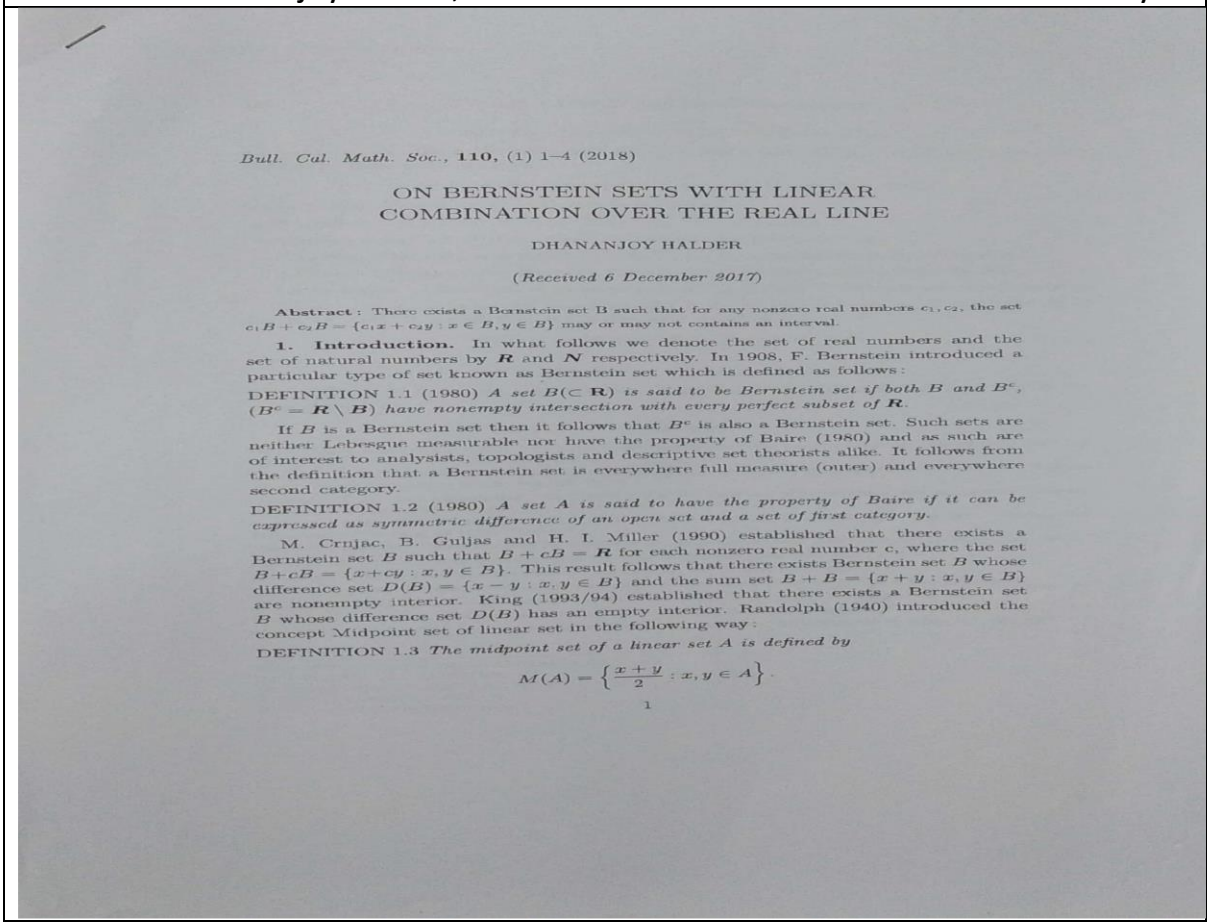

Bull. Cal. Math. Soc., **110**, (1) 1–4 (2018)

ON BERNSTEIN SETS WITH LINEAR COMBINATION OVER THE REAL LINE

DHANANJOY HALDER

(*Received 6 December 2017*)

Abstract : There exists a Bernstein set B such that for any nonzero real numbers c_1, c_2, the set $c_1B + c_2B = \{c_1x + c_2y : x \in B, y \in B\}$ may or may not contains an interval.

1. Introduction. In what follows we denote the set of real numbers and the set of natural numbers by $\boldsymbol{R}$ and $\boldsymbol{N}$ respectively. In 1908, F. Bernstein introduced a particular type of set known as Bernstein set which is defined as follows :

DEFINITION 1.1 (1980) *A set $B(\subset \mathbf{R})$ is said to be Bernstein set if both B and B^c, $(B^c = \boldsymbol{R} \setminus \boldsymbol{B})$ have nonempty intersection with every perfect subset of $\boldsymbol{R}$.*

If B is a Bernstein set then it follows that B^c is also a Bernstein set. Such sets are neither Lebesgue measurable nor have the property of Baire (1980) and as such are of interest to analysists, topologists and descriptive set theorists alike. It follows from the definition that a Bernstein set is everywhere full measure (outer) and everywhere second category.

DEFINITION 1.2 (1980) *A set A is said to have the property of Baire if it can be expressed as symmetric difference of an open set and a set of first category.*

M. Crnjac, B. Guljas and H. I. Miller (1990) established that there exists a Bernstein set B such that $B + cB = \boldsymbol{R}$ for each nonzero real number c, where the set $B+cB = \{x+cy : x, y \in B\}$. This result follows that there exists Bernstein set B whose difference set $D(B) = \{x - y : x, y \in B\}$ and the sum set $B + B = \{x + y : x, y \in B\}$ are nonempty interior. King (1993/94) established that there exists a Bernstein set B whose difference set $D(B)$ has an empty interior. Randolph (1940) introduced the concept Midpoint set of linear set in the following way :

DEFINITION 1.3 *The midpoint set of a linear set A is defined by*

$$M(A) = \left\{\frac{x+y}{2} : x, y \in A\right\}.$$

Author: Laki Molla, Theatre International

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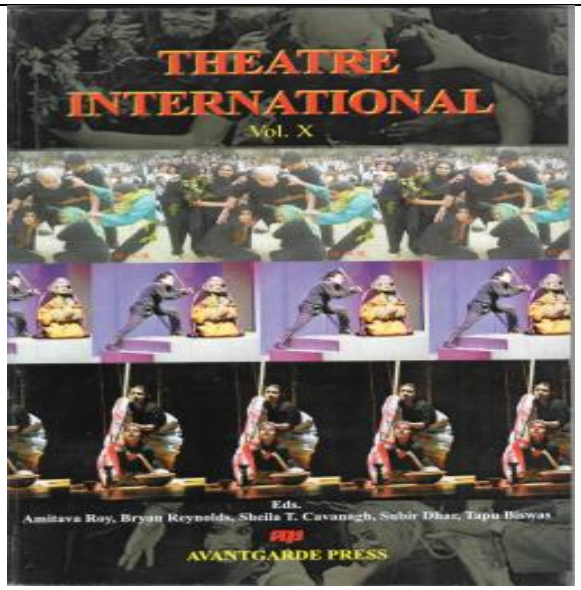
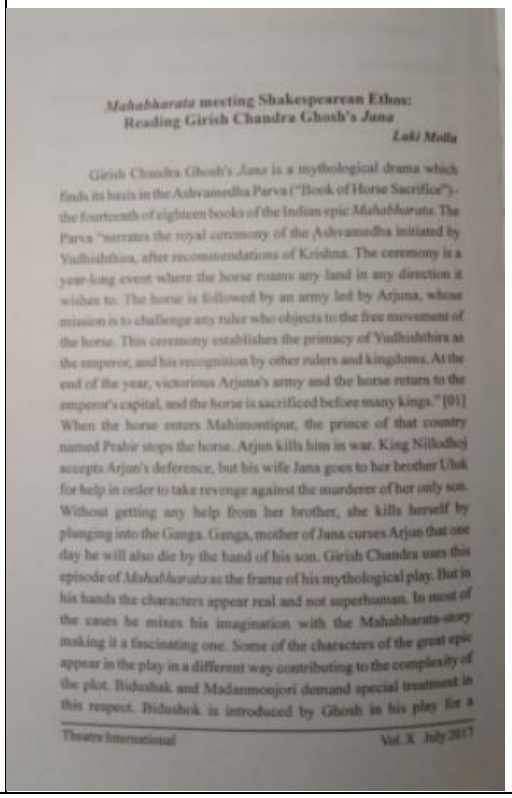


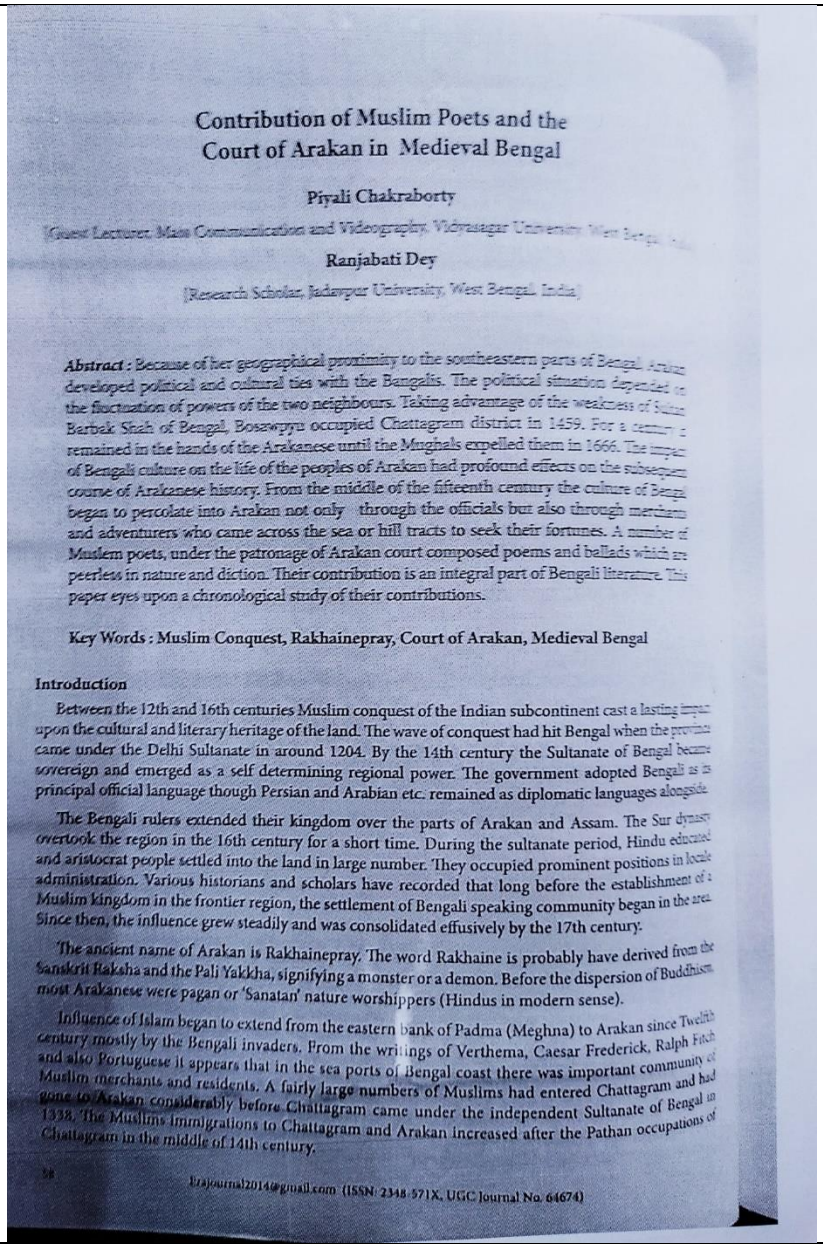


Mahabharata meeting Shakespearean Ethos:
Reading Girish Chandra Ghosh's *Jana*

Loki Molla

Girish Chandra Ghosh's *Jana* is a mythological drama which finds its basis in the Ashvamedha Parva ("Book of Horse Sacrifice")- the fourteenth of eighteen books of the Indian epic *Mahabharata*. The Parva "narrates the royal ceremony of the Ashvamedha initiated by Yudhishthira, after recommendations of Krishna. The ceremony is a year-long event where the horse roams any land in any direction it wishes to. The horse is followed by an army led by Arjuna, whose mission is to challenge any ruler who objects to the free movement of the horse. This ceremony establishes the primacy of Yudhishthira as the emperor, and his recognition by other rulers and kingdoms. At the end of the year, victorious Arjuna's army and the horse return to the emperor's capital, and the horse is sacrificed before many kings." [01] When the horse enters Mahimonstipur, the prince of that country named Prabir stops the horse. Arjun kills him in war. King Nillodhoj accepts Arjun's deference, but his wife Jana goes to her brother Uluk for help in order to take revenge against the murderer of her only son. Without getting any help from her brother, she kills herself by plunging into the Ganga. Ganga, mother of Jana curses Arjun that one day he will also die by the hand of his son. Girish Chandra uses this episode of *Mahabharata* as the frame of his mythological play. But in his hands the characters appear real and not superhuman. In most of the cases he mixes his imagination with the Mahabharata-story making it a fascinating one. Some of the characters of the great epic appear in the play in a different way contributing to the complexity of the plot. Bidushak and Madanmonjori demand special treatment in this respect. Bidushok is introduced by Ghosh in his play for a

Author:RANJABATI DEY, JOURNALISM & MASS COMMUNICATION



Contribution of Muslim Poets and the Court of Arakan in Medieval Bengal

Piyali Chakraborty

[Guest Lecturer, Mass Communication and Videography, Vidyasagar University, West Bengal, India]

Ranjabati Dey

[Research Scholar, Jadavpur University, West Bengal, India]

Abstract : Because of her geographical proximity to the southeastern parts of Bengal, Arakan developed political and cultural ties with the Bengalis. The political situation depended on the fluctuation of powers of the two neighbours. Taking advantage of the weakness of Sultan Barbak Shah of Bengal, Boswpyu occupied Chattagram district in 1459. For a century it remained in the hands of the Arakanese until the Mughals expelled them in 1666. The impact of Bengali culture on the life of the peoples of Arakan had profound effects on the subsequent course of Arakanese history. From the middle of the fifteenth century the culture of Bengal began to percolate into Arakan not only through the officials but also through merchants and adventurers who came across the sea or hill tracts to seek their fortunes. A number of Muslem poets, under the patronage of Arakan court composed poems and ballads which are peerless in nature and diction. Their contribution is an integral part of Bengali literature. This paper eyes upon a chronological study of their contributions.

Key Words : Muslim Conquest, Rakhainepray, Court of Arakan, Medieval Bengal

Introduction

Between the 12th and 16th centuries Muslim conquest of the Indian subcontinent cast a lasting impact upon the cultural and literary heritage of the land. The wave of conquest had hit Bengal when the province came under the Delhi Sultanate in around 1204. By the 14th century the Sultanate of Bengal became sovereign and emerged as a self determining regional power. The government adopted Bengali as its principal official language though Persian and Arabian etc. remained as diplomatic languages alongside.

The Bengali rulers extended their kingdom over the parts of Arakan and Assam. The Sur dynasty overtook the region in the 16th century for a short time. During the sultanate period, Hindu educated and aristocrat people settled into the land in large number. They occupied prominent positions in locale administration. Various historians and scholars have recorded that long before the establishment of a Muslim kingdom in the frontier region, the settlement of Bengali speaking community began in the area. Since then, the influence grew steadily and was consolidated effusively by the 17th century.

The ancient name of Arakan is Rakhainepray. The word Rakhaine is probably have derived from the Sanskrit Raksha and the Pali Yakkha, signifying a monster or a demon. Before the dispersion of Buddhism most Arakanese were pagan or 'Sanatan' nature worshippers (Hindus in modern sense).

Influence of Islam began to extend from the eastern bank of Padma (Meghna) to Arakan since Twelfth century mostly by the Bengali invaders. From the writings of Verthema, Caesar Frederick, Ralph Fitch and also Portuguese it appears that in the sea ports of Bengal coast there was important community of Muslim merchants and residents. A fairly large numbers of Muslims had entered Chattagram and had gone to Arakan considerably before Chattagram came under the independent Sultanate of Bengal in 1338. The Muslims immigrations to Chattagram and Arakan increased after the Pathan occupations of Chattagram in the middle of 14th century.

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Author: D Bhadra, Chem Sci Rev Lett

Chemical Science Review and Letters ISSN 2278–6783

Research Article

Biocompatibility of Poly(Lactic-Co-Glycolic Acid) - Graphene Oxide Nanoplatelets Composite Using Cryopreserved Human Stem Cells

Biswadeep Chaudhuri[1,2]*, B. Mondal[3], D Bhadra[4] and S. C. Sarkar[1]

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[2]Present Affiliation: CGCRI, Kolkata-700032, India
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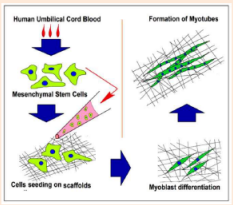
[4]Department of Physics Bhairab Ganguly College, Belgharia, Kolkata-700056, India

Abstract

The development of a suitable scaffold material for muscle tissue regeneration *in vivo* is still a major challenge. We reported excellent biocompatibility of electrospun meshes of poly(lactic-co-glycolic acid, PLGA)-graphene oxide nanoplatelets (GO) composite with graphene oxide concentration within the percolation threshold (f_c~0.78wt% GO) and non-toxicity limit (~20μg GO/mL solution). Cryopreserved human mesenchymal stem cells (hMSCs) were used showing myobast differentiation and myotube formation with increased cell viability. These results confirmed high potential of GO-PLGA scaffold meshes for skeletal muscle tissue regeneration or other biomedical applications like wound healing and drug delivery.



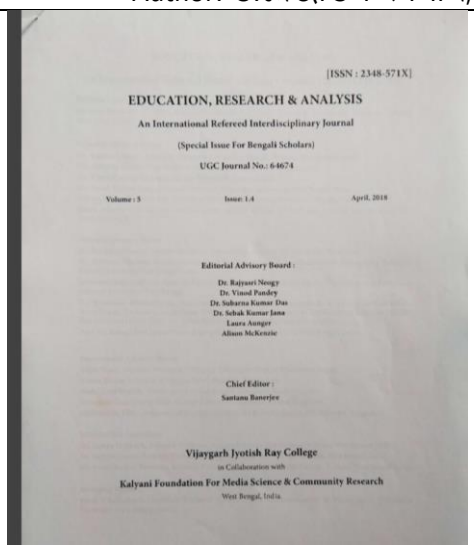
Keywords: Biomaterial, Graphene oxide, Myoblust, Stem cells, Polymer nanocomposite, Tissue engineering

***Correspondence**
Author: Dr. Biswadeep Chaudhuri
Email: chaudhuri.bis12345@gmail.com

Introduction

Over the last decade, various nanomaterials (nano diamond, graphene and carbon nanotubes) have been used with suitable polymer to meet the requirements of the desired scaffolds for tissue engineering (TE) [1]. Biopolymers, bioceramics and their polymer composites had already been extensively used for different biomedical applications [2, 3] because these materials possessed desired biocompatibility, biodegradability and good solubility in organic solvents. Interestingly, addition of very small amount (~0.3-0.5wt%) of graphene oxide nanoplatelets (GO) in different polymers like poly(methyl methacrylate) (PMMA) [4] and polyvinyl alcohol PVA [5] enhanced both conductivity (σ) and dielectric constant of the resulting composites along with mechanical stability [6, 7]. Enhancement of conductivity of the scaffold by adding suitable bioactive fillers also enhances biocompatibility along with conductivity [3]. Recently several reports on the tissue engineering applications of GO-polymers (PLGA, PCL etc.) composites have been made [8-10]. However, very little or no work has been done to show the biocompatibility of such composite meshes suitable for different biomedical applications using human stem cells or human cord blood drive stem cells. Most of the earlier studies were confined to the use of animal cell lines [3, 10]. So the study of biocompatibility of scaffolds using human stem cells is important. Moreover, in those studies with graphene oxide - polymer composites [3, 8], biocompatibility had been investigated using arbitrarily higher concentration of GO. Graphene oxide concentration in polymer above 50μg/ mL was reported to be toxic to the human cells [11]. Biocompatibility of the scaffold increases with increasing GO concentration as the conductivity of the composite increases with GO concentrations and also showed percolation threshold behaviour [12] in conductivity. But for biomedical applications, an optimum GO concentration must be used and that concentration should be kept within the non toxicity limit as well as below the said percolation threshold for better mechanical stability and biodegradability.

Author: ড.রেজাউল ইসলাম, Education, Research and Analysis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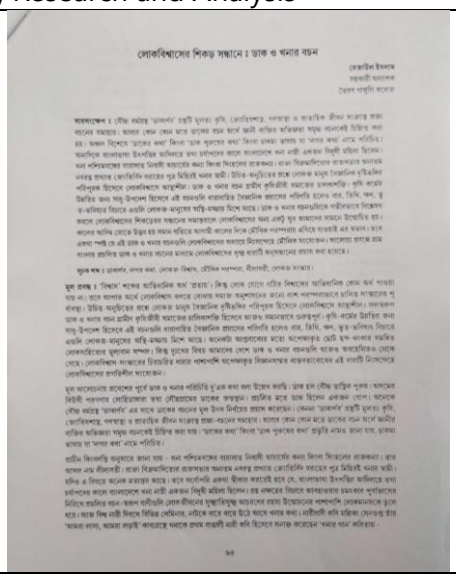

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Indigenous Knowledge of Ethnic Community on Usage of Kripa (Lumnitzera racemosa) and its preliminary screening

Rupa Sanyal[1]*, Sohini Mallick[2] and Asis Mazumder[2]

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Abstract

Kripa (*Lumnitzera racemosa*) is an evergreen branched tree of medicinal value found in the mangrove areas of the Indian subcontinent and traditionally used by local rural communities to treat various ailments and their symptoms. Kripa was identified as one of the many mangrove species that occur in the Sunderbans delta that are being used for its therapeutic properties. The traditional usage of Kripa leaves and bark were learnt through interaction with the locals. The plant parts were collected from the Medicinal Plant Conservation Area (MPCA) in Bonnie Camp and a preliminary phytochemical analysis was conducted in methanolic extraction by following standard methodology. The locals reported that the most common use of the plant were to treat itches, bites (inflammation) and occasionally even symptoms of diabetes. The preliminary phytochemical screening reveals that the leaves of Kripa contains glycosides, alkaloids, phenols, tannins, flavonoids, etc.

Keywords: Ethnic community, Kripa, medicinal value, phytochemical.

Introduction

Due to the important role and possibilities for treatment of human diseases, research on medicinal plants has been the focus of grate fascination during the last few decades (Pan et al., 2010 and Boots et al., 2008). Medicinal plants or herbs are the essence of India's traditional medicine practice (Adhikari et al., 2018). Using plants to create formulations to treat various ailments and their symptoms play a vital part in the history of traditional methods of Indian medicine like Ayurveda. Ethnomedicine is a study of the traditional medicine practiced by ethnic communities, specially by indigenous people. The combination of ethnomedicine and ethnobotany is currently of great interest, due to their important role in finding out or succeeding new medicine.

Sunderban is one the most diverse areas of the nation in terms of flora and fauna and the entire vegetation is mostly of mangrove type. Since, mangrove species of plants are indigenous and unique to this region (Pattanaik et al., 2008). Mangrove plants having medicinal values are traditionally used

Author: Sagar Das, Education, Research and Analysis

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ভৈরব গাঙ্গুলী কলেজ, বেলঘরিয়া,
কোলকাতা, পশ্চিমবঙ্গ

সারসংক্ষেপ ঃ রঙ্গমঞ্চ, সময় ও বাস্তব জীবনের প্রেক্ষাপটে দাঁড়িয়ে শম্ভু মিত্রের নাট্যজীবন অতিবাহিত হয়েছে। তিনি মনে-প্রাণে ছিলেন রঙ্গমঞ্চের কাছের মানুষ। অভিনেতা হিসেবে নাট্য জীবনের প্রথম পর্বে রঙ্গমঞ্চের সঙ্গে যুক্ত হলেও পরবর্তী সময় ব্যক্তিগত আগ্রহে রঙ্গমঞ্চের নানা আন্দোলনের সঙ্গে প্রত্যক্ষ-পরোক্ষভাবে যুক্ত হয়েছিলেন। গণনাট্য, নবনাট্য আন্দোলনের ভাবধারাকে পাথেয় করে তিনি নাট্যজীবন শুরু করলেও বহুরূপীতে নিজের চিন্তা-চেতনার প্রকাশ তাকে বাংলা নাট্য জগতে চিরকালের জন্য প্রতিষ্ঠা দেয়। এককথায় বলা চলে বহুরূপীর জনক শম্ভুমিত্র। তাঁর বহুরূপী নাট্যচেতনা বাংলা রঙ্গমঞ্চের ধারাতে একদিকে যেমন জোয়ার আনে, তেমনি অন্যদিকে জনগণের চিন্তা-চেতনার জগৎকে প্রসারিত করে। শুধু রঙ্গমঞ্চের নবধারার সূত্রপাতকারি হিসেবে নয়, নাট্যকার, নাট্যনির্দেশক, পরিচালক হিসেবে তাঁর প্রতিভার দিকটিও দর্শকের কাছে সুপরিচিত।

নাট্যজীবনের প্রথম পর্বে শম্ভু মিত্র নাট্য অভিনয় শিক্ষা নিয়েছিলেন কৃষ্ণগোবিন্দ সরকার নামের এক ব্যক্তির কাছে। এরপর দেশি-বিদেশী নাট্যপাঠ, নানা ধরনের নাট্যাভিনয় দেখা তাঁর নাট্য অভিনয় সম্পর্কে অভিজ্ঞতা সমৃদ্ধি লাভ করে। তিনি প্রথম অভিনয় শুরু করেন রঙমহলে। অভিনীত নাটক বিধায়ক ভট্টাচার্যের 'মাটির ঘর' (১৯৬৯)। এর পরে তিনি অন্যান্য রঙ্গমঞ্চে অভিনয় করেন। ১৯৪৮ খ্রীঃ বহুরূপী শম্ভুমিত্রের ভাবনা থেকে বাস্তবে রূপ পেল। 'নবান্ন' নাটক অভিনয়ের মধ্য দিয়ে এর সূত্রপাত ঘটে। রবীন্দ্রনাথের লেখা নাটকের অভিনয় ও প্রযোজনা করেছেন। 'রক্তকরবী'র অভিনয় করেন এবং দর্শক মহলের কাছে জনপ্রিয়তা লাভ করেন।

সূচক শব্দ ঃ নাট্যমোদী, গণনাট্য, বহুরূপী, রক্তকরবী, রঙ্গমঞ্চ।

সূচনা ঃ রঙ্গমঞ্চ, সময় ও বাস্তব জীবনের প্রেক্ষাপটে দাঁড়িয়ে শম্ভু মিত্রের নাট্যজীবন অতিবাহিত হয়েছে। তিনি মনেপ্রাণে ছিলেন রঙ্গমঞ্চের কাছের মানুষ। অভিনেতা হিসেবে নাট্যজীবনের প্রথম পর্বে রঙ্গমঞ্চের সঙ্গে যুক্ত হলেও পরবর্তী সময় ব্যক্তিগত ১আগ্রহে রঙ্গমঞ্চের নানা আন্দোলনের সঙ্গে প্রত্যক্ষ-পরোক্ষভাবে যুক্ত হয়েছিলেন। গণনাট্য, নবনাট্য আন্দোলনের ভাবধারাকে পাথেয় করে তিনি যাত্রা শুরু করলেও বহুরূপীতে নিজের চিন্তা-চেতনার প্রকাশ তাঁকে বাংলা নাট্যজগতে চিরকালের জন্য প্রতিষ্ঠা দেয়। এককথায় বলা চলে বহুরূপীর জনক শম্ভু মিত্র। তাঁর বহুরূপী নাট্যচেতনা বাংলা রঙ্গমঞ্চের ধারাতে একদিকে যেমন জোয়ার আনে, অন্যদিকে নাট্যমোদী জনগণের চিন্তা-চেতনার জগৎকে প্রসারিত করে। শুধু রঙ্গমঞ্চের নবধারার সূত্রপাতকারী হিসেবে নয়, নাট্যকার, নাট্যনির্দেশক, পরিচালক হিসেবে তাঁর প্রতিভার দিকটিও দর্শকের কাছে সুপরিচিত।

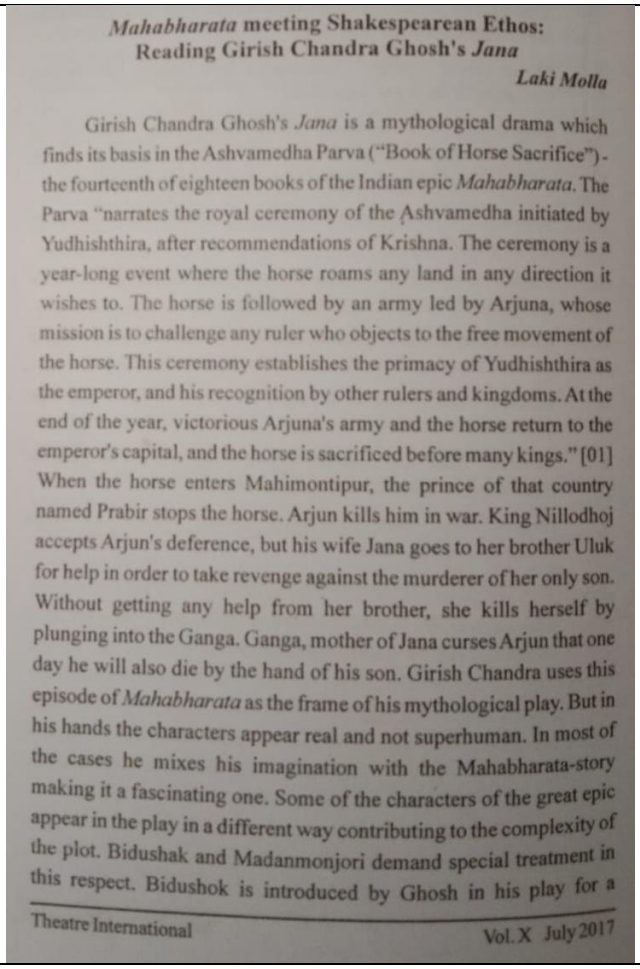
১. নাট্যজীবনের প্রথম পর্ব ঃ শম্ভু মিত্র

নাট্য শিল্পের অসাধারণ প্রতিভা নিয়ে শম্ভু মিত্র ১৯১৫ খ্রিস্টাব্দে ২২শে আগস্ট কলকাতার ডোভার লেনে জন্মগ্রহণ করেন। পিতা শরৎকুমার মিত্র তাঁকে ভর্তি করেন বালিগঞ্জ গভর্নমেন্ট স্কুলে। এরপর সেন্ট জেভিয়ার্স কলেজে পড়াশোনা করেন। স্কুল জীবন থেকেই তিনি নাটক ও নাট্যশালার প্রতি আকৃষ্ট হয়েছিলেন। দেশি-বিদেশি নাটক পাঠ, নানা ধরণের অভিনয় দেখা তাঁর নাট্যজীবনের প্রথম দিকটিকে সমৃদ্ধ করে তুলেছিল। ষোলো-সতেরো বছর বয়সে তিনি নাটকের অভিনয় শিক্ষা নিয়েছিলেন কৃষ্ণগোবিন্দ সরকার নামে এক ব্যক্তির কাছে। গতানুগতিক পড়াশোনার জগৎ কোনোদিনই ভালো লাগেনি শম্ভু মিত্রের। তাই তিনি পরবর্তী সময় রঙ্গমঞ্চের জগতে নিজেকে যুক্ত করেন। নাটক অভিনয় ও নির্দেশনার পাশাপাশি তিনি রঙ্গমঞ্চের প্রয়োজনে মৌলিক নাটক রচনা করেন। তাঁর রচিত নাটকগুলি হল - 'উলুখাগড়া' (১৯৪২), 'একটি দৃশ্য' (১৯৪৪), 'বিভাব' (১৯৫৬), 'কাঞ্চনরঙ্গ' (১৯৬১), 'গর্ভবতী বর্তমান' (১৯৬৩), 'ঘূর্ণি' (১৯৬৫), 'চাঁদ বণিকের পালা' (১৯৬৫), 'অতুলনীয় সংবাদ' (১৯৬৫)। এই নাটকগুলি তৎকালীন রঙ্গমঞ্চপ্রেমী দর্শকদের কাছে খুবই আকর্ষণীয় ছিল। এছাড়াও তিনি যেমন একদিকে

Author: Laki Molla, Theatre International2017

Signed by Principal, Bhairab Ganguly College

Signer: Dr. Subhranil Som
Date: Tuesday, M[illegible]2023 9:47 PM
Location: Kolkata



Mahabharata meeting Shakespearean Ethos: Reading Girish Chandra Ghosh's *Jana*

Laki Molla

Girish Chandra Ghosh's *Jana* is a mythological drama which finds its basis in the Ashvamedha Parva ("Book of Horse Sacrifice") - the fourteenth of eighteen books of the Indian epic *Mahabharata*. The Parva "narrates the royal ceremony of the Ashvamedha initiated by Yudhishthira, after recommendations of Krishna. The ceremony is a year-long event where the horse roams any land in any direction it wishes to. The horse is followed by an army led by Arjuna, whose mission is to challenge any ruler who objects to the free movement of the horse. This ceremony establishes the primacy of Yudhishthira as the emperor, and his recognition by other rulers and kingdoms. At the end of the year, victorious Arjuna's army and the horse return to the emperor's capital, and the horse is sacrificed before many kings." [01] When the horse enters Mahimontipur, the prince of that country named Prabir stops the horse. Arjun kills him in war. King Nillodhoj accepts Arjun's deference, but his wife Jana goes to her brother Uluk for help in order to take revenge against the murderer of her only son. Without getting any help from her brother, she kills herself by plunging into the Ganga. Ganga, mother of Jana curses Arjun that one day he will also die by the hand of his son. Girish Chandra uses this episode of *Mahabharata* as the frame of his mythological play. But in his hands the characters appear real and not superhuman. In most of the cases he mixes his imagination with the Mahabharata-story making it a fascinating one. Some of the characters of the great epic appear in the play in a different way contributing to the complexity of the plot. Bidushak and Madanmonjori demand special treatment in this respect. Bidushok is introduced by Ghosh in his play for a

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Research Paper

HS1-RIV: Improved Efficiency for Authenticated Encryption

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Abstract

Encryption was "need of the hour" when it was invented but with the progress of time researchers have shown that it is not very effective when implemented alone. Many attacks are present in the present time, which can break any simple encryption in no time. Therefore, researchers have proposed and proved various techniques, which can work along encryption and can increase security by many folds. This paper aims at bringing essence of this evolution and benefits that tag along with it in one document. Various researchers have different point of view regarding the use of techniques and their benefits along with it, some of those point of views and their reasons are given in this paper

***Keywords**: Authenticated Encryption, Subtle Authenticated Encryption, Robust Authenticated Encryption, Initialization vector, Hash Stream 1 (HS1), SIV, RIV*

1. Introduction

Evolution of cryptography is not an eye opening invention, because it is continuously adapting itself and modifying itself from the time of its existence. However, in recent times it is proved by various researchers that cryptography on its own is not secure and possibly open for attacks [1,6], which mostly can prove to be successful. In the counterattack of this loophole various additive techniques are proposed, some of which proved to be of great advantage in respect of security. One of the most primal and easily implemented technique is to add authentication to encryption and makes it- authenticated encryption; another could be to add steganography to cryptography, and so are others. The scope of this will aim at elaborating the branch in which authentication is added to cryptography. Authenticated encryption (hereafter AE) is a symmetric key encryption scheme that provides authenticity and integrity in addition to confidentiality, which is provided by simple encryption. It was used for key wrapping, i.e. protecting the transportations of cryptographic keys. Some basic sub categories of authentication encryption are Hash-then-Encrypt (HtE), MAC-then-Encrypt (MtE), Encrypt-the-MAC (EtM) and Encrypt-and-MAC (E&M). Decryption and authentication is straightforward in all these approaches at the receiver's end, where either authentication is done prior to decryption or vise-versa. All these techniques have security vulnerabilities if not executed properly. However, if properly executed, they all can provide higher level of security. One of the working applications of HtE is WEP (wireless equivalent protocol) for protecting Wi-Fi networks, which had some fundamental weaknesses and led to its replacement.

Another advantage of AE is that, it gives security against chosen plain text attack (here after CPA) and chosen cipher text attack (here after CCA). When checking for any attack, it is assumed that attacker knows the encryption algorithm and still if encryption technique prevents adversary from getting information, then it is considered secure algorithm. There are many examples of CPA, in some cases adversary can send a cipher text that he acquired during eavesdropping, to the decryption server and get plain text in return. In other (and most) cases adversary can learn partial information about the message and not the complete plain text. In the case of AE, even if an assumption is taken that the adversary can obtain encryption of an arbitrary message of his choice (CPA) or he can decrypt any cipher text of his choice (CCA) and his goal is to break semantic security; then also he cannot do it [6].

Many researchers have worked on AE and provided varies schemes that provide better structural design of AE. Rogaway and shrimpton proposed nonce bases MRAE (misuse resistant AE) and introduced synthetic initialization vector scheme (SIV). In the terms of cryptography, a number, which cannot be repeated, is termed as nonce. It helps in providing security against replay attack where every communication has an issued random and unique number called nonce. SIV is a block cipher mode of operation, which takes three inputs, a key, plain text, and multiple variable length octet string, this string is not encrypted but is used for authentication [5]. SIV gives a cipher text as output which has same length as that of the plain text. SIV can be used to achieve two goals, either it will provide deterministic AE or nonce based MRAE.

2. Related work

Various techniques are proposed by researchers in recent times to make communication secure and authentic. In [1] RIV (Random Initialization Vector) is merged with robust authenticated encryption to increase efficiency of robust authenticated encryption. Tjuawinata, I., Huang, T., & Wu, H performed cryptanalysis of authenticated encryption COFFE [4] and proposed ways by which security can be improved in it. AES is one of the most widely accepted encryption algorithm, and thus used as a base in many methodologies such as SIV [5] and RIV. Some academicians have

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Fuzzy Logic based Trust Management through Dynamic Multicast Group Formation Provisioning Quality of Service in MANETS

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Abstract--- Trust is a feeling of subjectivity that cannot be accurately measured. It varies continuously with time and circumstances may be based on previous history or/and present status of communication. In this paper researchers are going to propose a fuzzy logic based trust strategy for multicast group formation and sustain deterministically the quality of service in MANETs. Timestamp interactions, their frequency and duration of communication crucially affects the routing related and quality of service requirements. After an extensive survey of different direct and indirect tools of group formation the most promisisng factors identified as FDRI (frequency of communication (Fc), duration of communication (Dc) and time stamp of Recent call established Interactions (RI) were contemplated to qualify so as to include as member of a multicast group .Thus Trust T has been taken as the absolute criteria to select the strong candidate nodes to be the part of multicast group thereby reduce the control overhead of flooding and streamlining the scarce pool of resources. The trust value T is computed as a function of summation of distinct weights (w1, w2,w3) with Fc , Dc , RI respectively and eventually fuzzify Trust T into ~T -→[0,1] using inference rules .As the data transmission request arises the member nodes with high trust value in terms of available resources and speed are considered for routing activities. The proposed model works in such a symmetric manner of adjustment mechanism that in case the selected promising node is not available to continue with data dissemination , neighboring member nodes adjust failed member node to support its network load, without disrupting routing or initiating route exploration from the scratch. Each chosen path can be characterized in the form of tuple as< ~T, Speed, Resources, Adjustment > all the route from the source to destination. The proposal hence guarantee some predefined set of quality of services locally and sequentially propagate this coordination and conservation globally from source to destination. This local approach in the proposal accentuates a lot to reduce the spectrum band of control overhead, flooding and propagation delay. The proposal is also studied with dynamics of group anatomy and also simulated on MATLAB to get the fuzzy value of trust value based on different weightage of FDRI parameters and how this proposal can be woven in the mobile network to ensure quality of service in MANETs

Keywords--- Multicast, Trust, Dynamic, Group, Cohesion, Fuzzy Logic.

I. Introduction

Group is a subjective concept which promulgates and evolves to hook together targets and desires. The group formed could be of different size and could be with different goals for different types of communities like professional groups (business groups, teleconferencing groups, Google Forums, LinkedIn communities etc.), social groups (Whatsapp, Facebook, Twitteretc.), family groups (members of the family and their relatives). Some Unit/entities have to take an initiative to form a group when possessed with certain objectives or tasks to be accomplished. But to sustain the group long way the member should be loyal enough to dedicate themselves for the common objectives of the group in one way or other. Contribution to the group by its member could be in any form like skills, money, availability, to bear risk and withstand it .One of the most basic requirement while forming a group and to sustain a group is that the member must trust each other. Each and every living being in this universe is associated with at least one or may be more than one types of group simultaneously striving for distinct needs and wants. The reason with these group association although could be different like may be to feel secured, grow professionally, be social, to share their interests and insights or could be to get recognition to earn name and fame. The group dynamics plays a very significant role in the maintaining and shaping the relationship between its members. Each and every expressed thoughts in the group impacts the behaviour of the members to a different level.

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Securing Data in Internet of Things Using Novel Neural Elliptic Galois Cryptography and Optimal Matrix XOR Steganography

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Abstract--- Internet of Things (IoT), is also noted as the Internet of Objects, it is presumed as the next generation of the internet in which billions of services are being interrelated. IOT is widely applicable in various fields such as environment monitoring building automation, healthcare, and educational purposes. Straightaway, secured data transmission is termed to be one of the main issues which is being faced in all the aforesaid fields. The main aspiration of this research is to conquer the problem of secured data transmission in WSN, In this research, NNEGC (Novel Neutral Elliptic Galois Cryptography) and OM-XOR Optimal Matrix based XOR Steganography are the two protocols which are implemented for overwhelming the security issue. The encryption and decryption of data are undergone by the CNN (Chaotic Neutral Network) which utilize Elliptical Curve Over Galois Field for cryptography key generation. A cipher text private and public key is generated for the encryption and decryption process. The data privacy and the authentication of a user are undergone by the steganography process, where the data is converted into an image file during the encryption process and embed the image file as a secret message into a cover block and transfers to the cloud storage. The cover block is optimized and selected over the cloud storage by the proposed Adaptive Firefly Algorithm for encrypted transmission. The proposed security protocol modeled in this research is implemented on the working platform of Mat Lab and executed under H.264/AVC video standards in terms of embedding efficiency and time complexity respectively. Conclusively, the proposed encryption protocol proves to be an efficient method for securing the transmission of user data in wireless sensor networks respectively.

Keywords--- Internet of Things (IoT), Encryption, OM-XOR Optimal Matrix based XOR Steganography, CNN (Chaotic Neutral Network), NNEGC (Novel Neutral Elliptic Galois Cryptography), Adaptive Firefly Algorithm.

I. Introduction

IoT is a developing worldwide web founded data design helps in interchanging services. IoT is the design of managing buildings, vehicles, corporal devices, and extra possessions entrenched through software, actuators, electronics, and web linkage that allow this entity towards gathering then interchange the information. IoT is an advanced generation of statistics network which understands machine-to-machine communication. One of the basic methods of IOT is Wireless Sensor Network (WSN) and it is mostly utilized in interrelated smart sensors for monitoring and sensing. In healthcare, traffic, environmental, and industrial monitoring is done by WSN. The IoT enforce particular constraints regarding the energy budget, connectivity, and computational power [4].

WSN has been widely deployed in much application such as, healthcare, wildlife surveillance and accident reports. WSN is considered to be one of an important factor in IOT, which consist of numerous sensor nodes constrained in terms of their storage space [1]. Data aggregation is known as one of the technique to minimize the energy consumption of sensors. The benefit of using WSN in IOT may include integrity, scalability, robustness, and easiness in deployment. In WSNs data aggregation is well known technique, which on one hand plays an important role in energy preservation and make the network prone to different kinds of attack [15]. WSNs are exposed to various attacks, such as replay attack, tempering attack and injection attack. The resource-constrain characteristics of WSNs make existing abundant security algorithm unstable for WSNs. Consequently, ensuring security for data aggregation is a challenge. Encryption is the process of changing information in such a way as to make it unreadable by anyone except those possessing special knowledge (usually referred to as a "key") that allows them to change the information back to its original, readable form. Encryption is important because it allows you to securely protect data that you don't want anyone else to have access. [19].

Businesses use it to protect corporate secrets, government's use it to secure classified information, and many individuals use it to protect personal information to guard against things like identity theft. By this process the actual

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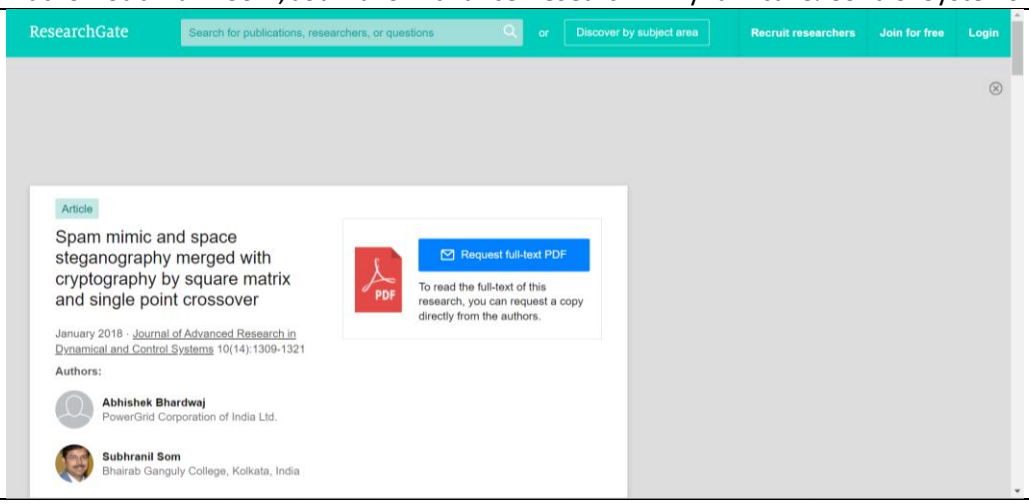
Author: Subhranil Som, Journal of Advance Research in Dynamical & Control Systems



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Author: Saurav Shome, Journal of Experimental Zoology, India.

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J. Exp. Zool. India Vol. 21, No. 2, pp. 1343-1351, 2018 | www.connectjournals.com/jez | *ISSN 0972-0030*

A STUDY ON THE DIVERSITY AND ABUNDANCE OF THE BUTTERFLY AND BIRD SPECIES IN BELGHARIA TOWN OF NORTH 24 PARGANAS DISTRICT, WEST BENGAL

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(Accepted 26 June 2018)

ABSTRACT : The present study emphasizes the diversity, richness and abundance of butterfly and bird species in Belgharia town situated in North 24 Parganas district in West Bengal during larger parts of 2017. 47 species of butterflies belonging 15 subfamilies and 5 families were recorded from the study area. Family Nymphalidae was the most prevalent among the five families of butterflies with 20 species followed by Lycaenidae, Pieridae and others. Regarding avian diversity, 56 bird species from 26 families and 10 orders were observed in Belgharia. The maximum number of bird species was recorded under family Ardeidae, followed by Picidae and Columbidae. The study indicates that though the town is a densely populated urban area, it has got a rich avian and butterfly fauna which needs active monitoring and protection.

Key words : Diversity, butterfly, bird, Belgharia.

INTRODUCTION

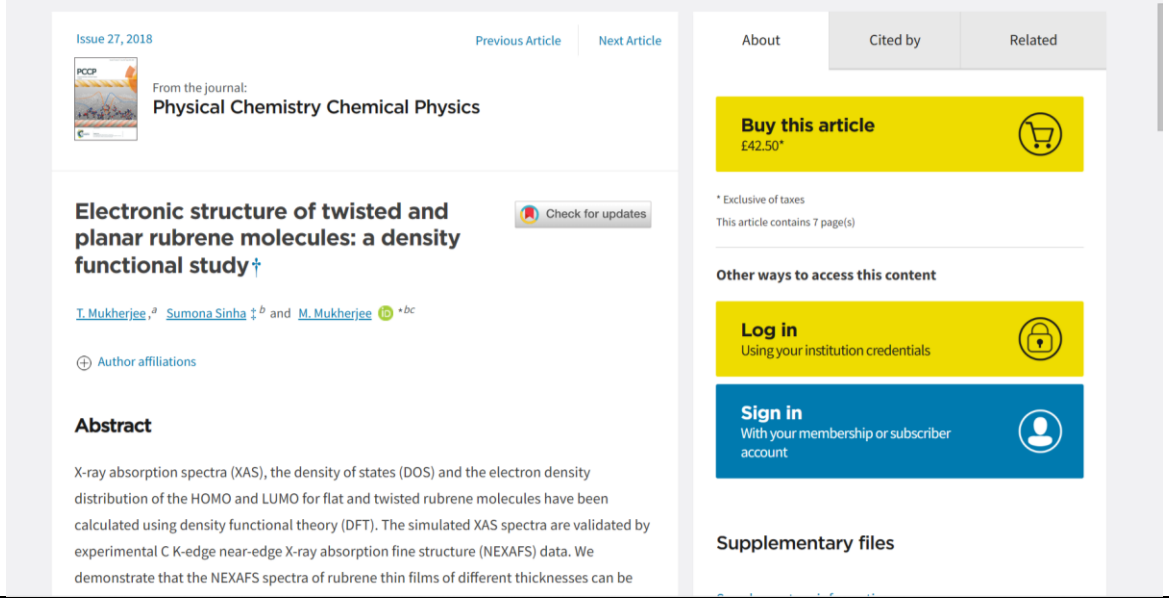
Butterflies are terrestrial lepidopteran insects having prominent roles in pollination and are important elements of the food web as they serve as prey for birds, bats and other insectivorous animals (Kunte, 2000). Butterflies have a history of long-term coevolution with plants as adults depend on nectar and pollen as their food while the caterpillars are dependent on specific host plants for foliage (Kehimkar, 2008; Smetacek, 2016). Many species of butterflies are strictly seasonal and extremely sensitive to disturbance and changes in the vegetation structure as well as microclimate (Blair, 1999; Menecheze *et al*, 2003). Minor changes in their natural habitat owing to anthropogenic activities may lead to their migration or local population extinction and for these reasons they are regarded as bioindicators of general health of any specified terrestrial ecosystem (Kocher and Williams, 2000; Bonebrake *et al*, 2010; Castro and Espinosa, 2015).

Birds comprise an extremely important group of vertebrates and occupy many levels of trophic webs, from mid-level consumers to top predators and thereby help to maintain sustainable population levels of their prey and predator species (Blair, 1996; Grimmett *et al*, 2011). Besides their roles in nutrient cycling, they are important in plant reproduction through their roles as pollinators and/or seed dispersers over very wide areas (Chace and Walsh, 2006). The activities of birds can have important consequences for the ecosystems they inhabit, making them incredibly important in the overall functioning of various ecosystems (Beissinger and Osborne, 1982; Blair, 1996). Some birds are considered keystone species as their presence in an ecosystem affects other species directly and maintains the structure and integrity of the community (Daily *et al*, 1993).

Both butterflies and birds are members of an extremely important group of 'model' animals used, for centuries, to investigate many areas of biological sciences, including such diverse fields as navigation, pest control, embryology, mimicry, evolution, genetics, ecology and environment, population dynamics and biodiversity conservation. They play various important roles in sustaining both terrestrial and aquatic ecosystems and therefore are good biological indicators of habitat quality as well as general environmental health (Crosby *et al*, 2015; Launer and Murphy, 1994).

Because of their dependence on the plants, diversities of both birds and butterflies may reflect overall plant diversity in the given area (Leps and Spitzer, 1990; Launer and Murphy, 1994; Daily *et al*, 1993). The conservation of birds and butterflies is necessary to sustain varied kinds of ecosystem services for human well-being. Both of these animal groups have been widely used by ecologists as model organisms to study the impact of habitat loss and fragmentation, climate change and

Author: Tapas Mukherjee, Physical Chemistry Chemical Physics



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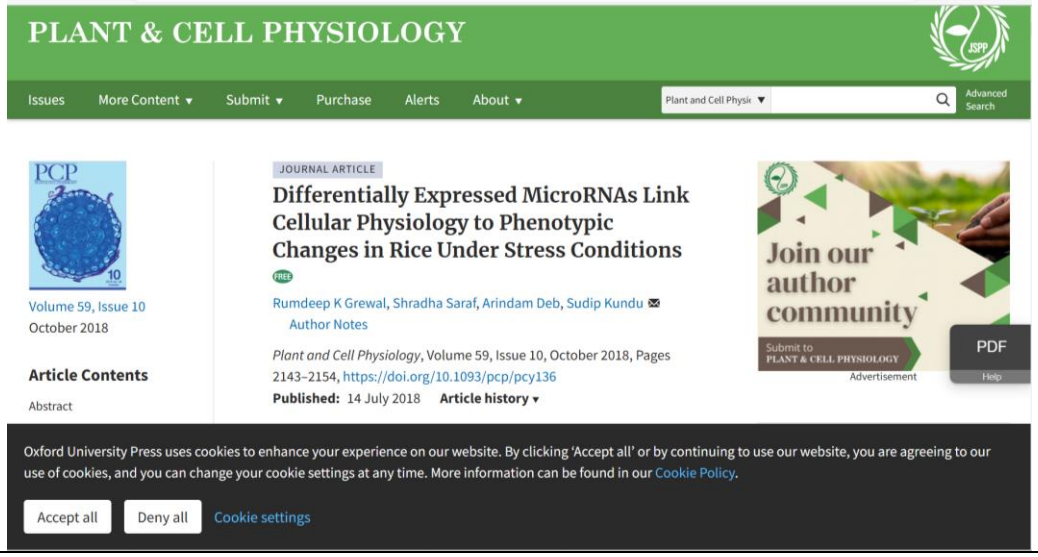

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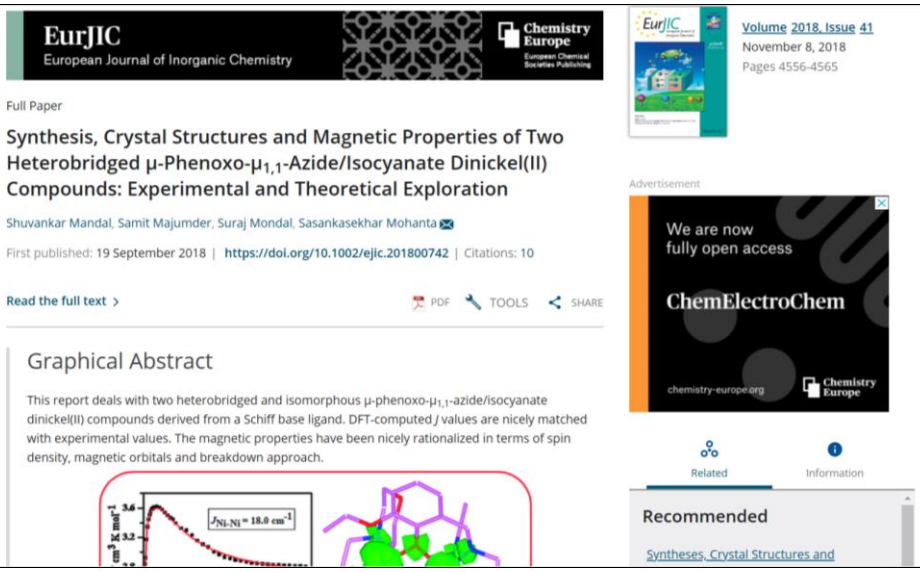

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Author: Debabrata Bhadra, Polymer Composites

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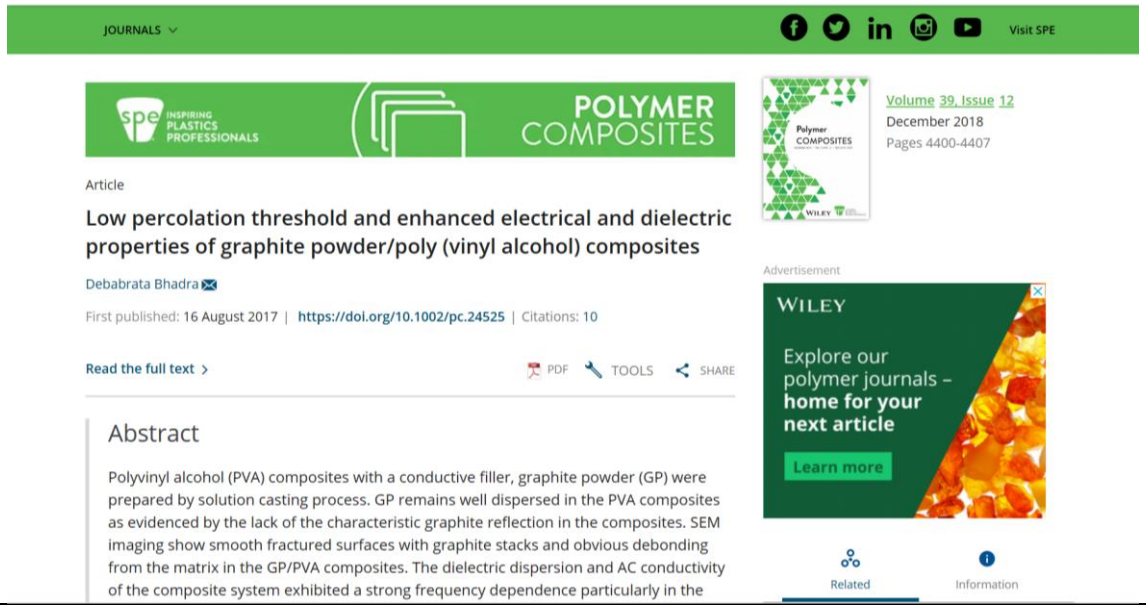
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Article

Low percolation threshold and enhanced electrical and dielectric properties of graphite powder/poly (vinyl alcohol) composites

Debabrata Bhadra

First published: 16 August 2017 | https://doi.org/10.1002/pc.24525 | Citations: 10

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Abstract

Polyvinyl alcohol (PVA) composites with a conductive filler, graphite powder (GP) were prepared by solution casting process. GP remains well dispersed in the PVA composites as evidenced by the lack of the characteristic graphite reflection in the composites. SEM imaging show smooth fractured surfaces with graphite stacks and obvious debonding from the matrix in the GP/PVA composites. The dielectric dispersion and AC conductivity of the composite system exhibited a strong frequency dependence particularly in the

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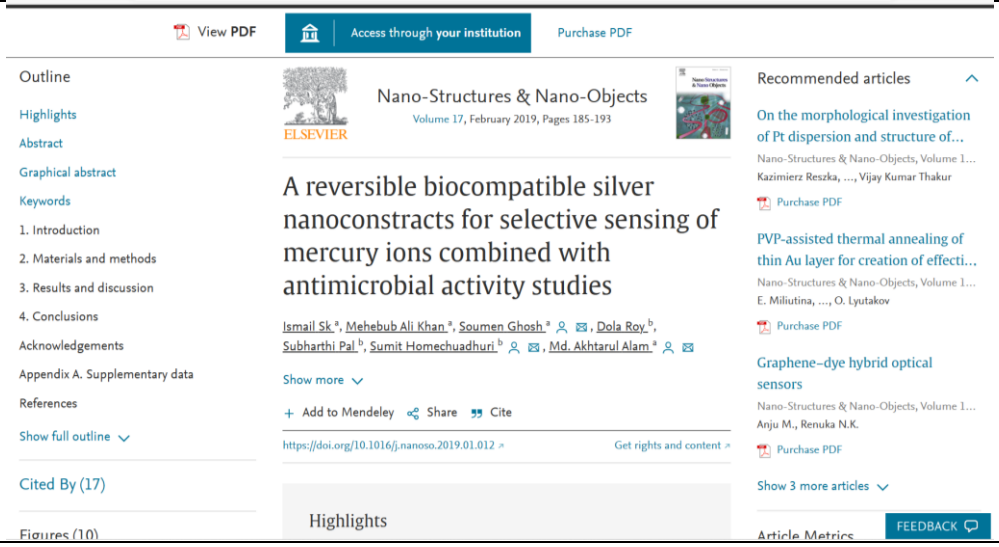
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Outline

Highlights
Abstract
Graphical abstract
Keywords
1. Introduction
2. Materials and methods
3. Results and discussion
4. Conclusions
Acknowledgements
Appendix A. Supplementary data
References

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Ismail Sk [a], Mehebub Ali Khan [a], Soumen Ghosh [a], Dola Roy [b], Subharthi Pal [b], Sumit Homechuadhuri [b], Md. Akhtarul Alam [a]

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Thermal behavior and decomposition mechanism of a series of crown ether based lanthanide(III) hexacyanometallate(III) compounds

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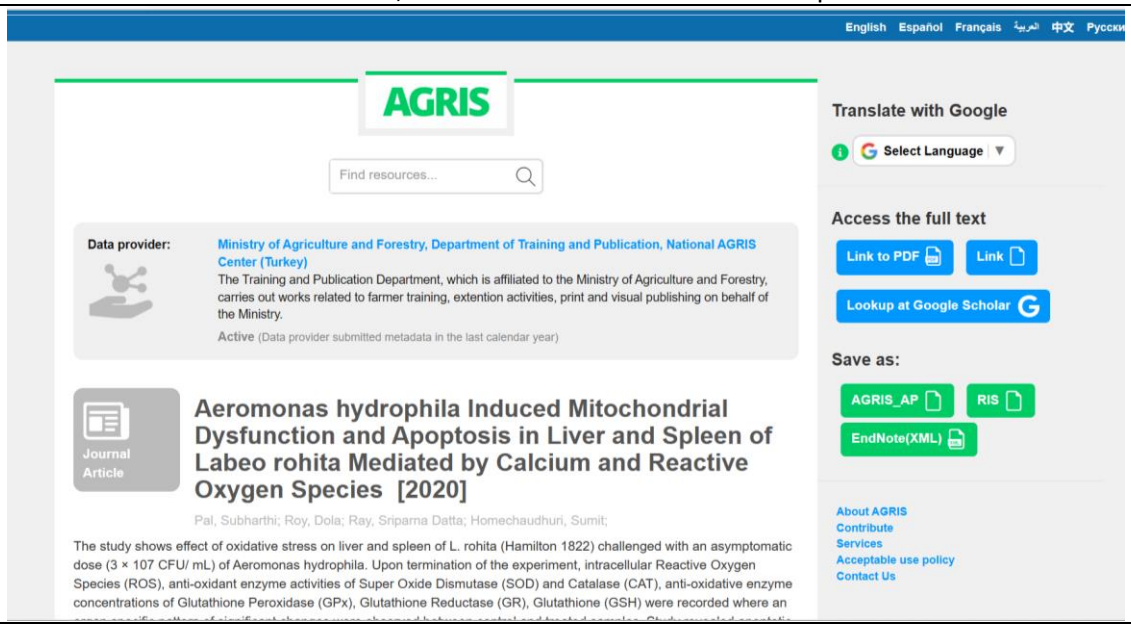
Thermal decomposition reactions of eight lanthanide(III) compounds (Ln = Ce, Nd, Sm, Eu, Gd and Tb) having l8-crown-6 and water molecules in the inner sphere and hexacyanoferrate(III)/hexacyanochromate(III)/hexacyanocobaltate(III) in the secondary sphere have been performed by means of TG-DTA in an atmosphere of dry nitrogen. The results show that the dissociation processes consist of several steps. The compositions of the products and the dissociation mechanisms have been understood from relative weight loss as well as from elemental analyses and FT-IR spectral data. It has been found that the relative stability with respect to the decomposition of the crown ether moiety depends on the atomic number of lanthanides or the nature of the 3d metal ion in the hexacyanometallate(III).

Keywords: Lanthanide(III), l8-crown-6, hexacyanometallate, TG-DTA, dissociation mechanism.

Introduction

Thermogravimetric analysis is a reliable method for studying physico-chemical behavior of coordination compounds[1,2]. There is a very close relation between thermogravimetric, heterometallic cyanides without an organic ligand. Accordingly, we have performed TG-DTA of the above mentioned series of eight compounds. Herein, we report TG-DTA of **1-8**, elemental analyses and FT-IR spectral data of the prod-

Author: Subharthi Pal, Turkish Journal of Fisheries and Aquatic Sciences



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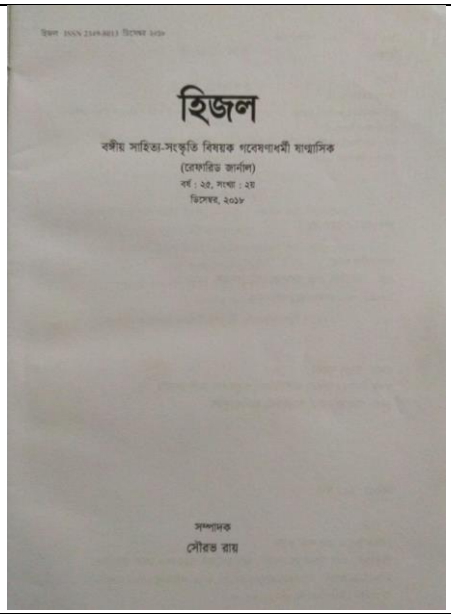
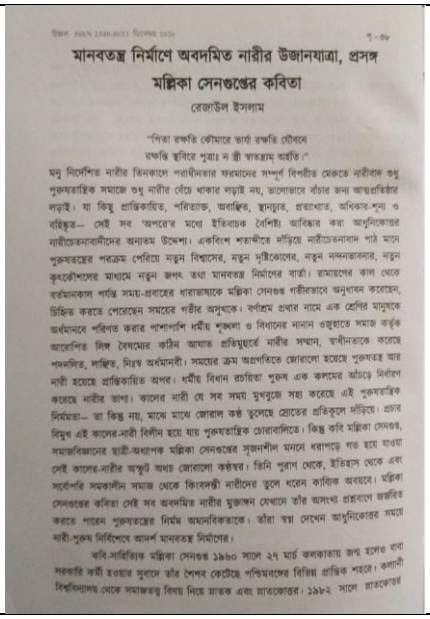


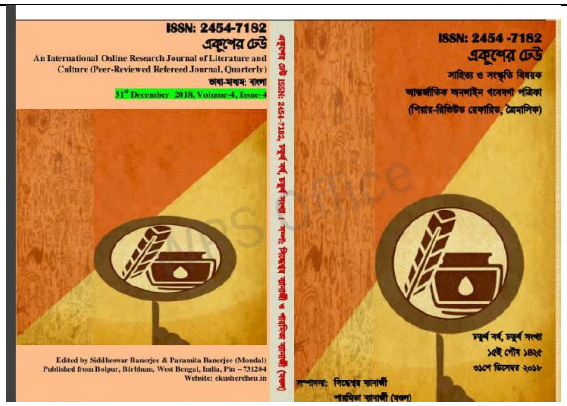

মানবতন্ত্র নির্মাণে অবদমিত নারীর উজানযাত্রা, প্রসঙ্গ
মল্লিকা সেনগুপ্তের কবিতা
রেজাউল ইসলাম

"পিতা রক্ষতি কৌমারে ভার্তা রক্ষতি যৌবনে
রক্ষন্তি স্থবিরে পুত্রাঃ ন স্ত্রী স্বাতন্ত্র্যম অর্হতি।"

মনু নির্দেশিত নারীর চিরকালে পরাধীনতার ফরমানের সম্পূর্ণ বিপরীত মেরুতে নারীরা শুধু পুরুষতান্ত্রিক সমাজে শুধু নারীর বেঁচে থাকার লড়াই নয়, ভালোভাবে বাঁচার জন্য আত্মপ্রতিষ্ঠার লড়াই। যা কিছু প্রান্তিকায়িত, পরিত্যক্ত, অবাঞ্ছিত, স্থানচ্যুত, প্রত্যাখ্যাত, অধিকার-শূন্য ও বহিষ্কৃত— সেই সব 'অপরের' মধ্যে ইতিবাচক বৈশিষ্ট্য আবিষ্কার করা আধুনিকোত্তর নারীচেতনাবাদীদের অন্যতম উদ্দেশ্য। একবিংশ শতাব্দীতে দাঁড়িয়ে নারীচেতনাবাদ পাঠ মানে পুরুষতন্ত্রের পরক্রম পেরিয়ে নতুন বিশ্বাসের, নতুন দৃষ্টিকোণের, নতুন নন্দনতত্ত্বের, নতুন কৃৎকৌশলের মাধ্যমে নতুন জগৎ তথা মানবতন্ত্র নির্মাণের বার্তা। রামায়ণের কাল থেকে বর্তমানকাল পর্যন্ত সময়-প্রবাহের ধারাভাষ্যকে মল্লিকা সেনগুপ্ত গভীরভাবে অনুধাবন করেছেন, চিহ্নিত করতে পেরেছেন সময়ের গভীর অসুখকে। বর্ণাশ্রম প্রথার নামে এক শ্রেণির মানুষকে অর্ধমানবে পরিণত করার পাশাপাশি ধর্মীয় শৃঙ্খলা ও বিধানের নানান ওজুহাতে সমাজ কর্তৃক আরোপিত লিঙ্গ বৈষম্যের কঠিন আঘাত প্রতিমুহূর্তে নারীর সম্মান, স্বাধীনতাকে করেছে পদদলিত, লাঞ্ছিত, নিগৃহ অর্ধমানবী। সময়ের ক্রম অগ্রগতিতে জোরালো হয়েছে পুরুষতন্ত্র আর নারী হয়েছে প্রান্তিকায়িত অপর। ধর্মীয় বিধান রচয়িতা পুরুষ এক কলমের আঁচড়ে নির্ধারণ করেছে নারীর ভাগ্য। কালের নারী যে সব সময় মুখবুজে সহ্য করেছে এই পুরুষতান্ত্রিক নির্মমতা— তা কিন্তু নয়, মাঝে মাঝে জোরাল কণ্ঠ তুলেছে স্রোতের প্রতিকূলে দাঁড়িয়ে। প্রচার বিমুখ এই কালের-নারী বিলীন হয়ে যায় পুরুষতান্ত্রিক চোরাবালিতে। কিন্তু কবি মল্লিকা সেনগুপ্ত, সমাজবিজ্ঞানের ছাত্রী-অধ্যাপক মল্লিকা সেনগুপ্তের সৃজনশীল মননে ধরাপড়ে গত হয়ে যাওয়া সেই কালের-নারীর অস্ফুট অথচ জোরালো কণ্ঠস্বর। তিনি পুরাণ থেকে, ইতিহাস থেকে এবং সর্বোপরি সমকালীন সমাজ থেকে কিংবদন্তী নারীদের তুলে ধরেন কাব্যিক অবয়বে। মল্লিকা সেনগুপ্তের কবিতা সেই সব অবদমিত নারীর মুক্তাঙ্গন যেখানে তাঁর অসংখ্য প্রশ্নবাণে জর্জরিত করতে পারেন পুরুষতন্ত্রের নির্মম অমানবিকতাকে। তাঁরা স্বপ্ন দেখেন আধুনিকোত্তর সময়ে নারী-পুরুষ নির্বিশেষে আদর্শ মানবতন্ত্র নির্মাণের।

কবি-সাহিত্যিক মল্লিকা সেনগুপ্ত ১৯৮০ সালে ২৭ মার্চ কলকাতায় জন্ম হলেও বাবা সরকারি কর্মী হওয়ার সুবাদে তাঁর শৈশব কেটেছে পশ্চিমবঙ্গের বিভিন্ন প্রান্তিক শহরে। কলকাতা বিশ্ববিদ্যালয় থেকে সমাজতত্ত্ব বিষয় নিয়ে স্নাতক এবং স্নাতকোত্তর। ১৯৮২ সালে স্নাতকোত্তর

Author: ড. রেজাউল ইসলাম, একুশের ঢেউ



Author: Sanjit Kr. Das, International Journal of Integrated Research and Development

Paper Id: IJIRD/17/V-1/July/18 . Volume: 1/Issue: 13/July 2018-ISSN: 2278 8670

Status of Self-Financing Courses in West Bengal

Dr. Sanjit Kr. Das,
Vice-Principal, Bhairab Ganguly College.

Abstract:

This is an empirical study based on secondary data. This paper is a modest attempt to show the status of self-financing courses in West Bengal. We all know that due to the volume of population and lack of opportunity to take education from Government established school, colleges and universities many of us are bound to take education from private institutions and Government now realizing the today's need allow private sector investment in education sector side by side Government allows colleges to conduct self-financing courses in the arena of higher education. Against this backdrop this study is made to explore the status of self-financing courses in West Bengal. It is found that there is large variability in terms of intake capacity, fees structured and qualified teachers across the Universities and Colleges of West Bengal. However, to meet the present demand of higher education the role of self-financing courses in West Bengal is undeniable.

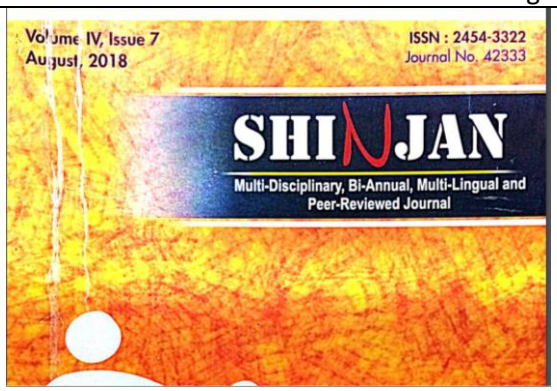
Keywords: *Self-financing Courses, Intake Capacity, Higher Education, Fees Structure, West Bengal.*
Email: sanjitbgc@gmail.com.

(Paper received on 30/05/2018; Paper accepted on 05/06/2018; Paper published on 1st July, 2018.)

I. Introduction :

It is well known that the education is one of the crucial weapons of a country for her socio-economic development. It goes without saying that expansion of education eradicates the problems of superstition, mal-nutrition, communalism etc. and brings gender equality and eliminates the curse of poverty. Further, development in the area of science and technology improves total factor productivity of a country and under globalised economy many other countries may avail the benefits of technological innovation through technology transfer. However, in case of developing countries problems are many. Scarcity of funds, high population in terms of numbers, low productivity and unemployment actually hamper growth process. In case of developing countries Government has insufficient funds for expanding education as well as there is an insufficient fund for expenditure on health. Further, the far the country has from her educational attainment the more problems that country will go to face, because absorption of recent development in the field of technology will be sub-optimal. Again, in the field of

Author: Sagar Das, SHINJAN



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Trade Credit-A Strategic Practice of Liquidity Management

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Abstract

Trade credit is an arrangement for borrowers to buy goods or services requires for business without making immediate cash payment. *Large wholesalers operate the role of lender imbedded from the business of selling commodities. In LDCs, where formal lenders are scarce at best, trade credit plays an even more significant role in small firms' activities. With West Bengal as the site of case study, this paper aims to look at the strategies of the indigenous characters of trade credit arrangements that ensure its persistence even today. We have been selected three urbanised districts Kolkata, North 24 Parganas and Howrah, which forms the core business area, including formal businesses and informal businesses in the state. Trade credit bears the characteristic features, such as low transaction cost, interest free credit and no credit limit. The reason that trade credit appears to be a popular form of credit lies within the structure of a standard trade credit contract. Trade Credit, deploys a 'two part contract' mechanism to retain a fixed set of informal borrowers of non-perishable commodities, which benefits both the lender and the borrower. This credit contract implicitly imposed usurious rate of interest for the lender. Trade credit strategically solves the problem of capital inadequacy of traders with its intrinsic nature. The liquidity managing activities has been worked into force through its two linkages between commodities and finance. In this relational contracting method reference acts as collateral. The liquidity management of this credit practice is the focus of the paper.*

Keywords: *Trade credit, Commodities, Credit contract, Liquidity Management, Wholesalers*

Introduction

Trade credit is an important form of financing for businesses in a broad range of industries and economies. Even in the United States, with its extremely well developed financial markets, trade credit is the largest single source of short-term financing (Trade Credit arises when a supplier allows a small trader to defer payments for both intermediate and final goods without paying money at the moment of delivery of the products (Cunat, 2007). Trade Credit is an arrangement between the borrower-cum-trader and the trader-cum-lender for purchase of goods without making immediate cash payment. It is the credit extended for business by lenders who lets the borrower to sell the product and is ready to accept the repayment later after

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Seamus Heaney's Socio-Political Stance through Mythology

Abstract:

From the outset of his poetic career Irish poet Seamus Heaney (1939-2013) had acquired the attention of Irish literary and non-literary society, from whose perspective Heaney dispossessed himself of all the native obligations that he was expected to perform as a renowned citizen of Ireland at the moment of political turmoil, causing real anxiety issues among its inhabitants. Being unable to define overtly his individual stasis towards his own country, Heaney did not absolutely detach himself from all the unwritten or unvoiced obligations. In such a point of uncertainty, he chose mythology for some of the poems as his articulating agency to enunciate his current position. His approach in rethinking mythology according to his own principle has never found any counterpart before- his represeutation of myth is as much worthwhile as his own critical position. There are many remarkable poems like "Personal Helicon", "Hercules and Antaeus", "The Underground", "Terminus" that defined explicitly his association with

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Art of Apt Its Tools & Attack Vectors and Mitigation Techniques

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Abstract: Advanced persistent threat is a primary security concerns to the big organizations and its technical infrastructure, from cyber criminals seeking personal and financial information to state sponsored attacks designed to disrupt, compromising infrastructure, sidestepping security efforts thus causing serious damage to organizations. A skilled cybercriminal using multiple

Author: Subhranil Som, Patent

Filed patent titled with "**Automated Wireless Sensor's Energy Saving System**".
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अर्णवघोषालः
ओधड्डाकः, अद्वैतवेदान्तविभागः,
राष्ट्रियसंस्कृतविद्यविद्यालय, तिरुपति

प्रमाणेषु नव्यन्यायस्य प्रभावः

अर्णवघोषालः

लक्षणप्रमाणाभ्यां हि वस्तुसिद्धिरिति नियमः। तत्र लक्षणस्वरूपं लक्षतावच्छेदकसमनियत-असाधारणः धर्म इति नैयायिकमतम्। तच्च लक्षणं यावल्लक्ष्यभावि व्यावर्तकं स्वरूपलक्षणम्। अयावल्लक्ष्यभावि व्यावर्तकम् तटस्थलक्षणम् इति द्विधा विभज्यते। सत्यं ज्ञानम् आनन्द इति ब्रह्मणः स्वरूपलक्षणम् इत्युक्त्वा शङ्कते – लक्ष्यवृत्तिः धर्मः एव लक्षणम्। यदि स्वरूपमेव लक्षणं तर्हि स्वस्य स्ववृत्तित्वम् अनुपपन्नम् इति। तत्रोच्यते - अभेदेऽपि भेदं परिकल्प्य स्ववृत्तित्वमिति। आनन्दादयः ब्रह्मणः अपृथक्त्वेऽपि पृथगिव अवभासन्ते इति साम्प्रदायिकाः। तथा जगज्जन्मस्थितिकारणत्वम् इति यतो वा इमानि भूतानि जायन्ते इति श्रुतिनिर्णितं ब्रह्मणः तटस्थं लक्षणम् इति वेदान्तिभिरङ्गीक्रियते। ब्रह्मसाक्षात्कारे जगतः मिथ्यात्वेन निवृत्तौ ब्रह्मणि तत्कारणमपि निवृत्तम्। नैयायिकानामपि इदं तटस्थलक्षणमभिमतमिति प्रतीयते। अत एव गन्धवत्त्वं पृथिव्याः लक्षणम् इति तटस्थलक्षणम् उक्त्वा प्रलयकाले पृथिवीपरमाणुषु उत्पत्तिक्षणविनष्टे घटे च गन्धस्याभावाद् अव्याप्तिमुक्त्वा गन्धसमानाधिकरणद्रव्यत्वापरजातिमत्वम् इति लक्षणपरिष्कारः तैरङ्गीक्रियते।

अद्वैतवेदान्तशास्त्रस्य प्रमाणेषु न्यायवैशेषिकदर्शनस्य कियान् प्रभावः अस्ति तदिदानीं चिन्त्यते। प्रथमतः। स्मृतेः प्रमात्वमभ्युपगच्छतां नैयायिकानां मतम् अवलम्ब्यैव अनधिगत अबाधितार्थविषयज्ञानत्वं प्रमात्वमिति प्रपञ्चितम्। स्मृतेरधिगतार्थविषयत्वात् प्रामाण्यं नास्ति इति अभिप्रायः। वस्तुपरिच्छेदाय व्यवहाराय च प्रमाणमपेक्ष्यते। इदं द्वयमपि स्मृतौ पूर्वानुभवेनैव सिद्धमिति अतः स्मृतेरनुवादस्य च प्रामाण्यं नेच्छति भाट्टाः। वेदान्तिनां लक्षणं द्वयमिदं अनधिगतम् इति पदेन निरस्तम्। अयं घट अयं घट इति धारावाहिक बुद्धिस्थले तु विषयभेदाभ्युपगमे एव ज्ञानभेदो वक्तुं शक्यते। विषयस्य चैकत्वे ज्ञानस्यापि एकत्वमेव। अर्थेनैव विशेषो हि निराकारतया धियाम् इति। एवमेव सविकल्पकनिर्विकल्पकभेदस्तु अद्वैतिभिः स्वीक्रियते। परन्तु सन्निकृष्टविषयं शवद्जन्यमपि ज्ञानम् अस्माभिः प्रयत्क्षमिति उच्यते यथा त्वं सुखि इति ज्ञानम्। तेन स्वगतसुखज्ञानं जायते। तस्य ज्ञानं प्रत्यक्षमिति स्वीक्रियते। यथा दशमस्त्वमसि इति वक्तृवाक्यजन्यमपि ज्ञानं दशमोऽहम् इति च श्रोतृज्ञानं वाक्यजन्यमपि सन्निकृष्टमित्यतो हेतोः तस्य प्रत्यक्षत्वं स्वीक्रियते अस्माभिः। तथैव तत्त्वमसि वाक्यजन्यं ज्ञानम्। इन्द्रियाजन्यमपि प्रयक्षशब्दजन्यमपि ज्ञानं प्रत्यक्षमिति तत्र स्वीक्रियते विवरणकारैः। विशेषणविशेषसम्बन्धावगाहि ज्ञानं सविकल्पकम् सम्बन्धानवगाहिज्ञानं निर्विकल्पकम् इति यदुच्यते सर्वमपि तत् अस्माभिः स्वीक्रियते। तद्वस्तुतः नैयायिकप्रभवितमेव इति अस्माभिः अद्वैतिभिः उक्तम्। किञ्च अन्यत्रापि सन्निकर्षस्वीकारविषयेऽपि। षोढा सन्निकर्षाः नैयायिकैः स्वीकृताः। अद्वैतिनस्तु तत्र स्वीकुर्वन्ति। चैतन्याभिव्याङ्गकवृत्तिजनने संयोगादीनां सन्निकर्षाणां विनियोगमिच्छन्तो वेदान्तिनः समवायस्य नित्यसम्बन्धस्य तिरस्कारेण

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तत्स्थाने तादात्म्यम् अभिसिञ्चन्ति। तत्र अद्वैतिनां मते संयोगः, संयुक्तादात्म्यम्, आवश्यकं चेत् संयुक्तादात्म्यतादात्म्यम् इति सन्निकर्षः स्वीक्रियते। कुतः तत्र समवायसम्बन्धः वेदान्तिभिः न स्वीक्रियते इति चेत् नित्यसम्बन्धः समवायः इत्युच्यते। यदि तद्भिन्नं किमपि नित्यं स्यात् तर्हि तत्र सिद्धान्तविरोधः प्रसज्येत। अतः नित्यसम्बन्धरूपः समवायः अद्वैतिभिः नाङ्गीक्रियते। प्रमेयतायम् अत्यन्ताभावप्रतियोगीत्वम् अस्ति इति तैरुच्यते। अद्वैतिनां मते तु ब्रह्मनिष्ठात्यन्ताभावप्रतियोगित्वमेव प्रमेयत्वादीनाम्। प्रमेयत्वं ब्रह्मणि नास्ति। अतः प्रमेयत्वादीनां ब्रह्मनिष्ठात्यन्ताभावप्रतियो-गित्वमेव न तु अप्रतियोगित्वम् इत्यतः तत्र केवलान्वयिरूपं किमपि नास्ति इत्यतो हेतोः केवलान्वयिरूपं अनुमानम् अस्माभिः नाङ्गीक्रियते। किञ्च तत्र

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Impact of Socio-Economic and Technological factors on India's Economic Growth during post liberalization periods

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Abstract

This study is based on secondary data and basically empirical in nature. This study consider one country i.e. India a developing one and time period is considered here is post liberalization period i.e. from 1995 to 2017. The aim of this study is to measure various socio-economic and technological variables on GDP and PCGDP separately. We have used linear regression method for measuring the impact of explanatory variables. In this study we have considered economic freedom index and rule of law index as an explanatory factors but we see that their effects are not significant.We, in our study have found that the variable total factor productivity (TFP) and mean years of schooling (MYS) have positive and significant effect on GDP whereas globalization index (GI) has negative and significant effect on GDP Life expectancy at birth (LE) has also positive effect on GDP but at moderately significant level. We also find that the LE, PCDC and EMPR have positive and significant effect on the PCGDP whereas GI has negative and significant effect on PCGDP

Keywords: *India, GDP, PCGDP, Total factor Productivity, Mean Years of Schooling, Life expectancy.*

(Paper received on 30/04/2019; Paper accepted on 15/05/2019; Paper published on 1st June, 2019.)

I. Introduction: It is known to all that the growth of any country as measured in terms of GDP depends on several factors like levels of education, technological progress, globalization, rule of law so on and so forth. Interestingly, it has been found that in developing countries since technological attainment is low they try to imitate or purchase modern technology from developed countries and thus spend a significant portion of GDP to acquit it. It is basically owing to the fact of lower level of educational attainment compared to developed countries. Majority of the developing countries have taken the liberalization process in the decades of 90's since they believe that globalization can affect their economy to large extent. There is a number of studies that reflect the fact that globalization has an adverse effect on the income of developing or less developed countries but a number of studies are there that reflect globalization has positive and significant levels on income and employment in case of developing countries. Globalization has many dimensions: (i) economic globalization; (ii) technological globalization and (iii) social and

Author: Sanjit Kr. Das, International Journal of Integrated Research and Development

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Keys to Get Success in Leading Today's Corporate Sector: Guidelines from Arthashastra

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Abstract

One of the keys to successful leader of the present day corporate sector is the ability to understand and apply management principles and techniques efficiently and effectively. Managers must develop an in-depth knowledge of past and present models, theories and processes to manage intelligently. In contemporary management practice, the role of the leader is very much important and we find stark similarities between operating the corporate sector and governing a monarchy as depicted by Kautilya in Arthashastra. This paper argues that in this complex business environment some of the guidelines of Arthashastra regarding the role of leader in smoothly running a corporate sector are very much relevant.

Keywords: *Arthashastra, Leader, Corporate, Guidelines.*

(Paper received on 30/09/2019; Paper accepted on 20/11/2019; Paper published on 1st December, 2019.)

Introduction

According to Kautilya, the King can rule properly to govern like a concern father. Kautilya has opined that a king should not have any self-interest, happiness and joy for himself. His satisfaction lies in the welfare and happiness of his people, i.e. he has to submerge his personality into the larger personality of his people (*Praja Sukhe Sukham Rajya)*. Kautilya mentioned that the happiness of the king lies in the happiness of his subject; and welfare state means welfare of the people (*Bahujanasukhaya bahujanahitayacha*). Kautilya has mentioned that "*Control over the senses, which are motioned by training in the sciences, should be secured giving up lust (kaam), anger (krodha), greed (lobha), pride (mana), arrogance (madh) and overexcitement (harsha)*". He has mentioned that the role of a leader is very critical because he has to take varieties decisions considering different types of complexities in day to day business. The leader must have a close look after the persons around him and he must set himself as an example to the followers. The policy suggested in *Arthashastra* attempts to strike a balance between the delicate interests of the parties involved in the corporate system. Kautilya has commented "*The objective of any king (leader) or state (business organization) is to create, expand, protect and enjoy wealth*". Kautilya has explained the importance of the king (leader) in making logical distribution of wealth among his subjects. He suggests "*Brevery, resentment, quickness and dexterity-these are the qualities of energy*". This is applicable to the management of business finance as well. The way a business organization distributes and manages its profit, determines its future financial well-being.

Leadership Qualities

Every leader needs to plan properly for execution of a work and for this some advisors cum associates are necessary (*sahaysadhyamrajatyam*). According to Kautilya, it is the king who sets the tune of whole administration with the advice of the royal officers where the supremacy of everything vests with the king. Before appointing any advisor the king should

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Relevance of Accounting Practices of Arthashastra in Today's Business World

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Keywords
Accounting, Arthashastra, Guidelines, Treasury.

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ABSTRACT

According to Kautilya, the most important element of the state is the Treasury or Finance and without it the well being (yogakshema) of the people may not be possible. Kautilya, the writer of Arthashastra, mentioned that a strong and wealthy monarchy would be in a position to protect the interest of the people against the invasion of other kings. In Arthashastra, Kautilya emphasized on creation of a welfare state where the government plays a key role in the protection and promotion of the economic and social well-being of its citizens. Kautilya was of the opinion that treasury was the most important ingredient for a State's prosperity and for this reason strict guidelines were provided for maintenance of proper accounting system. The present accounting principles and standards are very much similar those that used in the Arthashastra during 4th Century B.C. It covers the accounting principles and standards, role and responsibilities of accountants and auditors and also the methodology of accounting, auditing and provides necessary steps for prevention of misappropriation and fraud.

1. Introduction

Arthashastra is about different aspects of governing a monarchy such as, administration, diplomacy, law, taxation, revenue, business, trade, etc, *Arthashastra* contains 150 chapters, in 15 books, which includes topics like national security issues, administration of justice and economic development policies. Since long *artha* is regarded as one of the *trivarga (artha, dharma,and karna)* or three goals of human existence but it stands for material well-being and the means of securing the material well being. The word *Arthashastra* literally means principles of money or wealth in any form such as cattle rearing, agriculture etc. and it tried to endeavour acquisition and preservation of the "*Artha*" or wealth. So Kautilya had given special emphasis on application of proper accounting system so that treasury could be enriched. This paper intends to explore the accounting principles and standards applied in the ancient India and its relevance in the modern perspective.

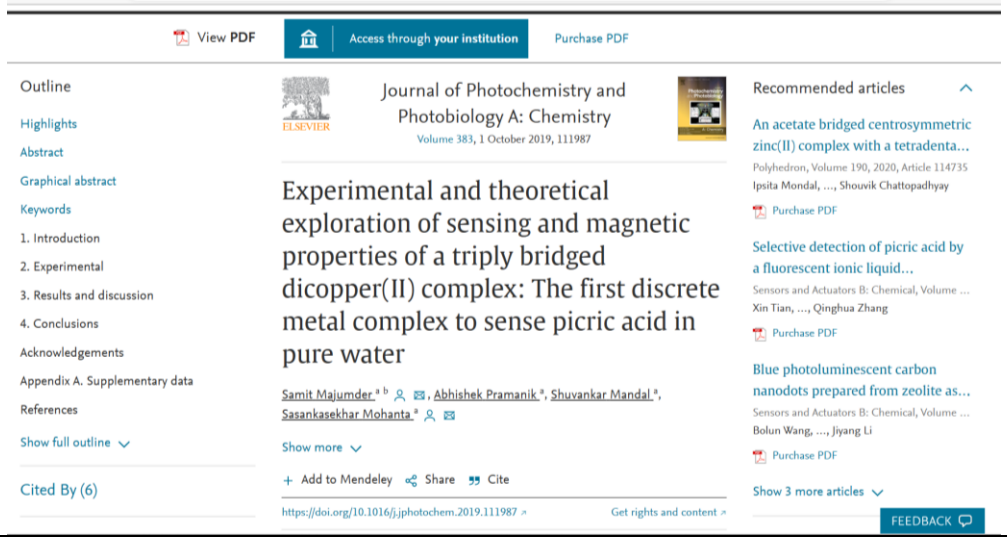
2. Methodology

This paper is an analytical study and it is based on secondary data, There are many books available on different aspects of Kautilya's Arthshastra which was originally in Sanskrit. Later it was translated in English by many scholars. Sources of data collection include books written on Arthshastra by different authors, articles published in various journals and papers published by various authors on the subject.

3. Accounting Concepts in Arthashastra

In *Arthashastra*, the accounting year is termed as *karmasamvatsarah* which includes 364 days and night constitute the year of work. The accounts should come in on the *asadha* full moon day when the officers have come with sealed accounts books and balances in sealed containers (*samudrapustakabhandanivikanam*). It covered the method of consolidating the accounts from various departments of the government to assess the net income and loss. The accountants were required to furnish the completed annual accounts to the head office mid-July. It means that the financial year was fixed to July-June period and with a full process for closure of accounts and audit of the same. It may be presumed that closing of accounts was fixed in the month of *asadha*, the period of monsoon and rain restricted the king, army and officers in the kingdom forced them to concentrate on the official works. *Karanadhisthitam* refers the twelve sections of the yearly accounts, one for each month so accounts for the each and every month as well as for the whole year were maintained. The superintendent should caused to be entered in the record-books; the extent of the number, activity and total income of the departments; the amount of increase or decrease in the use of the various materials, expenses, excess, surcharge, mixing, place, wages and labourers in connection with the factories; the price, the quality, the weight, the measure, the height, the depth and the container in connection with the jewels, articles of high value, of low value and forest produce; laws, transactions, customs and fixed rules of regions, villages, castes, families and corporations; the receipts of favours, lands, use, exemptions and food and wages by those who serve the king; the receipts of jewels and land and the receipts of special allowances and payments against sudden calamities, by the king and his queens and sons; and payment and full receipts in connection with peace and war with allies and enemies. After collecting all these, the superintendant of accounts should hand over in writing the estimated revenue, accrued revenue, outstanding revenue, income and expenditure, balance, custom and fixed rules to all the departments. After finalization of the total of income and expenditure and balance, he should cause the balance to be taken away to the treasury. The difference between *nitya* and *labha* is that the former expenditure is incurred from day to day, the later at fixed intervals of time, a fortnight, a moth, a year etc. The term *labha* represents the point of view of the recipient, labourer, officer etc. as in *bhaktavetanalabha*, and that it s a sort of deferred payment. It may also stand for a lump sum payment. The term *samjatad ayavyayavisuddha*

Author: Samit Majumder, Journal of Photochemistry & Photobiology A: Chemistry



Author: Samit Majumder, ChemistrySelect

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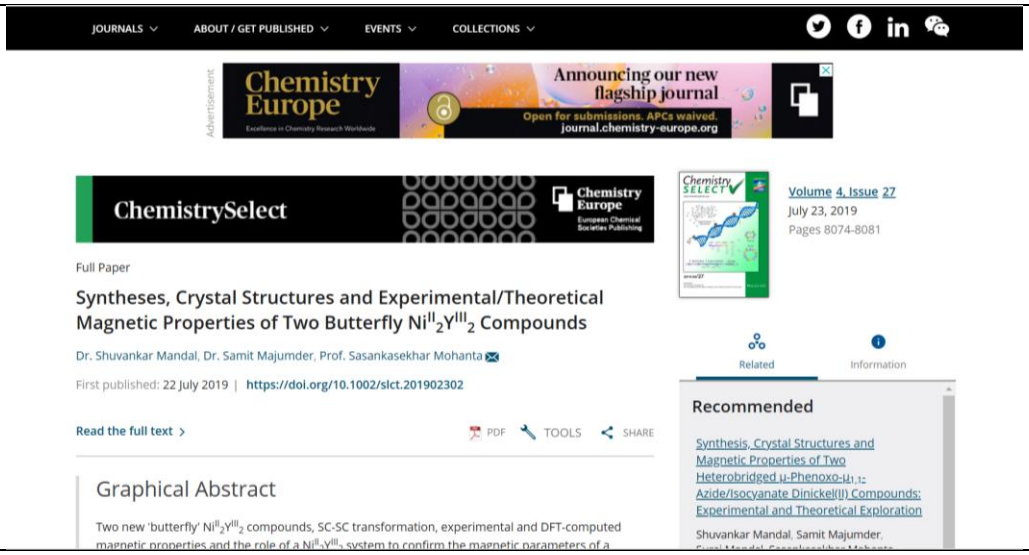
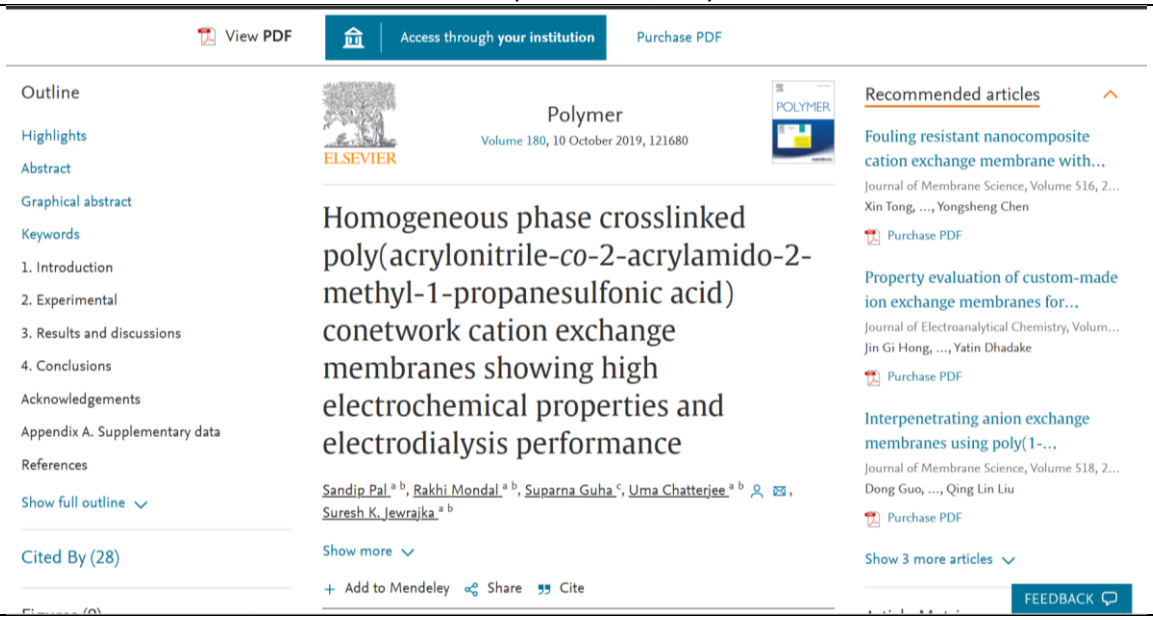
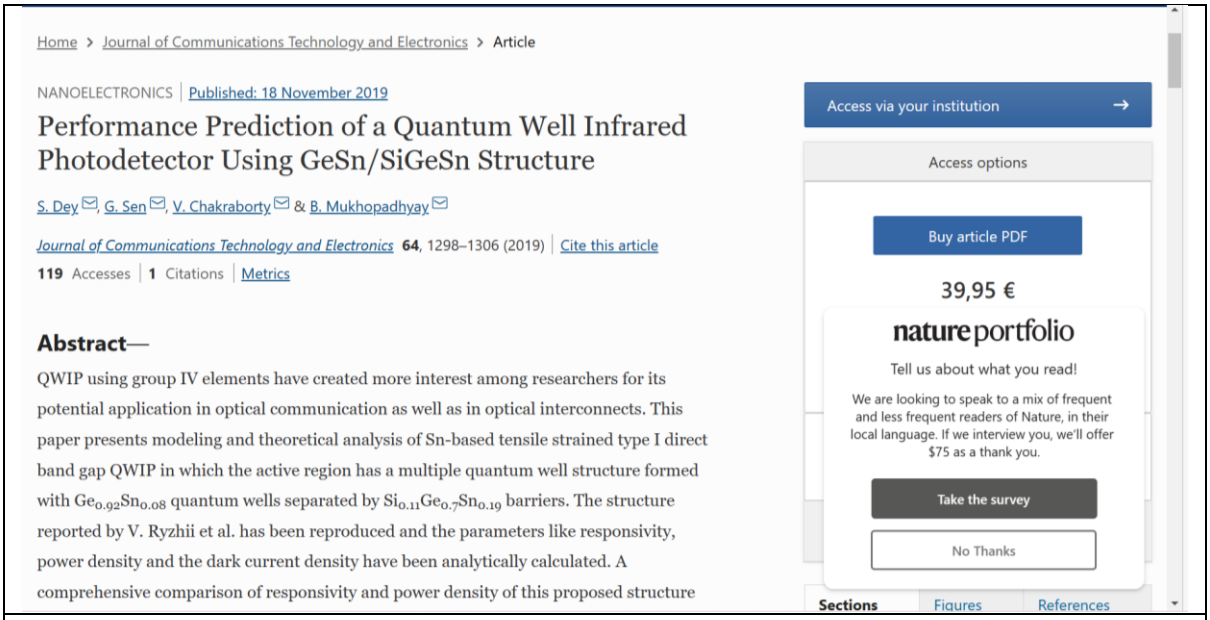


Author: Suparna Guha, Polymer



Author: S. Dey, Journal of Communications Technology and Electronics



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NANOELECTRONICS | Published: 18 November 2019

Performance Prediction of a Quantum Well Infrared Photodetector Using GeSn/SiGeSn Structure

S. Dey, G. Sen, V. Chakraborty & B. Mukhopadhyay

Journal of Communications Technology and Electronics **64**, 1298–1306 (2019) | Cite this article

119 Accesses | **1** Citations | Metrics

Abstract—

QWIP using group IV elements have created more interest among researchers for its potential application in optical communication as well as in optical interconnects. This paper presents modeling and theoretical analysis of Sn-based tensile strained type I direct band gap QWIP in which the active region has a multiple quantum well structure formed with $Ge_{0.92}Sn_{0.08}$ quantum wells separated by $Si_{0.11}Ge_{0.7}Sn_{0.19}$ barriers. The structure reported by V. Ryzhii et al. has been reproduced and the parameters like responsivity, power density and the dark current density have been analytically calculated. A comprehensive comparison of responsivity and power density of this proposed structure

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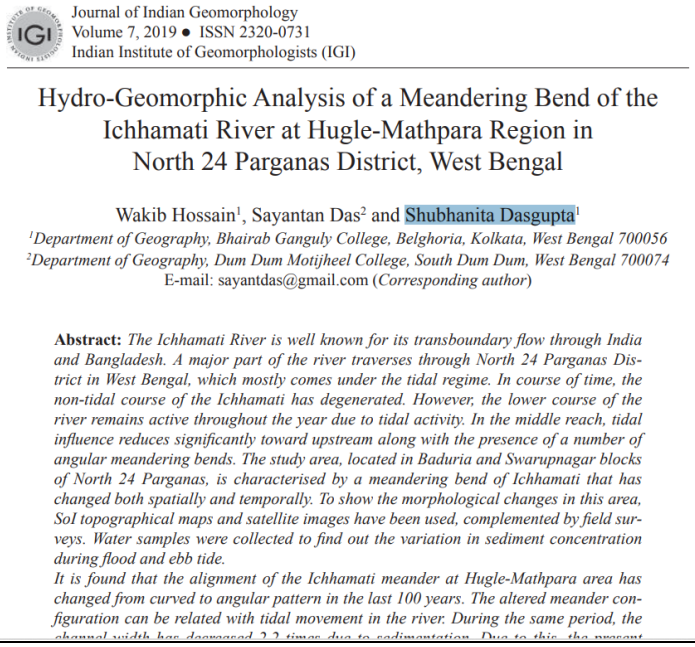

Journal of Indian Geomorphology
Volume 7, 2019 ● ISSN 2320-0731
Indian Institute of Geomorphologists (IGI)

Hydro-Geomorphic Analysis of a Meandering Bend of the Ichhamati River at Hugle-Mathpara Region in North 24 Parganas District, West Bengal

Wakib Hossain[1], Sayantan Das[2] and Shubhanita Dasgupta[1]
[1]*Department of Geography, Bhairab Ganguly College, Belghoria, Kolkata, West Bengal 700056*
[2]*Department of Geography, Dum Dum Motijheel College, South Dum Dum, West Bengal 700074*
E-mail: sayantdas@gmail.com (*Corresponding author*)

Abstract: *The Ichhamati River is well known for its transboundary flow through India and Bangladesh. A major part of the river traverses through North 24 Parganas District in West Bengal, which mostly comes under the tidal regime. In course of time, the non-tidal course of the Ichhamati has degenerated. However, the lower course of the river remains active throughout the year due to tidal activity. In the middle reach, tidal influence reduces significantly toward upstream along with the presence of a number of angular meandering bends. The study area, located in Baduria and Swarupnagar blocks of North 24 Parganas, is characterised by a meandering bend of Ichhamati that has changed both spatially and temporally. To show the morphological changes in this area, SoI topographical maps and satellite images have been used, complemented by field surveys. Water samples were collected to find out the variation in sediment concentration during flood and ebb tide.*
It is found that the alignment of the Ichhamati meander at Hugle-Mathpara area has changed from curved to angular pattern in the last 100 years. The altered meander configuration can be related with tidal movement in the river. During the same period, the channel width has decreased 2.2 times due to sedimentation. Due to this, the present

Author: Janki Singh, Critical Imprints

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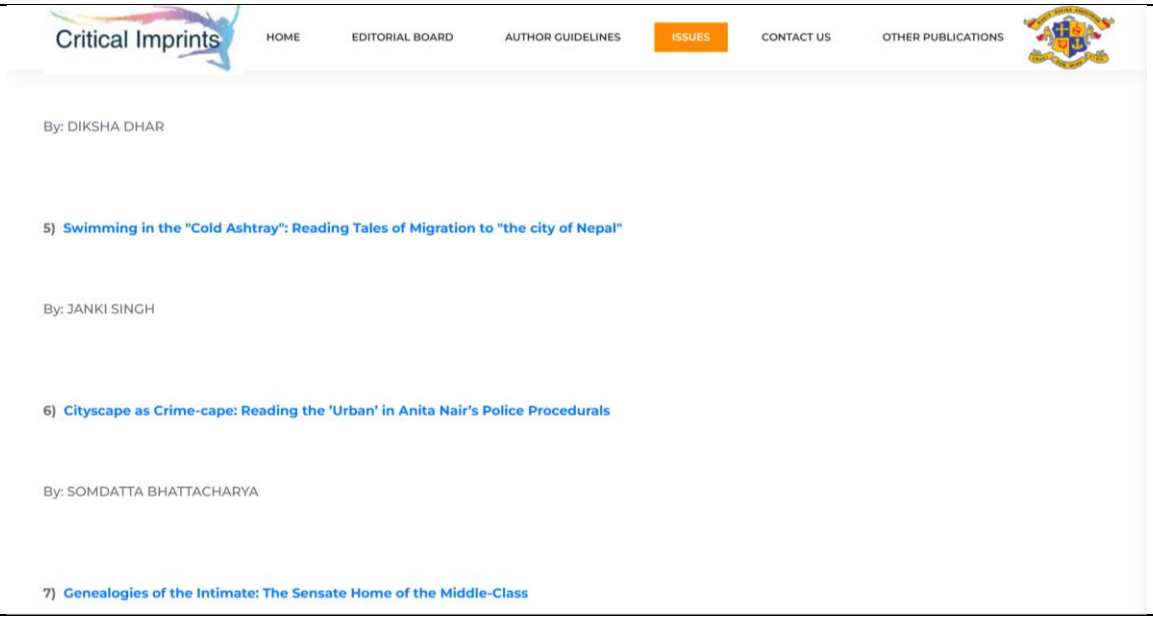

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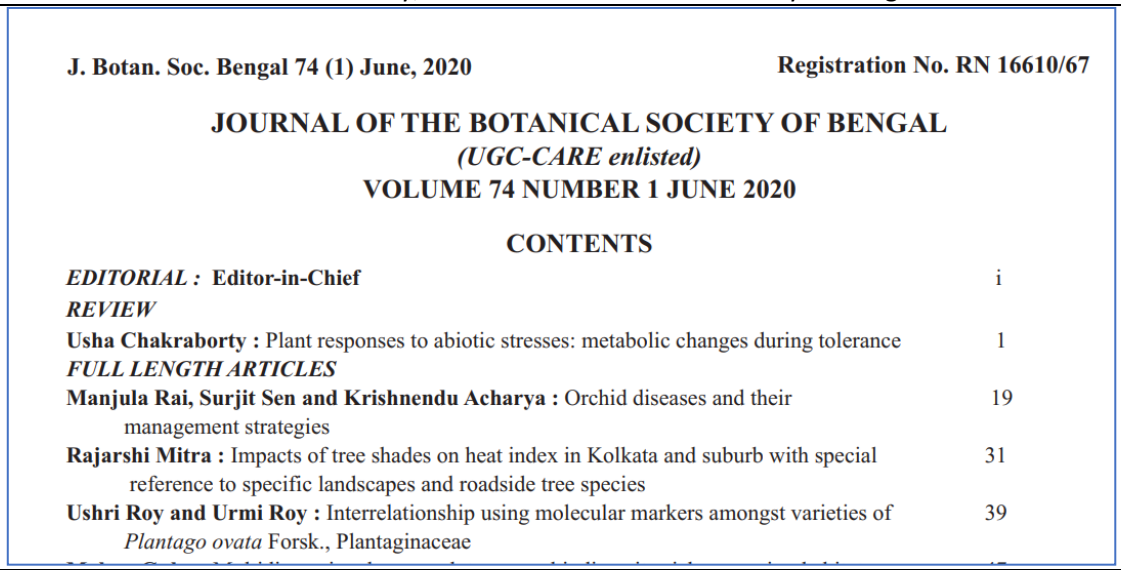
Author: Ushri Roy, Journal of the Botanical Society of Bengal



J. Botan. Soc. Bengal 74 (1) June, 2020 **Registration No. RN 16610/67**

JOURNAL OF THE BOTANICAL SOCIETY OF BENGAL
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VOLUME 74 NUMBER 1 JUNE 2020

CONTENTS

Author: Priyanka Dasgupta, Singapore Journal of Tropical Geography

Singapore Journal of Tropical Geography

Volume 41, Issue 2
May 2020
Pages 284-298

Original Article

Predicting dam-related downstream geomorphic response with widely available stream gauge data: A case study of the Godavari River Basin, India

Joy Sanyal, Priyanka Dasgupta, Shinjiro Kanae

First published: 19 May 2020 | https://doi.org/10.1111/sjtg.12323 | Citations: 1

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Abstract

Dam-related downstream adjustments of riverbeds are normally investigated by analysing the trend in sediment supply and high flow events during the pre- and post-dam periods. The required data for existing predictive models is not measured at river gauges, which limits the application of these tools. We derived the frequency of

Author: Neepa Banerjee, Journal of Climate Change

Impact of Variation in Thermal Working Environmental Condition on Cardiac Response Indices in Male Human Resources Engaged in Food Crop Cultivation Task

Cite

Article type: Research Article

Authors: Chatterjee, Ayan[a; b; *] | Banerjee, Neepa[a] | Chatterjee, Sandipan[a] | Mukherjee, Shankarashis[a; c; *]

Affiliations: [a] HPAFU, Department of Physiology, University of Calcutta, Kolkata – 700 009, India | [b] Faculty of Allied Health Services, ICFAI University, Tripura | [c] Public Health Analytics Unit, Department of Food and Nutrition, West Bengal State University, Kolkata – 700 126, India

Correspondence: [*] Corresponding Author. phauhpafu@gmail.com

Abstract: Climate change poses a serious threat worldwide including increase in temperature particularly in tropical countries and our country India is no exception to it. It has been also reported that the work performance of the human resources is also affected particularly those who were exposed to outdoor working environment. In this backdrop, the present study has been undertaken to assess the physiological strain in male food crop cultivators (age range 24-36 years) occupationally engaged in reaping tasks during food crop cultivation. Physical and physiological parameters are also recorded. Indicators of thermal environmental condition i.e. dry bulb temperature, and wet bulb temperature are also recorded during the working time. Results of the present study indicated unfavourable working environmental condition making the task more arduous for the human resources engaged in reaping task during 'Boro' type of paddy cultivation time as indicated from the indices of physiological strain.

Keywords: Environment modeling, Physiological cost of work, Climate change, Hooghly

DOI: 10.3233/JCC200007

Journal: Journal of Climate Change, vol. 6, no. 1, pp. 59-66, 2020

Received 10 October 2019 | 20 January 2020 | **Accepted** 20 January 2020 | **Published:** 24 February 2020

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Author: Neepa Banerjee, The Holistic Approach to Environment

Volume 10/Issue 4/Chatterjee et al

December 19, 2020 by Anita

Original scientific paper

https://doi.org/10.33765/thate.10.4.2

Published in: Holistic Approach Environ. 10(2020) 4, pp. 100 – 108

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Assessment of Physiologic Search

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ASSESSMENT OF PHYSIOLOGICAL STRAIN IN MALE FOOD CROP CULTIVATORS ENGAGED IN MANUAL THRESHING TASK IN A SOUTHERN DISTRICT OF WEST BENGAL

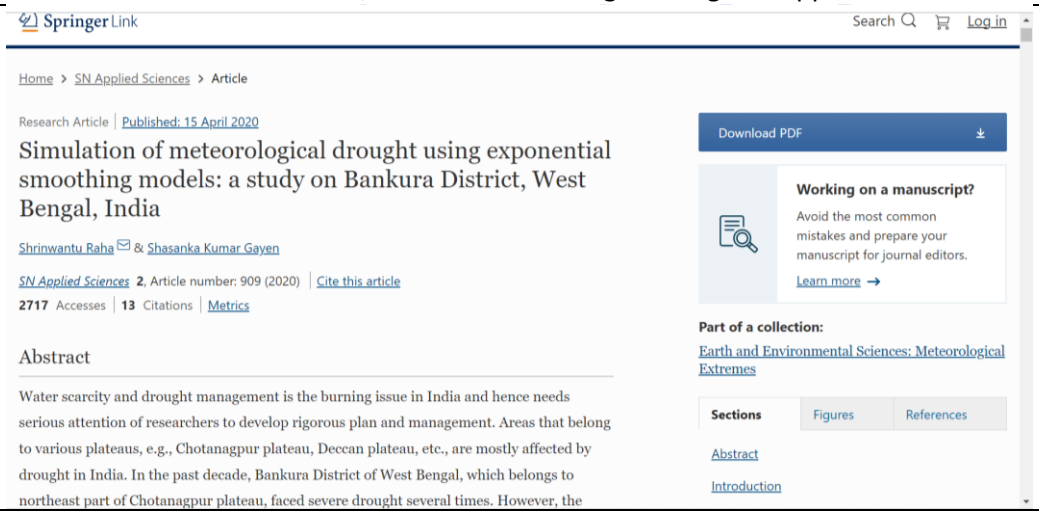
Ayan Chatterjee*, **, Sandipan Chatterjee*, Neepa Banerjee*, Shankarashis Mukherjee*, ***

* University of Calcutta, Human Performance Analytics and Facilitation Unit, Department of Physiology, Kolkata, India

** ICFAI University, Faculty of Allied Health Sciences, Kamalghat, Tripura, India

*** West Bengal State University, Public Health Analytics Unit, Department of Food and Nutrition, Kolkata, India

Author: Shrinwantu Raha, ARPN Journal of Engineer ing and Applied Sciences



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Research Article | Published: 15 April 2020

Simulation of meteorological drought using exponential smoothing models: a study on Bankura District, West Bengal, India

Shrinwantu Raha & Shasanka Kumar Gayen

SN Applied Sciences 2, Article number: 909 (2020) | Cite this article

2717 Accesses | 13 Citations | Metrics

Abstract

Water scarcity and drought management is the burning issue in India and hence needs serious attention of researchers to develop rigorous plan and management. Areas that belong to various plateaus, e.g., Chotanagpur plateau, Deccan plateau, etc., are mostly affected by drought in India. In the past decade, Bankura District of West Bengal, which belongs to northeast part of Chotanagpur plateau, faced severe drought several times. However, the

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Abstract

Introduction

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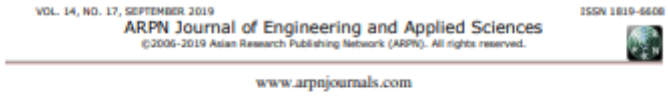

VOL. 14, NO. 17, SEPTEMBER 2019 ISSN 1819-6608

ARPN Journal of Engineering and Applied Sciences

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RAINFALL AND METEOROLOGICAL DROUGHT SIMULATION USING EXPONENTIAL SMOOTHING AND WINEXPO MODELS: A STUDY ON PURULIA DISTRICT, WEST BENGAL, INDIA

Shrinwantu Raha and Shasanka Kumar Gayen

Coochbehar Panchanan Barma University, Coochbehar, West Bengal, Pin, India

E-Mail: shrinwanturaha1@gmail.com

ABSTRACT

Drought monitoring and prediction of a particular region is primarily meteorological. By far the main challenge to predict and analyze meteorological drought is a) Choice of appropriate method to interpret the drought events b) To identify the nature of meteorological drought c) to establish a perfect dimension to predict drought effectively. The primary objective of this study is to simulate rainfall and meteorological drought (SPI is taken as the indicator as it is one of the most accepted indicators of meteorological drought) up to 2035-36 by using the traditional exponential and Holt-Winter exponential smoothing after analyzing the trends of rainfall and SPI12 of Purulia District, West Bengal. Based on exponential smoothing and Winexpo model it becomes quite evitable that the drought severity will increase in the near future. Based on the performance evaluation Winexpo outperforms the other two models as it obtains minized RMSE, MSE, MAE and MPE. The study demonstrates a unique mwthodology which might be very useful in understanding the drought-proneness of the region.

Keywords: drought, SPI, winexpo indices, holt-winter model, exponential model.

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Location: Kolkata

Author: Neepa Banerjee, NeBIO

NeBIO I www.nebio.in I March 2020 I 11(1): 27-34

RESEARCH ARTICLE

Assessment of cardiac response in paddy cultivators engaged in manual paddy transplanting task in Hooghly, West Bengal

Ayan Chatterjee[1*], Neepa Banerjee[1], Sandipan Chatterjee[1] and Shankarashis Mukherjee[1,2*]

[1]HPAFU, Department of Physiology, University of Calcutta, Kolkata 700 009, India

[2]Public Health Analytics Unit, Department of Food and Nutrition, West Bengal State University, Kolkata 700 126, India

*Email: phauhpafu@gmail.com

ABSTRACT

During the different tasks in agriculture, which is one of the major occupations in India and also in the focal state of West Bengal, providing livelihood to a large number of our countrymen, the human resources are exposed to multiple environmental and occupational stressors that can contribute to adverse personal health outcomes. Moreover, in the agricultural work, workers often spend long hours under direct sun, in intense heat. In view of climate change becoming a reality due to global warming, and reports of adverse health consequences including performances getting affected in different occupational settings in different parts of world, a study has been undertaken. Thermal environmental condition was assessed in terms of Wet Bulb Globe Temperature (WBGT) Index, Corrected Effective Temperature (CET), Discomfort Index (DI) and Physiological Strain Index (PSI). To assess the effect of workplace heat exposure, workload and posture being adopted in their likely impact on performance, cardiac strain indicators like net cardiac cost (NCC), estimated energy expenditure (EEE) (kcal.min), absolute cardiac cost (ACC) (beats.min) and human physical drudgery index (HPDI) were estimated in male paddy cultivators involved primarily in manual straight row paddy transplanting task in southern parts of West Bengal. The result of the study indicated that human resources are indeed subjected to strains, albeit to different degree, as adjudged by the indicators of cardiac strain like Net Cardiac Cost (NCC), Estimated Energy Expenditure (EEE) (kcal.min), Absolute Cardiac Cost (ACC) (beats.min) and Human Physical Drudgery Index (HPDI), and thermal environmental condition was also assessed and found to be not conducive in terms of Wet Bulb Globe Temperature (WBGT) Index, Corrected Effective Temperature (CET), Discomfort Index (DI) and Physiological Strain Index (PSI).

KEYWORDS: Agriculture, WBGT, DI, PSI, cardiovascular strain

Author: S. Chakraborty, Our Heritage

Our Heritage
UGC Care Listed Journal

ISSN: 0474-9030
Vol-68-Issue-8
January-2020

Title of the Paper

Interest rate formation in informal credit markets in West Bengal: what matters?

Author

DR. SANTANU CHAKRABORTY

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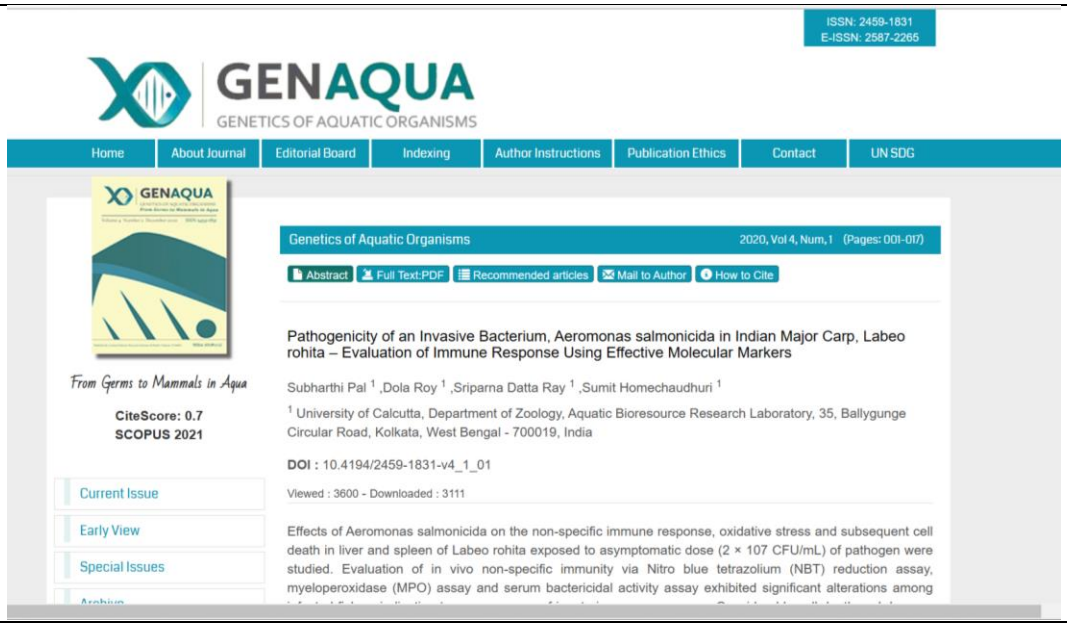
Assistant Professor
Department of Economics
Bhairab Ganguly College
Belghoria, Kolkata-700056

Postal Address

Sristi, 44, Main Road East
Newbarrackpore, Kolkata-700131

Email: chakbarsan@gmail.com

Author: Subharthi Pal, GENAQUA - Genetics of Aquatic Organisms



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Genetics of Aquatic Organisms 2020, Vol 4, Num, 1 (Pages: 001-017)

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Pathogenicity of an Invasive Bacterium, Aeromonas salmonicida in Indian Major Carp, Labeo rohita – Evaluation of Immune Response Using Effective Molecular Markers

Subharthi Pal [1] ,Dola Roy [1] ,Sriparna Datta Ray [1] ,Sumit Homechaudhuri [1]

[1] University of Calcutta, Department of Zoology, Aquatic Bioresource Research Laboratory, 35, Ballygunge Circular Road, Kolkata, West Bengal - 700019, India

DOI : 10.4194/2459-1831-v4_1_01

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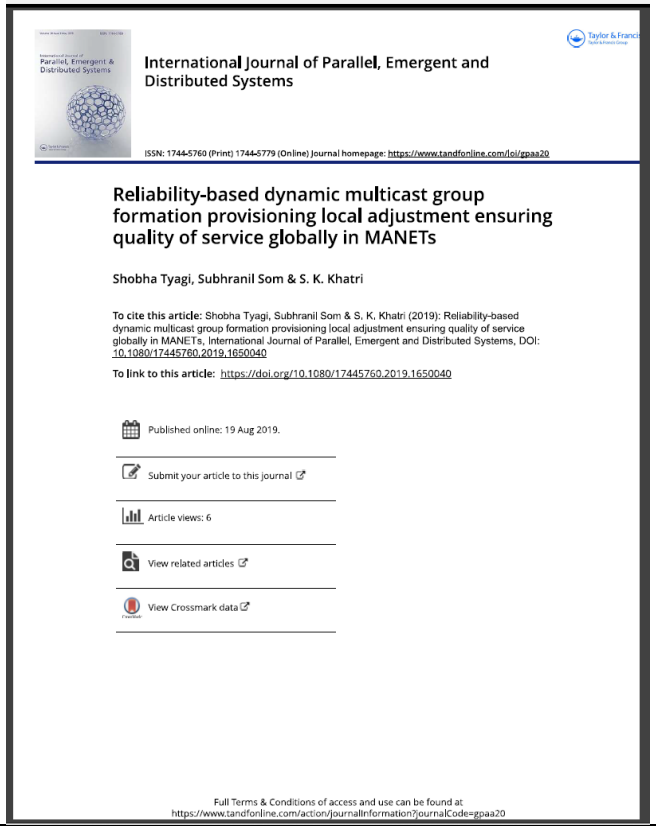
Effects of Aeromonas salmonicida on the non-specific immune response, oxidative stress and subsequent cell death in liver and spleen of Labeo rohita exposed to asymptomatic dose (2 × 107 CFU/mL) of pathogen were studied. Evaluation of in vivo non-specific immunity via Nitro blue tetrazolium (NBT) reduction assay, myeloperoxidase (MPO) assay and serum bactericidal activity assay exhibited significant alterations among

Author: Subhranil Som, International Journal of Parallel, Emergent and Distributed Systems



International Journal of Parallel, Emergent and Distributed Systems

ISSN: 1744-5760 (Print) 1744-5779 (Online) Journal homepage: https://www.tandfonline.com/loi/gpaa20

Reliability-based dynamic multicast group formation provisioning local adjustment ensuring quality of service globally in MANETs

Shobha Tyagi, Subhranil Som & S. K. Khatri

To cite this article: Shobha Tyagi, Subhranil Som & S. K. Khatri (2019): Reliability-based dynamic multicast group formation provisioning local adjustment ensuring quality of service globally in MANETs, International Journal of Parallel, Emergent and Distributed Systems, DOI: 10.1080/17445760.2019.1650040

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Author: Subhranil Som, International Journal of Advanced Science and Technology, Australia

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Location: Kolkata

Author: Subhranil Som, Patent

Filed patent titled with "**Tunnel Based Quantity Determining Garbage Reception System**".
Patent Application No.: 201811015425, 24/04/2018
Published: Official Journal of the Patent Office, The Patent Office Journal No. 43/2019 Dated 25/10/2019

Author: Subhranil Som, Patent

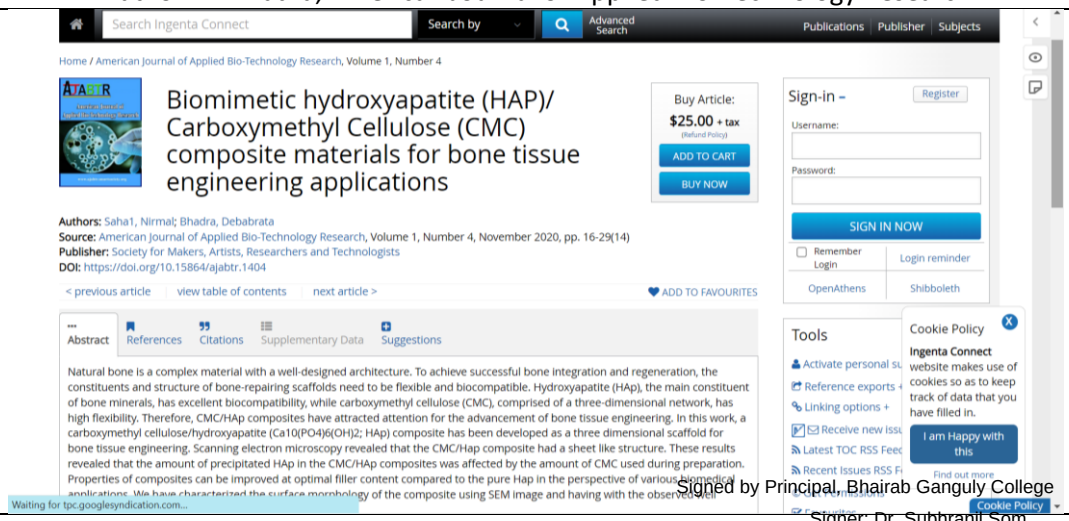
Filed patent titled with "**A System to Notify Human Body Water Requirement**".
Patent Application No.: 201811013633, 10/04/2018
Published: Official Journal of the Patent Office, The Patent Office Journal No. 41/2019 Dated 11/10/2019

Author: Subhranil Som, Patent

Filed patent titled with "**A System and Method for Detection of Wallet Using IoT Sensor**".
Patent Application No.: 201811013632, 10/04/2018
Published: Official Journal of the Patent Office, The Patent Office Journal No. 41/2019 Dated 11/10/2019

2020-21

Author: D. Bhadra, American Journal of Applied Bio-Technology Research



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Author: ROZY LASKER, Journal of Modern Management & Entrepreneurship (JMME)

Title: THE TRUE INTENTION BEYOND LEGAL COMPULSION OF INDIAN COMPANIES TOWARDS CSR: A QUANTITATIVE STUDY IN THE LIGHT OF COMPANIES ACT, 2013

Page 216-223

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Authors: Rozy Lasker & Dr. Amit Majumder

For Abstract: Click Here

Corporate Social Responsibility(CSR) is a mechanism which enfold the responsibility of company's operation and result in a assertive impingement on shareholders and the society at large.The United States Sentencing Commission Guidelines plays a significant role in CSR activities to pump up the social commitments of the business organizations.In UK ,as per the Companies Act, 2006, CSR becomes a elemental part of Corporate Governance. CSR got an intensive consideration in the European Countries since the inception of the European Union.In India the arena of CSR activities have changed intensively from 1st April,2014.According to the Section 135(5) Companies Act,2013, the companies falling under Section 135(1) have to spend 2% of their average net profit of three immediately preceding financial years in CSR activities. Most of the Indian companies end up only with this legal mandate.Though few of them showed their bona fide philanthropic nature.On this context, the objective of the study is to explore the true intention, beyond legal compulsion, of the Indian companies regarding CSR activities and evaluation of actual CSR spending after the enforcement of Companies Act,2013 on a quantitative terrain.

***KEYWORDS**: Corporate Social Responsibility(CSR), Compulsion, Commitment.*

Author: Mintu Halder, College Libraries

A Study on the Newspaper Reading Habits of Post Graduate Students in West Bengal State University

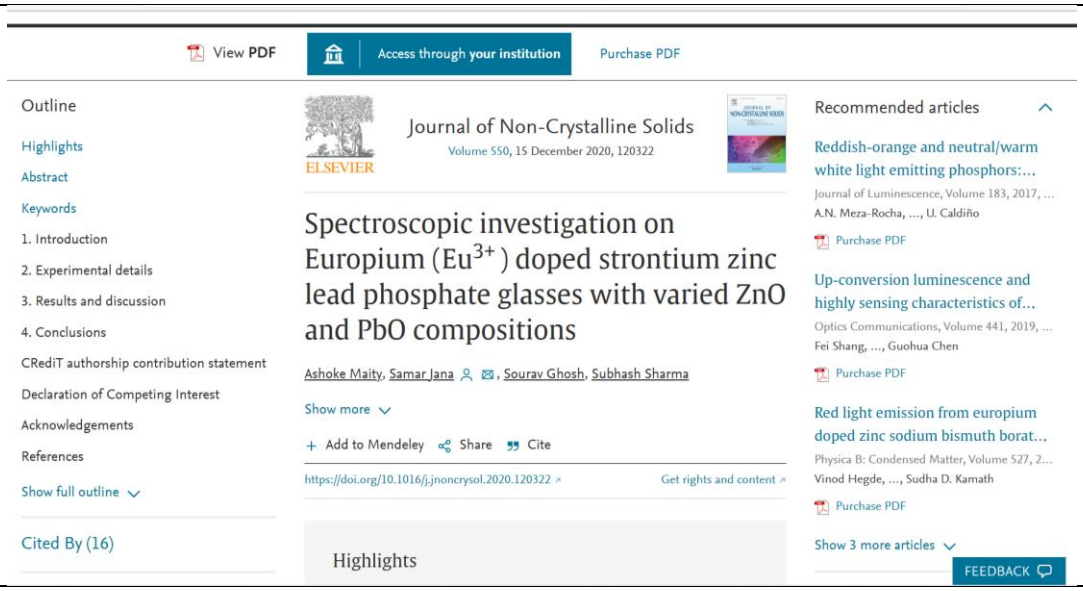
Mintu Halder
Librarian, Bhairab Ganguly College
Belgharia, Kolkata-700056

Abstract :

Newspaper is the primary source of information. Through it not only one does get information about the world in which one lives but also about all the events happening or imminent to take place on this planet. The present study aims at investigating the nature of newspaper reading habits and specific reading interest of Post Graduate students of West Bengal State University. This particular study attempts to explore purpose of reading, language preferences and time spent on reading newspaper daily by the students. The study also tries to find out the place where the students accustomed to read their required newspaper and language version of that particular newspaper. The paper finds out some of the barriers of newspaper reading among the students and finally concludes with some suggestions how they overcome from these barriers.

Author: Suparna Guha, Journal of Membrane Science

Author: Sourav Ghosh, Electronics



Author: Dhananjoy Halder, Journal of Calcutta Mathematics Society

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Location: Kolkata

Journal of the Calcutta Mathematical Society, **16**, (1) 1–8 (2020)

SOME REMARKS ON POROUS SET IN TERMS OF MIDPOINT SETS

DHANANJOY HALDER

(*Received 4 December 2019*)

Abstract. An attempt has been made in this paper is to show that every Lebesgue measurable linear set with positive measure has a porous subset whose midpoint set contains an interval. The category analogue of this result is also established.

2010 Mathematics Subject Classification : Primary 28405; Secondary 26415

Key Words and Phrases : Midpoint set; Property of Baire; Porous set; Difference set.

1. Introduction. First we recall the definition of Porous set (Miller and Miller, 1987–88) as bellow :

DEFINITION 1.1 (Miller and Miller, 1987–88) *Let A be a non-empty subset of real line $\mathbb{R}$ and $x \in A$. A is said to be porous at x, if there exists a constant c, $0 < c \leq 1$ and a sequence of intervals $\{I_n\}$, each containing x, whose length tends to zero as n tends to infinity, such that each interval I_n contains an interval J_n that is disjoint from A and $\frac{\lambda(J_n)}{\lambda(I_n)} \geq c$, where $\lambda(A)$ denotes the Lebesgue measure of A. The set A is called porous set if it is porous at each of its points.*

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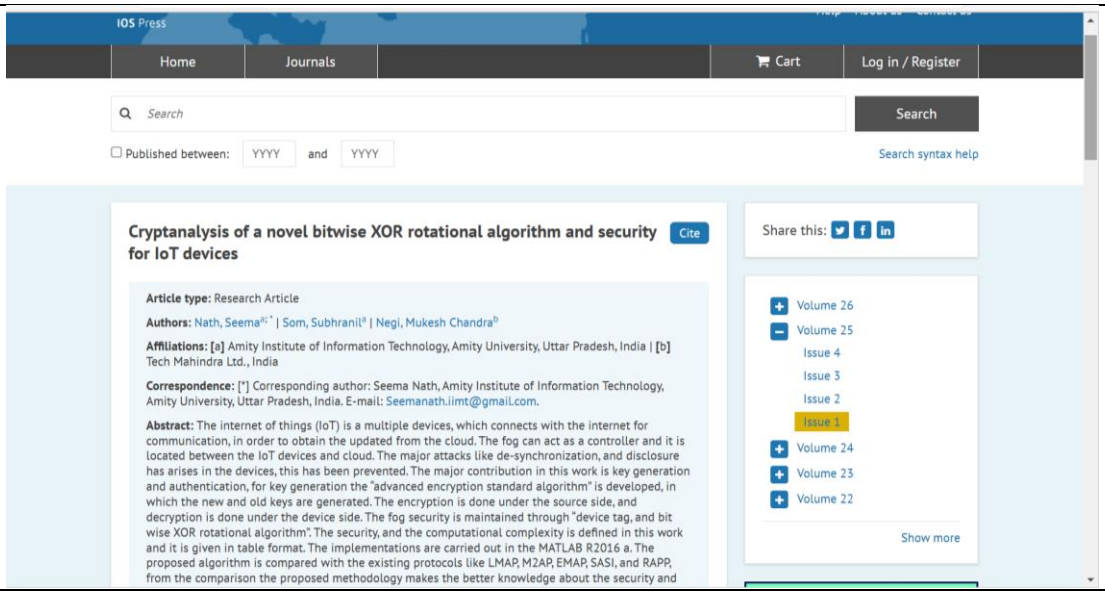

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Student Performance Measurement on Psychometric Parameters

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ABSTRACT

Educational data mining provides various advantages to the education systems in many ways. It enhances the teaching process, the learning process, the scholastic performance of students, career selection, employability, and more. The differences in attitude of students' behavior lead to difference in their academic performance. The article covers the non-intellectual parameters of students to enhance their academic performance. The study tests the relationship between psychometric constructs of students and their academic correlate. The models for enhancing intellectual performance which involves various non-intellectual parameters are analyzed using structural equation modeling. It is observed that the values of the models were retrieved near to fit values. The results entail that the models will be beneficial for students in improving their academic performance by revising their psychological parameters.

KEYWORDS

Academic Performance, Educational Data Mining, Multivariate Analysis, Psychometric Measures, Structured Equation Modeling, Student

INTRODUCTION

The differences in students' behavior impact their intellectual performance. Students differ in their learning styles like kinesthetic learners referring to learning by immersing in projects, aural learners, analytical learners and global learners adopting stimulations. Evidences have shown that non-intellectual parameters are highly associated with academic performance of students. The relationship between intelligence, personality, and interests; have been depicted by (Ackerman & Heggestad, 1997), also the impact of personality five factor model on intellectual performance is discussed by (Poropat, 2009). Factors involving self-regulatory learning strategies, motivation and style of learning also impact academic performance of students (Chamorro-Premuzic & Furnham, 2008). (Hamsa, Indiradevi & Kizhakkethottam, 2016) worked on scholastic parameters of undergraduate and graduate students like admission time, submission date of assignment, daily attendance, conduction

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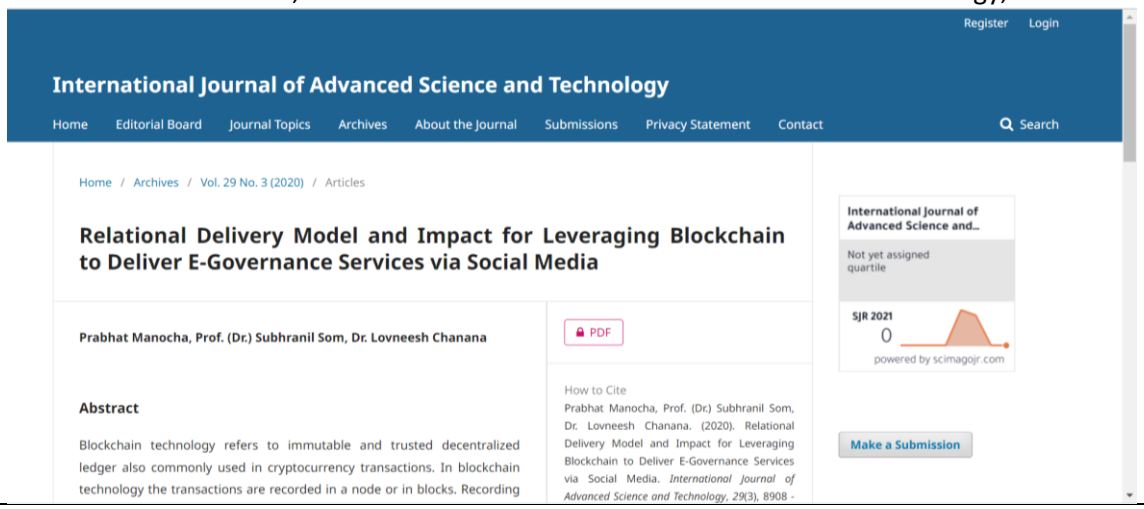

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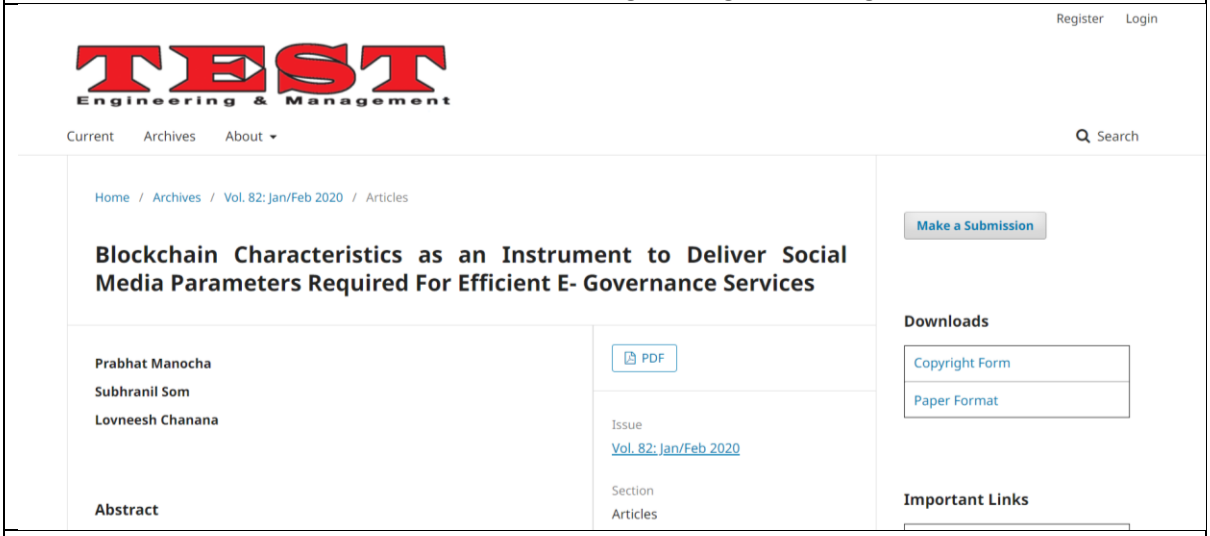

Author: USHRI ROY, Research Journal of Pharmacy and Technology

AFLP analysis of Genetic diversity and Phylogenetic relationships of *Vigna radiata* (L) Wilczek

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ABSTRACT:

Among the important pulse-yielding plants *Vigna radiata* is important. In the Indian subcontinent, it is an essential source of dietary protein particularly in the vegetarian population. It contains abundant nutrients with biologic activities. Soaked seeds are eaten as a good source of protein and mature seeds are cooked or can be sprouted for human consumption. Mung beans and its sprouts contain chemical constituents like flavonoids, phenolic acids, organ acids, amino acids, carbohydrates, and lipids. It is related to different biological activities like antioxidant, antimicrobial, antitumor, anti-inflammatory, anti-diabetic, and antihypertensive effects, etc. The seeds are a traditional sour of cures for paralysis, rheumatism, coughs, fevers, and liver ailments. As a green manure or cover crop, the plant can be grown, enriching the soil with the nitrogen formed on its roots. The powerful Amplified Fragment Leng Polymorphism (AFLP) is a molecular marker used for a variety of applications like assessing genetic diversity within species or among closely related species, inferring population-level phylogenies, generating genetic maps, a determining the relatedness among cultivars. AFLP has become extremely beneficial in the study of taxa including bacteria, fungi, and plants, where much is still unknown about the genomic makeup of various organisms. A study w made to assess the genetic diversity and phylogenetic relationships of a set of five varieties of *Vigna radiata* (L) Wilczek using the AFLP technique. Five different varieties of *Vigna radiata* viz. B1, TARM 2, PDM 84, TM 99, and T 98 were subjected to AFLP analysis. A total of 471 fragments were scored across all the 12 AFLP primer sets used and the results were used to plot a dendrogram. It was observed that these five varieties formed three distinct grou among which the aromatic B1 variety formed a distinct group.

KEYWORDS: Mung bean, *Vigna radiata*, AFLP, genetic diversity, genetic relationships, phylogeny, medicinal plant.

INTRODUCTION:

Ever since ancient times, people looked for drugs in nature. Plants have been a valuable source of natural products, for maintaining human health, with natural therapies. The use of phytochemicals for pharmaceutical purposes h gradually increased in many countries[1,2,3]. Mung beans (*Vigna radiata*) are green beans belonging to the legume (Fabaceae) family. It has been cultivated in India since ancient times. Mung beans are eaten in salads, soups, and vegetarian diets.

Author: USHRI ROY, Research and Reviews: Journal of Agriculture and Allied Sciences

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AFLP: An Efficient Molecular Fingerprinting Technique (A review work)

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Research Article

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ABSTRACT

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Comparative study of different exponential smoothing models in simulation of meteorological drought : A study on Purulia district, West Bengal, India

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Abstract

Drought is a burning issue in India and hence needs serious attention of researchers to develop rigorous plan and management. Areas that belong to various plateaus, e.g., Chottanagpur plateau, Deccan plateau, etc., are mostly affected by drought in India. In the past decade, Purulia District of West Bengal, which belongs to northeast part of Chottanagpur plateau, faced severe drought several times. But the assessment of drought in this area was far from a decesive proclamation till date. In this research, an attempt was made to compare the Holt-Winter additive and Holt-Winter multiplicative model in simulation (at 1 month lead time) of meteorological drought (using Standardized Precipitation Index (SPI) of Purulia District, West Bengal, India. The additive model showed better performance than the multiplicative model with minimized Root Mean Squared Error (RMSE) and higher correlation coefficient value (R^2). The spatial assessment drought

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https://sites.google.com/site/praachiprajnaa/sastramanjusa

धातोः स्वरूपविवरणम् - एका समीक्षा

- सोमा प्रामाणिकः

शोधसारः –

तिङन्तपदस्य या प्रकृतिः सा एव धातुपदेनाभिधीयते। धातुः क्रियायाः वाचकः। क्रियासम्बन्धे शौनकादयः प्राचीनाः ऋषय अवदन्-

क्रियावाचकमाख्यातं लिङ्गतो न विशिष्यते ।
त्रीनत्र पुरुषान् विद्यात् कालतस्तु विशिष्यते ।।

धातुः द्विविधः सकर्मकः अकर्मकश्च । एतयोर्मध्ये फलविशिष्टव्यापारबोधकः धातुः सकर्मकः। फलेन अविशेषितः केवलव्यापारबोधको धातुरेव अकर्मकः धातोः फलावच्छिन्नव्यापारबोधकत्वेनैव सकर्मकत्वम्, तदबोधकत्वे चाकर्मकत्वम्, इति वैयाकरणसम्प्रदाये उक्तम्। अत एव दृश्यते यत् व्यापारबोधकत्वविषये समानार्थकत्वेऽपि फलावच्छिन्नव्यापारस्य केवलव्यापारस्य चेति उभयस्य भेदवशात् धातवः द्विविधाः भवितुमर्हन्ति। सकर्मकाः अकर्मकाश्च।भट्टोजिदीक्षितस्यापि उक्तिरस्ति-

फलव्यापारयोरेकनिष्ठतायामकर्मकः ।
धातुस्तयोर्धर्मिभेदे सकर्मक उदाहृतः ।।

यस्याः क्रियायाः कर्म विद्यते सा सकर्मिका, यस्याः च क्रियायाः कर्म न विद्यते सा अकर्मिका इत्युच्यते। प्रत्येकं क्रियाया एव एकं फलं व्यापारश्च विद्यते। येन उद्देश्येन क्रियायाः प्रवृत्तिर्भवति तत् फलमित्युच्यते। यच्च तस्य फलस्य जनकः असौ व्यापार इत्युच्यते। यस्मिन् स्थले फलं व्यापारश्च कर्तरि एव निबद्धः तिष्ठति सा क्रिया अकर्मिका इत्युच्यते। यथा-असौ हसति। अस्मिन् स्थले हसनक्रिया अकर्मिका। यतः तस्याः क्रियायाः फलं व्यापारश्च कर्तरि एव विद्यमानम्। यस्मिन् स्थले कर्तृभिन्ने अन्यस्मिन् कस्मिंश्चित् पदार्थे फलं तिष्ठति, तत्र क्रियायाः सकर्मकत्वं भवेत्। यथा- देवदत्तः ओदनं पचति। अत्र अधिश्रयणात् आरभ्य स्थाल्यपकर्षणं यावत् पाकक्रियायाः व्यापारो विस्तृतो विद्यते। पदार्थस्य विक्लित्तिरूपिणी शिथिलता तस्य फलम्। इयं शिथिलता विक्लित्तिर्वा कर्तृभिन्ने अन्यस्मिन् पदार्थे ओदनरूपे विद्यते इति पाकक्रिया सकर्मिका। अत एव धातवः त्रिविधाः अकर्मकाः, सकर्मकाः, द्विकर्मकाश्च। अस्माकं तु मतेन धातवस्तु चतुर्विधाः भवन्ति।

बोपदेवस्य मतेन उक्तानां दश लकाराणां मध्ये प्रत्येकस्मिन् एव अष्टादश(18) विभक्तयो भवन्ति। पाणिनिस्तु तिप्-तस्-झि-सिप्-थस्-थ-मिब्-वस्-मस् इत्यादि अष्टादशविभक्ति-निर्देश-पूर्वकं तेषां स्थले क्रमशः अशीत्यधिकशतं (180) विभक्तीनाम्

Author: Soma Pramanick, Bohal Shodh Manjusha

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काव्यस्य भेद-निरूपणम् – एका समीक्षा

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विश्वस्य प्राचीनतमा हृद्या, निरवद्या, सकलैः अपेक्षितैः संस्कारैः सम्पन्ना साहित्य–काव्यकोष–व्याकरणादि सर्वाङ्गपूर्णा समन्विता अनादिकालतः काले काले परमात्मनावतीर्य संरक्षिता महद्भिर्गौरवैर्मण्डितास्ति संस्कृतभाषा। अस्यामेव भाषायां वेदाः शिक्षादिवेदाङ्गानि, पुराणानि रामायण–महाभारतादिमहाकाव्यानि सर्वाणि रचितानि सन्ति। तत्र संस्कृतकाव्यसाहित्यस्य अनेके भेदाः कृताः आचार्यैः। तेषु श्रव्यकाव्य दृश्यकाव्यञ्च। उत्तमं मध्यमम् अवरञ्चेति। श्रव्यकाव्य पठनीयं श्रवणीयं वा भवति। परञ्च दृश्यकाव्यं पठनीयत्वेन वा श्रवणीयत्वेन सह दर्शनीयमपि भवति। दृश्यकाव्यस्य नाट्यं रूपकं च संज्ञा। श्रव्यकाव्याद् नाट्यकाव्यं रमणीयं विद्यते। भारतीयनाट्योत्पतिविषये नास्ति मतसाम्यम्। भरतमुनिप्रणीते आदिग्रन्थे नाट्यशास्त्रे नाट्योत्पत्तिसम्बन्धी भारतीयपरम्परा परीक्षिता। काव्यपाठतः पूर्वं काव्यस्य किमपि उपयोगित्वम् अस्ति न वेति विचारणीयम्। प्रयोजनमनुद्दिश्य न मन्दोऽपि प्रवर्तते। अर्थात् प्रयोजनं विना किमपि कर्तुं न प्रवर्तते मन्दजनोऽपि बुद्धिमतां का कथा। तत्र प्राचीनेषु अलंकारशास्त्रेषु काव्यं तथा साहित्यमिति पदद्वयं समान–पर्यायम् आरोहति। काव्यप्रकाशः तथा साहित्यदर्पणश्च समजातीयौ ग्रन्थाविति। कवेर्वा‌ऽयं निर्मितेरेव काव्यम्। कवयति इति कविः, तस्य कर्म काव्यम् इति विग्रहः। कौति शब्दायते विमृशति रसगवान् इति कविः तस्य कर्म काव्यम् इति मट्टगोपालः। लोकोत्तरवर्णनानिपुणकविकर्म काव्यम् इति काव्यप्रकाशकारः। भामहोऽपि–

प्रज्ञा नवनवोन्मेषशालिनी प्रतिभा मता।
तदनुप्राणनाज्जीवेद्वर्णनानिपुणः कविः।।[1]

कवेः कर्म स्मृतं काव्यम् इति। तदेतत्काव्यशब्दव्युत्पत्तिकथनम्। चारुताशलिशब्दार्थयुगलं काव्यमिति रूढोऽर्थः। कवेः सुनिपुणं कर्मैति कृत्वा शब्दमयस्य शिल्पस्य काव्यमिति नाम सम्पन्नम्। काव्यस्य वर्णनीयं वस्तु यथा तथा वा भवतु, किन्तु सर्वथा इदं पाठकचित्तानां चमत्कृति–विधायकमित्यत्र नास्ति लेशतोऽपि संशयावसरः। तत्र काव्यस्य उपादेयत्वे प्राच्यानां पाश्चात्यानां च विदुषां महती विप्रतिपत्तिः अस्ति। तथाहि केचन प्राच्याः पण्डिताः वदन्ति– यद्यपि असौ काव्यनाटकं शृणोति तथापि निरर्थकमेव तच्छ्रवणं तेन सुकृतमार्गज्ञानाभावात्। अतःरात्सु वेदादिशास्त्रेषु पुरुषार्थानु शासकेषु कथं नाम काव्यस्य विरचनं पठनं च सम्भवेदिति। तज्जनवता मम्मटभट्टेन काव्यप्रकाशे समीचीनया दिशा अस्य मतस्य निराकरणं विहितम्। तन्मते कविसृष्टिः इयं ब्रह्मणः सृष्टेर्विलक्षणा वर्तते। कविः न केवलं करोति वस्तुभूतस्य जगतः अनुकरणमात्रम्। नियति–कृतनियमरहिता इयं कविसृष्टिः दैवस्य शक्तिः प्रतिपदं खर्वति। कविः स्वकीयेन एव प्रतिभाबलेन वस्तुराशिं शब्दाकारेण परिणमस्य विधातुं सृष्टस्य जगतो बहिर्विचित्रं नवं जगन्निर्माति। परन्तु काव्यजगद् अलौकिकमनवधिकं च। इदं तत्त्वतः अनिर्वचनीयम्। तथा चोक्तम् आनन्दवर्धनाचार्येण– अपारे काव्यसंसारे कविरेकः प्रजापतिः। यथास्मै रोचते विश्वं तथेदं परिवर्तते। अपि च कविवाङ् निर्मितिः हलादैकमयी नव–रसरुचिरा च। ब्रह्मणः सृष्टौ सुखं दुखं च अस्ति, सत्व–रजस्तमसां विलासोऽपि वर्तते, किन्तु कविसृष्टिः इयं परमानन्दे एव सदा पर्यवस्यति। प्रथितयशसा पाश्चात्यकविना शेलि–महोदयेन उक्तम्– काव्यं हि नाम तत्त्वतः कश्चन दैवो व्यापारः। काव्यमिदं परमानन्द–प्राप्तिहेतुकम् इति कृत्वा सज्जनाः वदन्ति– संसारविषवृक्षस्य द्वे एव रसवत् फले। काव्यामृत–रसास्वादः सङ्गमः सुजनैः सह। इयं पुनः कविसृष्टिः अनन्यपरतन्त्रा। अतः किमपि बाह्यम् उपादानं

Signed by Principal, Bhairab Ganguly College

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Journey towards the Lucid Darkness: A Postcolonial Study of the Myth of the Lord of the Jungle

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Abstract:

A postcolonial study will reveal how the Phantom comic books have represented the early 20th century Eurocentric colonial mindset of the white colonizers. The self-proclaimed benign white ruler with a mission to protect and control the ways of the Third World countries has persisted even in the neocolonial era of the second half of the 20th century. It is rather the character of the Black Panther, the black incarnation of the Phantom, that has laid bare the myth of the lord of the jungle inside out and transformed the whole story into a truly postcolonial account of the reawakening of the dark, marginalized world from its long-drawn stupor.

Keywords:

Enlightenment, myth, culture, colonialism, Eurocentric, ideological, postcolonial

I. Introduction:

The Black Panther, the Third World superhero of the Marvel universe, has been the reason behind the MCU getting its proper entry to the Oscars (the 2018 movie *Black Panther* received seven nominations at the 91st Academy Awards, and the first Academy Award win for an MCU film). Also, the inclusion of the black protagonist in a superhero stable largely represented by white members has attracted much critical discussion. In many ways, it is the reincarnation of the Phantom, the fictional, costumed, 'white' crime-fighter first appearing in comic strip in 1936. There are way too many similarities that would connect the Phantom and the Black Panther – both belong to the fictional countries of the dark continent of Africa (Bangalla and Wakanda respectively), both legacy-heroes belong to a long hereditary tradition of crime-fighting, both resort to the creation of a mythical, apparently immortal image of a vigilante who punishes the criminals and protects the innocent, both wear rings which are passed on from one generation to another, and the list seems to go on. But the single point of departure that might negate all the similarities is as follows – T'Challa, the person behind the mask of the Black Panther is a black person, and unlike the Phantom, his white counterpart, is an indigenous member of the African country, culture and tribes he tries to protect. This is not the self-proclaimed white man's burden of ruling a dark country; it is more like a project of re-establishing the aboriginal culture with all its essential features intact.

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II. Methodology:

The present article therefore studies the social and political power relationships that sustain colonialism and neocolonialism in the Phantom-narrative; it also considers the Black Panther narrative as representing the ideological response to the colonialist thoughts embedded in the Phantom stories.

III. Results and Discussion:

According to Frantz Fanon, the ideological essence of colonialism is the systematic denial of "all atrtributes of humanity" of the colonized people. Such dehumanization is achieved with physical and mental violence, by which the colonist means to inculcate a servile mentality upon the natives. (*Wretched* 250) The very idea of the Phantom acting as the lord-cum-guardian of the Third World provinces for about four centuries sounds like the comic book representation of the Western colonial history. The first Phantom is heard swearing the Oath of the Skull: "I swear to devote my life to the destruction of piracy, greed, cruelty, and injustice, in all their forms, and my sons and their sons shall follow me." (Wiki_Phantom) The focus on the word 'sons' has displeased people from gender studies, but that is not the concern of the present article. In a way, it is also a normalizing of the four-century long history of colonial expansion, ideological domination and the Euro-centric exaggeration of the image of the white ruler. As per the myth created by Lee Falk, the creator of the Phantom, the humanitarian white European who became the first Phantom was a part of Christopher Columbus' project of discovering new lands (according to the story line, he even married Marabella, the daughter of Columbus). (Wiki_Phantom)

Following a shipwreck, however, he ends up on the sea-shore of the dark world of Bangalla. He is saved by

THE BLIND MAN'S BLUFF: A NARRATOLOGICAL STUDY OF SRIRAM RAGHAVAN'S NOIR *ANDHADHUN*

Written by ***Manidip Chakraborty***

Assistant Professor, Department of English, Bhairab Ganguly College, West Bengal State University, Kolkata, India

ABSTRACT:

The 2018 Hindi movie *Andhadhun* might be said to have revolutionized the narrative techniques in Indian cinema by opening the scope for implementing narratological devices such as heteroglossia and dialogism. The unreliable narrator-cum-protagonist-cum-observer Akash has weaved an intricate web of fables with the help of his remarkable manipulative power. His assumed blindness, in this respect, has doubly empowered him to exert his control over situations. A master-narrator in the true sense, this 'Omniscient' blind man problematized the traditional binary notion of seeing and not-seeing. An artist in the true sense, his fabulation crosses path with other narratives, and ultimately succeeds to win over all of them. The present article will attempt to show how the fluid nature of the narrative method makes way for narratological discussion with all the applicable theoretical tools.

Keywords:

Narratology, heteroglossia, dialogism, eyesight, blindness, confusion

1. INTRODUCTION:

"Narratology is the study of narrative and narrative structure and the ways that these affect human perception". (Feluga) Accordingly, this study connects the perception of the 'actor' (i.e. one who acts) with that of the perceiver (i.e. the one who is at the receiver's end, and re-acts to the concerned

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act), thereby activating the circuit of any work of art which remains inert in its natural state, without the presence of any receiver (i.e. a reader/audience/viewer/observer). It can also be understood as the way a story can be manipulated by a character, or in the display of medium contributes to how a story is seen by the world. (Rimmon-Kenan) This notion of a character 'manipulating' a story, thereby determining the course of its appreciation by the world, is the very reason the present discussion on Narratology has been restricted to *Andhadhun*, a "2018 Indian black comedy crime thriller film" co-written and directed by Sriram Raghavan. This article will resort to Mikhail Bakhtin's theories of heteroglossia and dialogism to consider the complex co-weaving of multiple narratives within a larger frame narrative that distinguishes this movie from any other typical Hindi thriller made till date.

2. DISCUSSION AND FINDINGS:

The very experience of watching *Andhadhun* is one of discomfiture and uncertainty. One even

Filed patent titled with **"An Interactive Helmet Connected with an Ignition System of a Two-Wheeler"** **Patent Application No.**: 202011054158, 12/12/2020
Author: Subhranil Som, Patent
Filed patent titled with "**An automated Haircut Helmet**" **Patent Application No.:** 201911011662, 26/03/2019 **Published:** Official Journal of the Patent Office, The Patent Office Journal No. 40/2020 Dated 02/10/2020
Author: Subhranil Som, Patent
Filed patent titled with "**Traffic Management System Using Automated Breakers and Signals**" **Patent Application No.:** 201911002752, 23/01/2019 **Published:** Official Journal of the Patent Office, The Patent Office Journal No. 35/2020 Dated 28/08/2020
Author: Subhranil Som, Patent
Filed patent titled with "**Efficient Manhole Management System using IoT**" **Patent Application No.:** 201911001863, 16/01/2019 **Published:** Official Journal of the Patent Office, The Patent Office Journal No. 35/2020 Dated 28/08/2020
2021-22
Author: Manidip Chakraborty, International Journal of Creative Research Thoughts

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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

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THE BIO-FRIENDLY MASS-DESTROYER: RISE OF ECO-TERRORISM IN THE CONTEMPORARY SUPERHERO UNIVERSE

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Abstract:

Eco-terrorism has grown to become a powerful opponent of superheroes in contemporary comic books and movies. Seen as an inevitable alternative for the androcentric views traditionally promoted by such works, Eco-terrorism has successfully struck a chord with the reader/viewers. Ra's al Ghul and Thanos, two eco-terrorist super-villains, have managed to become iconic figures and garnered immense fan-favour despite their radical ideologies and extreme measures. Despite their ultimate defeat, they have successfully problematized the ideological and political scape of the superhero discourse.

Key Words:

Eco-terrorism, philosophy, villain, ideology, bio-centrism, anthropocentrism, radical, extreme, balance, civilization, inevitable.

I. Introduction:

The recent boom in superhero movies has made possible the gradual defacing of the demarcating line between the 'heroes' and the 'villains'. The questions related to moral and ethical duties of the superheroes have been further problematized as the so-called villains have often represented the moral standpoint, become a source of philosophical wisdom, and even provided comic relief. The popular culture has embraced such multifaceted 'villains' over the somewhat stereotypical heroes, and consequently the heroes too have been placed in a gray zone, making the viewers' moral choice even more difficult. One fine instance might be seen in the portrayal of some iconic villains in the last few decades in both comic books and movies which might be one of the reasons to have brought the very notion of eco-terrorism to the mainstream. Ra's al Ghul (from Batman comic books and the DC Universe) and Thanos (from the Avenger movies of the Marvel Universe) are two such eco-terrorists who have succeeded in garnering a considerable amount of sympathy, and even support, from the readers/viewers despite their radical, genocidal views.

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II. Methodology:

The current paper attempts to consider how the wise application of the theories related to Eco-terrorism ("an act of violence committed in support of ecological or environmental causes, against people or property") has enriched the ideological and philosophical dimension of the superhero comic books and movies; thus altering and considerably raising the critical consensus regarding such books/movies in the process. (Wiki_Eco-terrorism)

III. Results and Discussion:

Ra's al Ghul, a centuries-old worldwide eco-terrorist, is not only the arch-villain of the Batman, but also a father-figure to him. The Batman, a perfect representative of what Ra's al Ghul calls the 'misguided idealists' in the 2005 Christopher Nolan movie *Batman Begins*, resonates the typical mindset of the U.S. government that considers the eco-terrorists to be mere special interest extremists. What is beyond the understanding of Batman is the idea of Biocentrism, which is described as "a belief that human beings are just an ordinary member of the biological community" and that all living things should have rights and deserve protection under the law. (Wiki_Eco-terrorism) The government-endorsed policy might well be understood as Anthropocentrism; i.e. the belief that human beings are the most important entity in the universe. (Wiki_Eco-terrorism) The irony lies in the fact that the very idea of Batman revolves around the creation of terror, chaos and darkness, albeit for a noble cause; i.e. the further empowerment of law and order. The bat-suit that Bruce Wayne dons to terrify the criminals, aligns him with the wild, primal forces of nature. Yet, his fight is for cleansing the Gotham city of poverty and crime. Theoretically thus he is the guardian of the order of the civilized society.

In the complex visual-metaphorical treatment of Christopher Nolan, this ambiguity has been enhanced to a considerable degree. Thus in his first installment of the Batman trilogy, the viewers are presented with the almost enticing philosophy (aided by the brilliant oratory skill of Liam Neeson) of Ra's al Ghul, the trainer cum moral guru of Bruce Wayne;

Author: S. Dasgupta, International Journal of Research in Engineering and Science

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Temporal Change of Urban Heat Island Scenario in Sreerampur sub-division in West Bengal: a Geospatial Approach

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[2](Department of Geography, Bhairab Ganguly College, Belghoria, India)

Abstract
Urbanisation is one of the major indicators of development of the modern world. The whole world has been going under the process of urbanisation at a rapid rate and India is also not an exception in this case. Since last few decades, India has also witnessed a remarkable progress in the process of urban development. This continuous urban development has also accelerated the urban heat island event with the progress of time. An attempt has been made in this paper to analyse the temporal change in urban heat island phenomenon in Sreerampur sub-division owing to rapid urbanisation of the study area. The study has been done by adopting a Geospatial approach where Land Surface Temperature (LST) maps and Landuse and landcover maps of the study area has been prepared from Landsat satellite images. The study revealed that the LST always remained much higher than the average values for the years taken for study and this event clearly signifies the occurrence of urban heat island. Notable land use and land cover change for urban development has been considered to be responsible for the occurrence of urban heat island over the area.
Keywords: *Urbanisation, urban heat island, LST, Landuse and landcover change.*

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I. INTRODUCTION

Urbanisation is one of the major keys of development of the modern world. At present, the world is undergoing the process of urbanisation at a rapid rate. India is also not an exception. Census data of 1901 revealed that about 11.4% of population in India resided in urban areas in 1901 that has increased to become 31.16% in 2011 (Sen and Bhattacharjee, 2021). Continuous process of urbanisation has led to the construction of more and more buildings, cemented pavements and masonry structures to fulfil the needs of this continuously increasing urban population. Often times, urbanisation also takes place at the expense of the surrounding land covers where by it is noticed that vegetated areas are cleared off indiscriminately or waterbodies are filled up for the construction of residential, industrial and business complexes. Hence, it can be seen that concretization and urbanisation are the two sides of the same coin. Unplanned and unscientific urban expansion is having a significant impact upon the physical environment to a large extent (Roy and Basak, 2020). Urban Heat Island is one such event where it is seen that the urbanised areas experience more temperature than its surrounding rural areas because the concrete structures, tall buildings and cemented pavements trap in them a considerable amount of heat energy (Singh, 2005). With increase in urbanisation, the urban heat island phenomenon is also being triggered. Using modern technique of GIS and Remote Sensing, it has become possible to portray the temporal changes in the urban heat island event of any area. An attempt has been made in this paper to analyse the change in urban heat island scenario of Sreerampur sub-division in West Bengal for the years of 1999, 2009 and 2019.

II. MATERIALS AND METHODS

In order to accomplish the task, Landsat 5 TM and Landsat 7 ETM+ satellite images were downloaded from USGS Earth Explorer. Landuse and landcover maps and Land Surface Temperature (LST) maps were prepared from the satellite images using ERDAS Imagine 2014 and ArcGIS 10.3 software by following the specific algorithms (Adhikari and Roy, 2020) in order to understand the temporal change in the phenomenon. Graphs were prepared using MS Excel. Finally, all maps and graphs were analysed to arrive at the necessary results.
Details of satellite data collected for preparing the maps are given below in table 1:

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Transforming Academic Libraries for the Changing Environment

Mintu Halder
Librarian,
Bhairab Ganguly College

Abstract:

An academic library has been the 'heart of the educational institution' serving the academic community of its parent body. It offers the students curriculum support by providing a wide range of services. This article presents an evaluation of the role of IT utilities in the transformation of academic library services. The article also discusses examples of innovative technological developments for learning, data management and the impact of these on the academic library sector, including the need for library staff to develop new skills and roles.

Key Word: Academic libraries, Digitisation, Information Communication Technology, Social Networking.

Author: Mintu Halder, Library Progress (International)

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Original Article

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Library Services in E-Learning Environment: Its Different Application Area

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ABSTRACT

Electronic learning refers to any learning with the aid of information and communication technology (ICT) such as online learning, webinars, discussion forums, chats, computer-based learning, and educational materials on videos (Wang, 2004). Currently, peoples are directly or indirectly being dependent on the internet learning. In the corona virus pandemic peoples are actually had no option other than doing work or studied through internet. They also enjoy it because of the attractive features of online learning and working. Nowadays ICT is being used in everywhere, of course in education too. E-learning is internet based learning provide faster learning at low cost with high reliability. Development of ICT as well as new educational models require librarian to advance their scope to e-collection and e-services. Today users need to directly access required information on any web enabled devise at any time from any location. Libraries are also migrating towards the digitisation in order to support the e-learning. Only converting traditional library to digital library is not the solution at all in e-learning environment. Libraries must provide digital based services to their users to influence them toward the library. This paper highlights the possible area of library services that enables users to use library resources more enthusiastically in e-learning environment.

KEYWORDS: *e-Learning, Learning Environment, Web-based Education*

INTRODUCTION

We are living in a fast developing society with rapid social and technological changes. E-learning is one of the most promising and growing application in an information society. It helps learner to obtain education swiftly and economically. Growing access to internet based learning is directly proportional to dispersed of the learner around the globe. Abundantly growing information on the web leads to the creation of confusion among the learner about its authenticity and reliability. ICT development made libraries incapable to satisfy the growing needs of users with print resources alone. Libraries are forces to develop, organise and provide access to e- resources and provide web based services. The libraries are providing quality and academic usefulness of services and resources electronically to support the learner in this e-learning ecosystem. Widespread availability of information in various electronic media and self sufficiency of users have led to questioning the library. Although lots of information in the internet but the right information can be provided by the library only. Actually, E-learning environment have paved a new dimension for libraries to build or reinvent

Author: Ushri Roy, Journal of the Botanical Society of Bengal

Author: Shubhendu Dhara, Indian Journal of Advances in Chemical Science

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Location: Kolkata

Indian Journal of Advances in Chemical Science

Article

Annulation of Internal Alkyne toward Synthesis of Selective *E*-Benzofulvene and Mechanistic Study using Density Function Theory Calculation

Shubhendu Dhara[1]*, Anuvab Das[2], Dhiraj Das[3], Rajesh Koner[1]

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ABSTRACT

An efficient approach has been devised for the synthesis of highly functionalized *E*-benzofulvenes. While annulating an internal alkyne with 4-(2-bromophenyl)but-3-en-2-one yielded up to 87% of E-benzofulvene derivatives. Double functionalization of C_{sp2}-H and *ortho*-C-Br bonds in an *α,β*-unsaturated arylketone in the presence of cheap catalyst $PdCl_2$ with alkyne triple bond afforded almost quantitative formation of highly substituted benzofulvene in N,N-dimethylformamide solvent and under reasonable reaction conditions. Detail mechanism of annulations of alkynes to give selective *E*-benzofulvenes has been studied by density function theory analysis using the Gaussian 09 program.

Key words: *E*-Benzofulvene, Annulation, Internal alkyne, Wittig reaction, *o*-bromostyrene, Density function theory.

1. INTRODUCTION

In the course of our ongoing research on developing new synthetic

Author: S Dasgupta, Geoenvironmental Disasters

Landslide Susceptibility Analysis: A Case Study of Nainital Municipal Area

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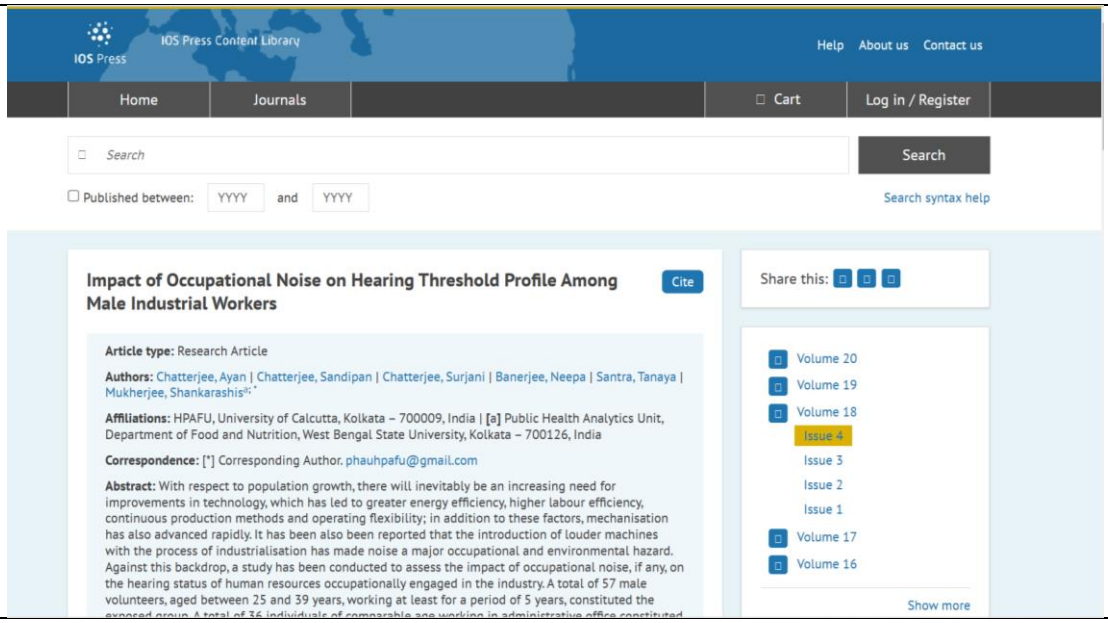
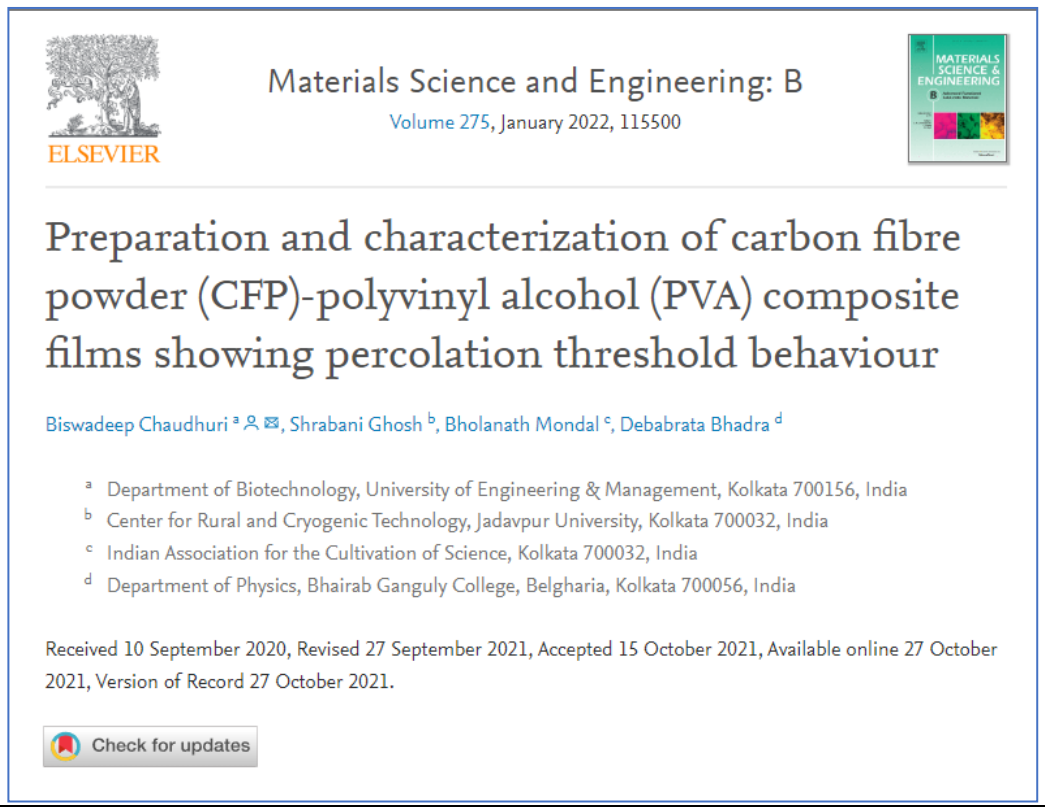
Research

Author: N. Banerjee, Asian Journal of Water, Environment and Pollution



Author: Debabrata Bhadra, Materials Science and Engineering: B



Author: Rituparna Ghosh, Toxicology Mechanisms and Methods

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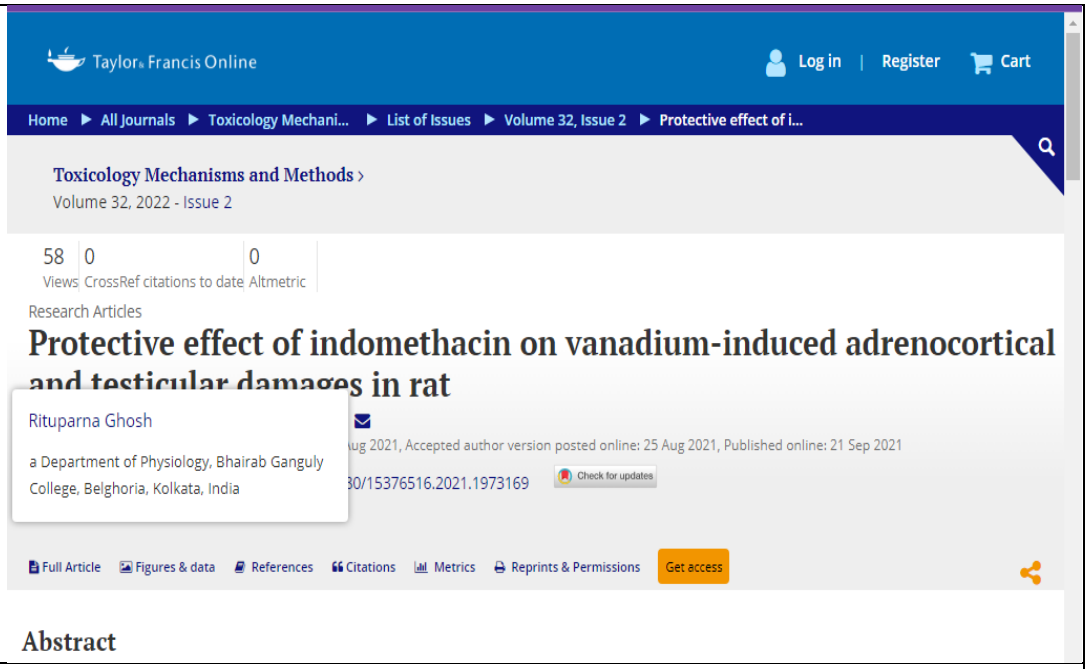

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Protective effect of indomethacin on vanadium-induced adrenocortical and testicular damages in rat

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Abstract

Author: Rupa Sanyal, Plant Gene

ELSEVIER

Plant Gene
Volume 27, September 2021, 100303

PLANT GENE

Unravelling the regulatory role of miRNAs in secondary metabolite production in medicinal crops

Shreya Chakraborty [a], Prasann Kumar [b], Rupa Sanyal [c], Abhijit Bhagwan Mane [d], Dorairaj Arvind Prasanth [e], Manoj Patil [f], Abhijit Dey [a]

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Author: Rupa Sanyal, Vegetos

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Short Communications | Published: 05 October 2021

Establishment of adventitious root culture from leaf explants of *Plumbago zeylanica*: an endangered medicinal plant

Kajal Katoch, Suphla Gupta, Romaan Nazir, Vijay Kumar, Rupa Sanyal, Abhijit Dey & Devendra Kumar Pandey

Vegetos **35**, 276–280 (2022) | Cite this article

Abstract

Plumbago zeylanica L. (Plumbaginaceae) is a very important medicinal plant containing plumbagin as the major secondary metabolite synthesized and stored in its roots. Over-exploitation to meet the growing demand on global level has put it under the endangered plant category. The objective of the present study is to provide the desired plant material for industrial use. Adventitious root culture is considered as an alternative source of plant material. In the present study, the leaf explants were inoculated on half-strength Murashige and Skoog (MS) medium supplemented with different plant growth regulators to obtain the

Author: Senjuti Banerjee, Journal of Mycopathological Research

J. Mycopathol. Res. ***59(2)*** *: 165-169, 2021;* (ISSN 0971-3719)

Antimicrobial and antioxidant properties of common mangrove plants of Sundarban, Patharpratima, West Bengal

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The aqueous, 95% ethanolic and 80% acetone extracts of leaves of *Herittiera fomes, Aegialitis rotundifolia, Avicennia alba, Avicennia marina, Avicennia officinales, Rhizophora mucronata, Ceriops decandra, Ceriops tagal, Bruguiera gymnorrhiza and Aegiceras corniculatum* were tested for their antimicrobial activities on *Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli* and *Klebsiella pneumonia*. The free radical scavenging activity or antioxidant effects of the leaf extracts were also checked. *Aegialitis rotundifolia, Rhizophora mucronata, Herittiera fomes, Aegiceras corniculatum, Avicennia alba, Avicennia officinales, Ceriops decandra* and *Bruguiera gymnorrhiza* showed antibacterial activity against *Bacillus subtilis* in different solvents. In growth of *Staphyllococcus, Aegialitis, Avicennia marina, Rhizophora mucronata* and *Aegiceras corniculatum* showed hindrance. In case of *E. coli, Aegialitis, Rhizophora* and *Aegiceras* were effectives. *Aegialitis, Herittiera, Avicennia* and *Rhizophora* showed resistance in growth of *Klebsiella*. They can be used to develop natural drugs in lieu of commonly used strong allopathic drugs.

Key words: Antimicrobial property, antioxidant property, flavonoid, mangrove leaves

Author: Rupa Sanyal, Industrial Crops and Products

ELSEVIER

Industrial Crops and Products
Volume 169, 1 October 2021, 113626

Statistical optimization of *in vitro* callus induction of wild and cultivated varieties of *Mucuna pruriens* L. (DC.) using response surface methodology and assessment of L-Dopa biosynthesis

Bhavana Tandon [a], Uttpal Anand [a, 1], Blessymole K. Alex [a], Prabhjot Kaur [b], Samapika Nandy [c], Mahipal S. Shekhawat [d], Rupa Sanyal [e], Devendra Kumar Pandey [b], Eapen P. Koshy [a] ✉, Abhijit Dey [c] ✉

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Author: Bidisha Biswas, Physics Education

Physics Education July - September 2021

Evaluation of Planck's Constant using Light Emitting Diodes: A new apporoach using ExpEYES-17

Durjoy Roy[1] and Bidisha Biswas[2]

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Submitted on 06-03-2021

Author: Krishanu Ghosh, Wisdom Speaks

Wisdom Speaks, 6(1), October 2021, Kolkata RNI WBMUL/2016/72327; ISSN 2456-5121

Jharkhand Movement and Muslim League Politics in 1940s

Krishanu Ghosh

Jharkhand came into existence as a new state on 15th, November, 2000. Jharkhand movement has three phases- the first phase is the Jaipal Phase, second Phase-of 1960s and the third phase, which ultimately achieved success, began with the strategy of a united front with non-tribal population. In the first phase, the Adivasi Mahasabha came closer to the Muslim League, mainly after the Pakistan resolution was adopted by the Muslim League at Lahore in March, 1940. There was an unrecorded alliance between Adibasi Mahasaba leaders and the Muslim League leaders from 1941 to 1946.After the Bengal riots, the link between League and Adibasi Mahasaba decreased. Partition changed the whole situation, and the link between Muslim League and Adivasi Mahasabha also ended.

Key Words : Jharkhand, Adivasi Mahasabha, Pakistan resolution, Jaipal Singh, Raghib Ansari

Author: Ushri Roy, Research Journal of Pharmacy and Technology

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Author: Subhranil Som, International Journal of Applied Management Science

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Anti-social behaviour analysis using random forest and word to vector approach

Nidhi Chandra*, Sunil Kumar Khatri and Subhranil Som

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Abstract: Social Networking and micro-blogging applications provide active platforms for communications, sharing thoughts and ideas. Processing natural text coming from varied social platforms possess many technical challenges such as processing messages written in slang, informal short messages, classifying messages into different labels and category based on the meaning. Maximum natural text processing and interpretation systems use *n*-gram language models, which can be simple and powerful most of the time. Random forest ensemble-based classifier has the potential to generalise the unseen data as compared to *n*-gram language models. Anti-social messages are a significant problem in social media. In this paper we present an approach to classify the natural language text as anti-social text using Random Forest classifier. In this paper we are addressing the challenge to identify anti-social messages using this algorithm using vector ensemble technique to classify anti-social text in offline mode. Word to vector approach has been used for word embeddings to train the model. This paper combines word to vector approach with random forest classifier using a multilayer network.

Keywords: natural language processing; random forest; ensemble classifier; anti-social behaviour analysis; word to vector.

Reference to this paper should be made as follows: Chandra, N., Khatri, S.K. and Som, S. (2022) 'Anti-social behaviour analysis using random forest and word to vector approach', *Int. J. Applied Management Science*, Vol. 14, No. 1, pp.38–56.

Biographical notes: Nidhi Chandra is a faculty at Department of Computer Science & Engineering, ASET and a Research Scholar of Amity University, Uttar Pradesh, India. She obtained her Master's degree in Computer Science from Guru Gobind Singh Indraprastha University, Delhi. With over 14 years of academic experience and 2 years of industry experience, her research interest lies in natural language processing, semantic analysis and data mining.

Sunil Kumar Khatri is working as Director of Campus, Amity University Tashkent, Uzbekistan at Amity Education Group. He is a fellow of IETE, Sr. Life Member of CSI, IEEE, IASCSIT and Member of IAENG. He specialises in software reliability and testing, data mining and warehousing, network security, soft computing and pattern recognition. He has been conferred "IT Innovation & Excellence Award for Contribution in the field of IT and

Author: Pratima Biswas, Information Systems

Information Systems
Volume 105, March 2022, 101933

Ripple: An approach to locate *k* nearest neighbours for location-based services

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Recommended by Yannis Manolopoulos

Author: Sukla Kisku, Journal of the Department of English - Vol 15 [2022], Published by Registrar, Vidyasagar University

Caught between Art and Crisis: Identity in Mandelstam's "Art of Parting"

Sukla Kisku

Abstract

Osip Mandelstam (1891-1938) will always be one of the most eminent as well as controversial names of Russian literature till date. Being the advocate of Acmeist poetry, Mandelstam's poetry mostly emphasized his individual urges, and concerns rather than the politically infused voices. While his contemporary authors like T.S. Eliot and James Joyce were engaged in their contribution to modern literature, Mandelstam was struggling to determine his identity as an independent poet and political spokesperson for the ruling regime at that period. In fact, his struggle to define his identity was entirely streaming during his poetic career, from a wider perspective. The approach towards 'art of parting', not only restricted in the case of "Tristia" but also that of his own life, had left an unforgettable trace on his poetic career emphasized with mythological reverberation. His

Author: Makhleswar Rahaman, KANPUR PHILOSOPHERS

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ABUL HASHIM AND EMANCIPATION OF THE BENGAL MUSLIM WOMEN

SK. MAKHLESWAR RAHAMAN
Associate Professor of History
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& Guest Faculty
Department of Islamic History & Culture
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Abstract:

Abul Hashim, the most progressive-minded and erudite Muslim League leader of late-colonial Bengal, was a man of multifarious activities. He was an Islamic philosopher,[1] a lawyer, political leader-cum-activist, an editor, writer and above all a social reformer .[2] However ,he has remained relatively a less known figure in the history of South Asia.[3] No extensive research work has been undertaken on him. Whatever have been written so far about him, is mainly about his political activities , especially his role as

Author: Avijit Sarkar, open Chemistry

DE GRUYTER Open Chemistry 2022; 20: 505–516

Research Article

Mamta Tripathi, Ashish Kumar Asatkar, Stalin Antony, Mrinal Kanti Dash, Gourisankar Roymahapatra, Rama Pande, Avijit Sarkar*, Fahad M. Aldakheel, Abdulkarim S. Binshaya, Nahed S. Alharthi, Ahmed L. Alaofi, Mohammed S. Alqahtani, Rabbani Syed

Copper(II) complexes supported by modified azo-based ligands: Nucleic acid binding and molecular docking studies

https://doi.org/10.1515/chem-2022-0164
received February 28, 2022; accepted May 3, 2022

Abstract: Two new copper(II) complexes [CuL_1] (**1**) and [CuL_2] (**2**) derived from azo-based ligands 2-hydroxy-5-*p*-tolylazo-benzaldehyde (HL_1) and 1-(2-hydroxy-5-*p*-tolylazo-phenyl)-ethan-one (HL_2) were synthesized. These two ligands and their metal complexes were characterized by elemental analysis, nuclear magnetic resonance (^1H and ^{13}C), infrared, and UV/Vis spectroscopic techniques. Spectroscopy and other theoretical studies reveal the geometry of copper complexes, and their binding affinity towards nucleic acids are major groove binding.

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Keywords: azo, copper(II) complexes, DFT, ct-DNA, t-RNA, molecular docking

1 Introduction

Nucleic acids are fundamental biopolymers and the most significant genetic substances [1–3]. It can act as good binding ligands because nucleic acids have different binding modes for reversible or non-covalent interaction with transition metal complexes [4]. Hence, the design and synthesis of transition metal complexes is the subject of tremendous interest as it has strong binding efficiency to the nucleic acid and shows great screening for the development of new drugs [5]. Besides that, in the last few years, synthesis and physicochemical studies of transition metal complexes with azo-based (–N=N–) ligands have been given a lot of interest by chemists because of their versatile applications in different fields such as textile industries [6], analytical and catalytical activity, optical technology [7], and biofuel cell cathodes [8,9]. Azo dyes are also used in coloring agents for the food and cosmetic industries [10]. Bidentate-substituted azo-

Author: Mintu halder, College Libraries

Publication Trends in Library Herald and College Libraries: a bibliometric study during 2011-2020

Mintu Halder
Librarian, Bhairab Ganguly College, Belgharia, Kolkata

Abstract

The present bibliometric study is based on the publication characteristics and trend of two renowned Indian Library Information Science (LIS) journals viz. Library Herald (LH) and College Libraries (CL) during 2011 to 2020. The published 267 articles in LH and 166 articles published in CL during this study periods have been scanned to collect the bibliographical details considering the factors such as year wise growth, authorship, collaboration, popular authors, prolific institutions, geographical distribution, length and keywords. The study finds that the average authors per paper in LH were higher in comparison to the CL. The study also finds that in LH, total 350 authors contributed articles, of which maximum 289 authors shared 1 paper each followed by 39 authors having 2 papers each. It has been found that out of 12 states, the 212 authors from West Bengal contributed majority of 159 articles followed by Delhi with 85 articles and Maharashtra with 27 articles. The study provides an insight in the publication pattern of two official organs of two library associations in India. No extensive work has been done on this interesting topic earlier. The findings will be helpful for the LIS professionals as well as associations in identifying the publication trend of two potential journals that have long traditional history of scholarly publications in this field.

Keywords: Bibliometrics, Bibliometric study, College Libraries, Library Herald, Publication pattern

Author: Samit Majumder, Dalton Transactions

Issue 38, 2022 Previous Article Next Article

From the journal: Dalton Transactions

A metal complex based fluorescent chemodosimeter for selective detection of 2,4-dinitrophenol and picric acid in aqueous media†

Check for updates

Abhishek Pramanik,[a] Samit Majumder,[b] Hazel A. Sparkes[c] and Sasankasekhar Mohanta[a]

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Abstract

This work describes the syntheses, characterization, crystal structures, absorption and emission spectra and DFT calculations of three dizinc(II) compounds of the composition $[Zn^{II}_2L(\mu_{1,1}\ N_3)(N_3)_2]$ (**1**) $[Zn_2L'(2,4\text{-dinitrophenolate})_2]$ (**2**) and $[Zn_2L'(\text{picrate})_2]$ (**3**), respectively, (where **HL** is the 1 : 2 condensation product of 4 ethyl 2,6 diformylphenol and *N* methylethylenediamine and H_2L' (a diamino diimino diphenol system) is a new type of macrocyclic ligand). Compound **1** is water soluble and its aqueous solution exhibits intense fluorescence properties. 2,4 Dinitrophenol (DNP) and picric acid (PA) selectively quench the fluorescence intensity of **1** to a significant extent, revealing that **1** is a fluorescence sensor of DNP and PA. Compounds **2** and **3** were prepared by mixing **1** with DNP and PA. As a huge change in the system (acyclic to macrocyclic) occurs while exhibiting sensing behaviour, it is evident that **1** senses DNP and PA through a chemodosimetric approach in aqueous media. For sensing nitroaromatic compounds, compound **1** acts as (i) a rare chemodosimeter, (ii) a rare metal containing chemodosimeter and (iii) a rare fluorescent

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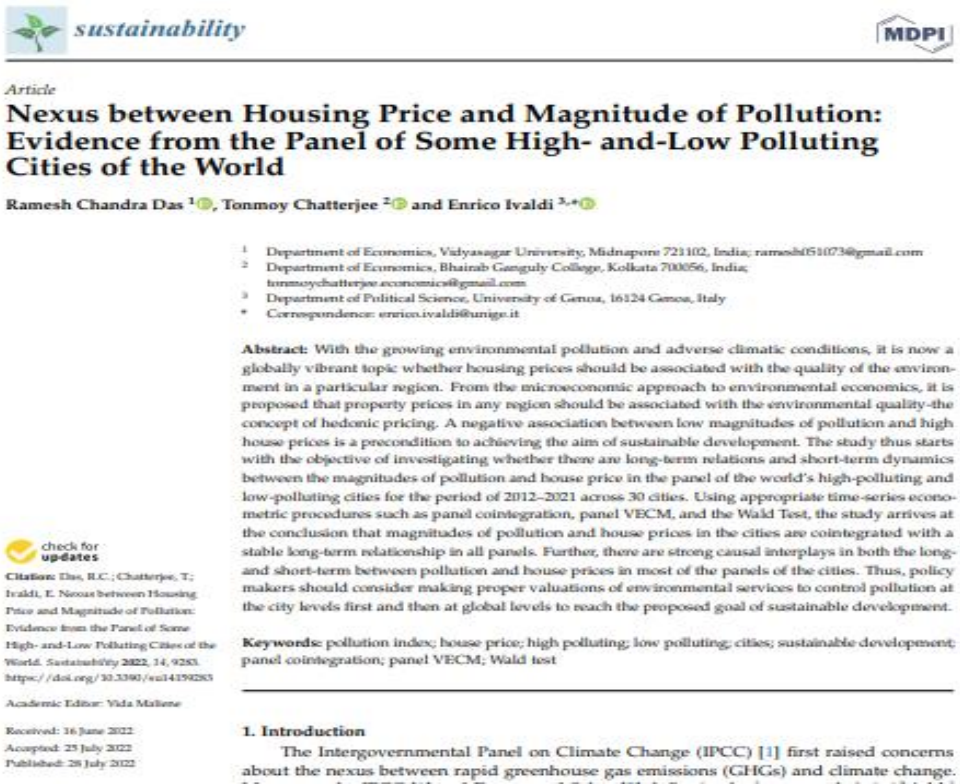

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Article

Nexus between Housing Price and Magnitude of Pollution: Evidence from the Panel of Some High- and-Low Polluting Cities of the World

Ramesh Chandra Das [1], Tonmoy Chatterjee [2] and Enrico Ivaldi [3,*]

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Abstract: With the growing environmental pollution and adverse climatic conditions, it is now a globally vibrant topic whether housing prices should be associated with the quality of the environment in a particular region. From the microeconomic approach to environmental economics, it is proposed that property prices in any region should be associated with the environmental quality-the concept of hedonic pricing. A negative association between low magnitudes of pollution and high house prices is a precondition to achieving the aim of sustainable development. The study thus starts with the objective of investigating whether there are long-term relations and short-term dynamics between the magnitudes of pollution and house price in the panel of the world's high-polluting and low-polluting cities for the period of 2012–2021 across 30 cities. Using appropriate time-series econometric procedures such as panel cointegration, panel VECM, and the Wald Test, the study arrives at the conclusion that magnitudes of pollution and house prices in the cities are cointegrated with a stable long-term relationship in all panels. Further, there are strong causal interplays in both the long- and short-term between pollution and house prices in most of the panels of the cities. Thus, policy makers should consider making proper valuations of environmental services to control pollution at the city levels first and then at global levels to reach the proposed goal of sustainable development.

Keywords: pollution index; house price; high polluting; low polluting; cities; sustainable development; panel cointegration; panel VECM; Wald test

check for updates

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1. Introduction

The Intergovernmental Panel on Climate Change (IPCC) [1] first raised concerns about the nexus between rapid greenhouse gas emissions (GHGs) and climate change.

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Published: 08 March 2022

Application of Analytic Hierarchy Process and weighted sum techniques for green tourism potential mapping in the Gangetic West Bengal, India

Shrinwantu Raha & Shasanka Kumar Gayen

GeoJournal (2022) | Cite this article

Abstract

Green tourism is an emerging sustainable approach that needs to be implemented to manage environmental pollution in a particular region. Although the Gangetic West Bengal (GWB) is full of green tourism potential, the green tourism potentiality in this region has not been revealed yet. Therefore, the present research is focused on the delineation of the green tourism potential zone of the GWB using the Analytic Hierarchy Process (AHP) and weighted sum techniques. The whole methodology has been implemented here through a straightforward, concise, and multistep (5-steps) process, which removes the entanglement and intricacy of the traditional AHP technique. At the first step, nine thematic layers are prepared. In the second

Author: N. Banerjee, Advances in Bioresearch

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Advances in Bioresearch

ORIGINAL ARTICLE

Assessment of Working Posture of Food Growers: A Study in a Southern District of West Bengal

Ayan Chatterjee [1,2*], Sandipan Chatterjee[1], Neepa Banerjee[1], Shankarashis Mukherjee[3]
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ABSTRACT

Paddy cultivation involves in various processes, some of the postures were very harmful. Some of the works are dominated by static muscular contraction and some other works are involved with repeated dynamic activity. In this backdrop the present study has been undertaken to assess the musculoskeletal disorders and overall postural stress in 41 male food growers during transplanting of paddy seedlings in southern area of West Bengal. Different working postures of the agricultural workers analyzed with the owako working posture analysis system (OWAS), rapid upper limb assessment (RULA), and rapid entire body assessment (REBA) methods. The food growers adopt awkward postures at work and suffer from musculoskeletal disorders because they remain in such awkward postures for a prolonged period of time. From the result of the present study, it was observed that those food growers worked continuously in awkward postures during certain agricultural activities. Consequently, they suffered from discomfort in different parts of their body.

Keywords: *Musculoskeletal disorders, REBS, RULA, OWAS*

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INTRODUCTION

Rice is one of the major food crops of the world. It provides the bulk of daily calories; moreover, rice is also one of food which is considered to be a potential food vehicle for the fortification of micronutrients because of its regularly consumption. It is a good source of thiamine (vitamin B1), riboflavin (vitamin B2) and niacin (vitamin B3). On the other hand, rice cultivation is an important sector of earning opportunity for the human resources engaged in agricultural task; 58.4% of the human resources are engaged in the different agricultural task during the paddy cultivating time in India. And 43,5% of male and 46,3% of the female human resources are engaged in different agricultural work during the paddy cultivating time in WB. The area under paddy cultivation is about 44.79 million hectares, the largest in the world. Yet, the agricultural sector in the rural villages of India is still dependent on non-mechanized technique i.e., dependent on the physical effort of the human resources involved [1-4]. During the paddy cultivating time the agricultural workers have to carry out different tasks - ploughing, transplanting, reaping, threshing and parboiling throughout the year even in a single day too. Earlier studies report that, drudgery is generally conceived as physical and mental strain, agony, monotony and hardship experienced by human beings [5-8]. While all these results in decline in living and working conditions affecting men and women [9-11]. Therefore, in order to ensure health, wellbeing and thereby improving the work performance, the assessment of occupational health status is considered as an essential factor for the human resources engaged in outdoor occupations especially those who are engaged in different types of tasks during the period of paddy cultivating time [12-14]. Paddy cultivation involves in various processes, some of the postures, which were taken by the food growers were very harmful, Some of the works are dominated by

Author: Ushri Roy, Research Journal of Pharmacy and Technology

Author: Subhranil Som, International Journal of Computing and Digital Systems

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Model for Analyzing Psychological Parameters Recommending Student Learning Behaviour using Machine Learning

Iti Burman [1], Subhranil Som [2] and Syed Akhter Hossain [3]

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Abstract: One of the main objectives of Educational Data Mining (EDM) is to improve the education system to increase student retention, help students to score high and attain holistic development. The purpose of the study is to analyze the psychological parameters of students to predict their intellectual performance and generate recommendations to be utilized by institutes and students to improve academic performance. This study performs matrix factorization using single value decomposition (SVD) to predict missing parameters related to the psychological behaviour of students with root mean square equals 0.059 and uses the user-based collaborative filtering technique to predict their grade with RMSEA as 0.055. It makes use of decision tree (ID3) algorithm for generating decision rules that produces results with an accuracy of 76% and provides suggestions on how to improve learning by changing the psychological behaviour of students. The results showed that three parameters of personality (namely conscientiousness, openness and need for cognition), six of motivation construct (intrinsic motivation, optimistic, goal orientation, concentration, locus of control and self-efficacy), five of self-regulatory learning strategies construct (rehearsal, elaboration, meta-cognition, peer learning, time/study management) highly impacted academic performance in positive way. Students belonging to upper and middle socioeconomic status avail more from learning facilities. Also, learning the in-depth knowledge of the topic enhance student intellectual performance. It is noted that social integration and academic integration help students to learn the subject matter in friendly environment and reduces depression. The key findings highlight the parameters positively impacting students' intellectual performance. This help in improving students' intellectual performance which further addresses student retention, progress and employability.

Keywords: Academic Performance, Single Value Decomposition, Student, Educational Data Mining, Prediction, Recommendation, Collaborative Filtering, Decision Tree

1. Introduction

Student's intellectual performance is an enduring issue for institutes, students and society as education is essential for the growth of any country. Education has also progressed with the advancement in technology. Online resources have eliminated the barriers related to absenteeism in the classroom and face to face teaching-learning process. Besides various tutorials, educational websites and availability of subject material all the time it is noted that the performance of students is not satisfactory. Since, students differ in their behaviour and academic competencies the need to study various parameters affecting the academic performance of students is a matter of important concern. This laid the foundation for comprehensive research on enhancing student academic performance with the use of their academic and non-academic abilities.

Timely prediction of the academic and non-academic performance of student can help institutes to identify the areas a student is lacking and can beforehand improve it by taking necessary actions. It is evident from previous studies that non-intellectual constructs of students significantly impact their academic performance. Various data mining techniques such as linear regression [35], logistic regression [18], neural networks [63], support vector machine [73], decision tree [75] have been extensively studied for predicting the aforementioned objective. Romero, Ventura, Espejo and Hervás (2008) [63] classified students to predict their marks based on

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Cryptanalysis of a novel bitwise XOR rotational algorithm and security for IoT devices

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Abstract. The internet of things (IoT) is a multiple devices, which connects with the internet for communication, in order to obtain the updated from the cloud. The fog can act as a controller and it is located between the IoT devices and cloud. The major attacks like de-synchronization, and disclosure has arises in the devices, this has been prevented. The major contribution in this work is key generation and authentication, for key generation the "advanced encryption standard algorithm" is developed, in which the new and old keys are generated. The encryption is done under the source side, and decryption is done under the device side. The fog security is maintained through "device tag, and bit wise XOR rotational algorithm". The security, and the computational complexity is defined in this work and it is given in table format. The implementations are carried out in the MATLAB R2016 a. The proposed algorithm is compared with the existing protocols like LMAP, M2AP, EMAP, SASI, and RAPP, from the comparison the proposed methodology makes the better knowledge about the security and prevents from various attacks.

Keywords: Cloud, fog, internet of things, advanced encryption standard algorithm, bit wise XOR rotational algorithm

1. Introduction

The platform of internet of things (IoT) have several objects, which is surrounded us in one or another form. The new criteria of sensor network topologies, and tag device (radio frequency identification-RFID), contains some communication and the information, which is embedded in the environment as an invisible manner. Thus the results has been gives the massive data to stored, processed, efficacy, and highly interpretable [1]. The virtual infrastructures are provided by the fog computing to integrate the platform of visualization, client delivery, storage devices, analytical, and monitoring devices. The cost model of fog computing can enable the end-to-end service for users, and business to access the applications from anywhere [2,24].

The new challenges, and security threats are arrived towards the users in this way the fog computing make more adventurous one. In cloud computing have the service providers, similar way the fog also support to fog service providers [3–5]. The corrections of the fog data is very risky manner and it is occurred due to the following reasons

- More powerful infrastructure.
- Reliable than the personal computing devices.
- Solve the threats (Internal and external) for data integrity [1,6–9,25].

The security is held on through the encryption process with the huge growth of computer networks. The huge amount of the data is being transmitted over the several kind of networks. It can often prove that the several part of the information is being kept as private or confidential. The required data protection have been discussed with the help of security techniques [10]. One of the most critical aspects in the fog computing's are the security maintenance over the entire network.

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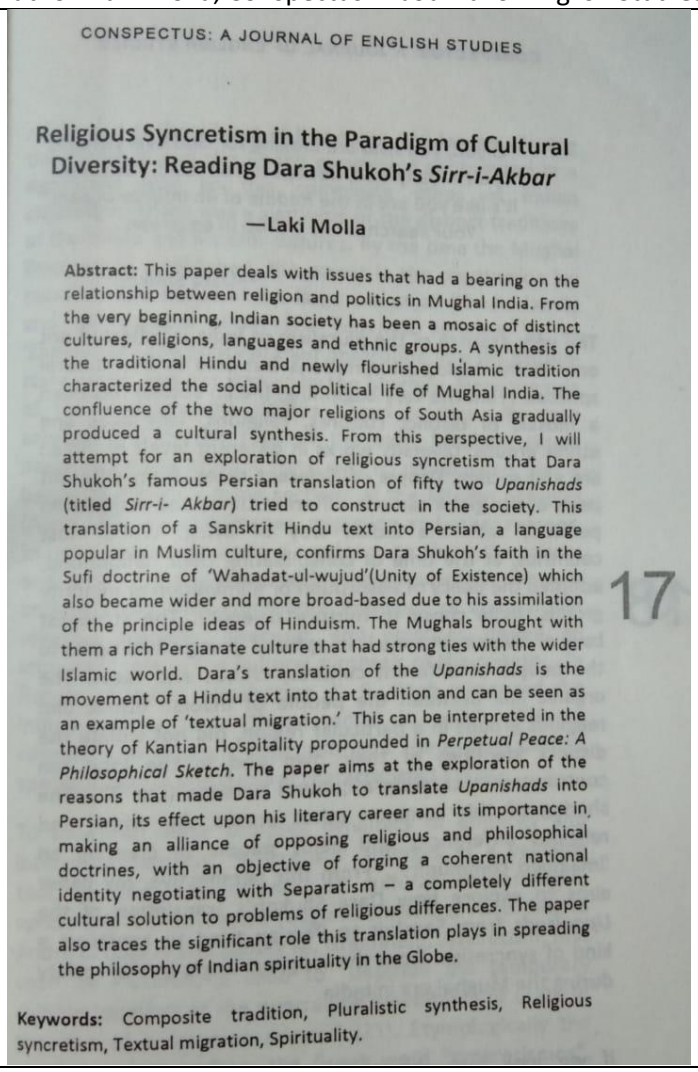

CONSPECTUS: A JOURNAL OF ENGLISH STUDIES

Religious Syncretism in the Paradigm of Cultural Diversity: Reading Dara Shukoh's *Sirr-i-Akbar*

—Laki Molla

Abstract: This paper deals with issues that had a bearing on the relationship between religion and politics in Mughal India. From the very beginning, Indian society has been a mosaic of distinct cultures, religions, languages and ethnic groups. A synthesis of the traditional Hindu and newly flourished Islamic tradition characterized the social and political life of Mughal India. The confluence of the two major religions of South Asia gradually produced a cultural synthesis. From this perspective, I will attempt for an exploration of religious syncretism that Dara Shukoh's famous Persian translation of fifty two *Upanishads* (titled *Sirr-i- Akbar*) tried to construct in the society. This translation of a Sanskrit Hindu text into Persian, a language popular in Muslim culture, confirms Dara Shukoh's faith in the Sufi doctrine of 'Wahadat-ul-wujud'(Unity of Existence) which also became wider and more broad-based due to his assimilation of the principle ideas of Hinduism. The Mughals brought with them a rich Persianate culture that had strong ties with the wider Islamic world. Dara's translation of the *Upanishads* is the movement of a Hindu text into that tradition and can be seen as an example of 'textual migration.' This can be interpreted in the theory of Kantian Hospitality propounded in *Perpetual Peace: A Philosophical Sketch*. The paper aims at the exploration of the reasons that made Dara Shukoh to translate *Upanishads* into Persian, its effect upon his literary career and its importance in making an alliance of opposing religious and philosophical doctrines, with an objective of forging a coherent national identity negotiating with Separatism – a completely different cultural solution to problems of religious differences. The paper also traces the significant role this translation plays in spreading the philosophy of Indian spirituality in the Globe.

Keywords: Composite tradition, Pluralistic synthesis, Religious syncretism, Textual migration, Spirituality.

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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

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The University Machine[1]: Critiquing the Colonial Education System in R K Narayan's *The Bachelor of Arts*

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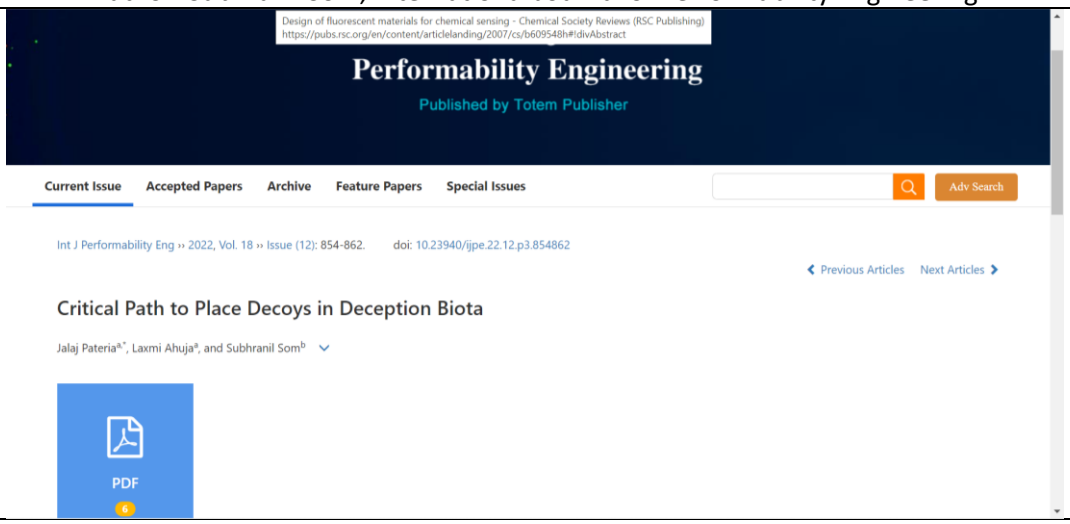
This paper examines a crucial episode of colonial educational policy in India during the second half of the 19th century - a period of about five decades from Wood's Education Despatch of 1854 to Lord Curzon's University Act in 1902 and the effects of this education system upon the natives with reference to R. K. Narayan's *The Bachelor of Arts*. As compared with India under the Company, this era was a period of peace and tranquility and is different regarding the attitude of the Indian people towards their British conquerors. Prior to 1854, there was a general unwillingness (except a few persons of the upper class) to study the language of the British, to understand their culture, and generally to come into closer relations with them. After 1902, there was again "a parting of the ways because the national sentiment had been reawakened and the Indian people had begun their 'war' against the British rulers" (Nurullah and Naik 125). Between 1854 and 1902, there existed the most harmonious relations between the rulers and the ruled. This peaceful social atmosphere was also supportive to the progress of education in India. The paper aims at the exploration of how new identity was created through education during this period by reassessing the educational policy taken by the colonial government to educate its colonized subjects. R. K. Narayan, himself a product of this education system, criticized it through the character of Chandran in *The Bachelor of Arts*. The novel describes in detail the last year of Chandran's graduation in Albert College and points out the imperialistic nature of the colonial education system.

Author: Subhranil Som, International Journal of Performability Engineering



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Is There an Audience in the Lady's Bedchamber? Shakespeare's Dramatic Trope in the Sleep-Walking Scene in *Macbeth*

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Abstract

In William Shakespeare's *Macbeth*, the famous Sleep-Walking scene of Lady Macbeth also includes two observers, the Waiting-Gentlewoman and the Doctor of Physic, who play multiple roles during this scene, as well as in the development of the Lady's character. In their somewhat choric role, they amplify the Lady's utterances, and sway the audience's attitude. In applying the moral yardstick, their brief observation and comments are really significant. Standing in-between the Lady and the audience, they let the playwright employ his favourite trope of play-within-the-play. In their crucial roles as interpreters, they also help the critics establish the gendered logocentrism in analysing events and characters.

Keywords: Audience, Experience, Metatheatre, Performance, Knowledge

Introduction:

The very prospect of one or more (preferably male) characters getting to watch a lady sleeping has been used multiple times within the Shakespearean dramatic oeuvre. Oberon and Puck watching over Lady Titania sleeping and waking to fall in love with a random artisan (*A Midsummer Night's Dream*), Othello secretly watching Desdemona before he kills her (*Othello*), Octavius Caesar and his whole train having a close look at the body of the seemingly asleep Cleopatra (*Antony and Cleopatra*) – all these instances bear some clear elements of voyeuristic pleasure. In most cases, as it is, the woman subject to the secret 'watching' either ends up becoming a victim of adultery (in case of Titania), or death/murder (in case of Desdemona and Cleopatra). Lady Macbeth, as one finds in the Act V, Sc-i of *Macbeth* (*Macbeth* 270-75), is no exception too. Of course, she is sleep-walking, and not merely sleeping. Still, after being secretly watched by the Waiting-Gentlewoman and the Doctor of Physic (Act V, Sc-i), she is never seen on the stage again, and the report of her apparent suicide (Act V, Sc-v) is delivered to Macbeth later on. The present article seeks to understand why this act of 'watching' on the part of the Waiting-

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Gentlewoman and the Doctor of Physic is so important in determining the fate of the formidable character of Lady Macbeth. A Psychoanalytic approach has been applied to contextualize the dramatic representation of the characters of Lady Macbeth, the Waiting-Gentlewoman and the Doctor of Physic. Also, a Feminist approach has been used to better assess the transformation in the behaviour of Lady Macbeth.

Retrospection:

Speaking in terms of events that take place on the stage, not much really happens during Act V, Sc-i of *Macbeth*. (*Macbeth* 270-75)

> With a burning taper in her hand, Lady Macbeth passes from one room to another, muttering strange and apparently incoherent or delirious words (somniloquy) which actually unravel the bottom of her subconscious mind that she so long kept repressed. (Dutta 66)

Structurally, however, the scene is of utmost importance, as the words uttered by Lady Macbeth

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SHAKESPEARE'S KALEIDOSCOPE: THE TROPE OF SHIFTING PERSPECTIVE IN *HAMLET* AND *MACBETH*

Manidip Chakraborty

Abstract: William Shakespeare's plays *Hamlet* and *Macbeth* exhibit an amazing experimentation with the trope of perspective. There are various thematic and structural devices that bind the two plays together, and simultaneously dissuade the audience from believing that Shakespeare was merely repeating himself. The author intentionally repeated the same plot-line perhaps to further explore the intricate issues such as the usurper king and the rightful owner of the (British?) throne. By shifting the perspective, Shakespeare has cleverly opened up the multiple possibilities of re-telling the same story from different angles. By letting the 'voiceless' of one play speak out in the other one, the playwright has thus challenged the traditional concept of heroism in drama, and also introduced the fluidity of narrative.

Key Words: Perspective, Voice, Theme & Structure, Narrative.

The Tragedy of Hamlet, the Prince of Denmark, written by William Shakespeare sometime between 1599 and 1601, might have drawn upon the 13th century legend of Amleth, as well as Thomas Kyd's play known as *Ur-Hamlet*. (*Hamlet*, 8) *The Tragedie of Macbeth*, first performed perhaps in 1606, on the other hand, drew its material from the semi-historical account of Scotland as presented in Holinshed's *Chronicles*. (*Macbeth*, 13) The differences between the two plays are too obvious and numerous to mention. Yet on a number of thematic and structural grounds, as this current paper purports to establish, these two plays seem to be connected, if only seen through a fluid kind of viewpoint. A close study might even lead one to consider *Hamlet* and *Macbeth* as the Bard of Avon's daring experimentation with the prospect of perspective; with a kaleidoscopic shifting of the viewpoint, a single event might be bifurcated into two apparently distinct plot-lines resulting in two of the greatest plays ever produced.

One important factor that binds both the plays *Macbeth* and *Hamlet* together, alongside adding to the visual and psychological charm of the plays, is the presence of some preternatural existence which apparently shapes the course of events that follows. Hamlet being coerced by the Ghost to resort to the path of revenge in a way sanctions his very actions that seriously challenge the Christian codes of conduct. The metaphysical soliciting in a choric way transmits information to the avenger which is beyond the knowledge of any mortal being; barring Claudius, the supposed murderer. After a certain point (Act III, scene-iii, lines 36-38, to be precise, as Claudius confesses his crime in a

soliloquy) it is proven before the audience that the Ghost did not lie indeed. (*Hamlet*, 183-4) The 'supernatural soliciting' that Macbeth receives, however, leaves a separate impact on Macbeth as well as on the events of the play. (*Macbeth*, 147) From Macbeth's perspective, the Witches' act of getting him a glimpse into 'the seeds of time' conflagrates his 'vaulting ambition' and eventually leads him to the act of regicide. (*Macbeth*, 167) There is no attempt on the part of the protagonist to refute the so-called 'prophecies' of the Witches, and he rather uses them as lame excuses to shield the unnatural deeds he has committed, and he continues to commit. If the act of murdering Duncan was something pre-designed by some metaphysical entities, then there should have been some justification for what Macbeth performs as an agent of Nemesis. But the Three Witches are not to be

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UN-KNOWING THE KNOWN: THE SUBVERSIVE DYSTOPIAN NARRATIVE AND THE OTT PLATFORM

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Abstract: Many independent film makers in India have opted for the OTT platform to launch their dystopian, anti-establishment narratives, which would otherwise have never seen the daylight. As opposed to the mainstream movies, these dystopian stories exhibit the bold employment of the theories of Alienation Effect and Power-and-Discipline which would allow the viewers to better analyze the latent political allegory. The spatial-temporal detachment still manages to critique the contemporary government policies in an oblique way. The curious balancing of the familiar with the unfamiliar generates an element of terror, as to be found in works such as *Ghoul*, *Leila* and *Ghost Stories*. The trope of the dystopian lends these apparently subversive narratives an aesthetic excellence so that they can go beyond the trajectory of mere political agenda.

Key Words: OTT, political, dystopian, defamiliarization, alienation, surveillance, power

I. Introduction:

Following the Indian Supreme Court's 2021 admission of a petition to pre-censor the video-streaming platforms (commonly known as the OTT or over-the-top players), the Indian government is now all set to introduce broad content guidelines for OTTs. The natural consequence of this would surely be the curbing down of the freedom the OTT players have been enjoying since their very early days (Hotstar since 2015, and Netflix India and Amazon Prime Video since 2016). The employment of the dystopian frame has allowed many debutant 'indie' movie makers to try their hand in telling political stories on OTT platforms in a highly satisfactory aesthetic mould in recent past. The present article chiefly focuses on the 2018 Netflix mini-series *Ghoul*, Netflix TV Series *Leila* (2019), and the anthology movie *Ghost Stories* (or rather the Dibakar Banerjee directed short film in this 2020 film), to consider how the employment of the dystopian trope has turned them into by far the most overtly political narratives in recent times. To better understand the working of the dystopian trope on the OTT platform, various strategies related to the *Verfremdungseffekt* (or Distancing/Alienation/Estrangement Effect) and Michel Foucault's theory of Disciplinary Power have been employed and explored.

II. Discussion:

A dystopia is "an imagined world or society in which people lead wretched, dehumanized, fearful lives". (Merriam-Webster) Etymologically speaking, the word *dystopia* takes its origin from the Greek word *topos*, which means "place" in Greek. This is crucial in understanding the way the word now gets contextualized, as the very notion of *dystopia* depends much on the process of

defamiliarization and displacement. "Since dystopias reflect the zeitgeist of the historical periods in which they were produced, they must necessarily take on a variety of guises, and allowances must be made for variation across cultures and epochs." (Palardy 9) For example, the near future locale of *Ghoul* is unspecified, *Leila* is based in the land named Aryavarta in the late 2040s, *Cargo* (the 2019 Netflix science fiction movie) entirely takes place in an immigration office in space for dead people, and Dibakar Banerjee's short film in *Ghost Stories* is located in some fictitious Bees-Ghara. The non-specificity or the unknown aspect of the spatial dimension inevitably leads the viewers to expect the unexpected, the bizarre. These dystopian locales are hypothetical 'neverlands' featuring characters or situations one should not be expecting to occur in the familiar settings. But therein lies the beauty of the Kafkaesque 'one-fine-morning' start of a story in which the apparently logical takes the back seat, and the absurd gets foregrounded. The dystopia at its best is therefore a well-executed balancing of the unknown and the known.

This spatial detachment is integrally related with the *Verfremdungseffekt* or the Alienation Effect. The term *Verfremdungseffekt* is rooted in the Russian Formalist notion of the device of *making strange*, which literary critic Viktor Shklovsky claims is the essence of all art. Indeed, the aforesaid Indian content-makers (the word 'film' seems to have lost its etymological context recently) take special care to create an alienated spatio-temporal zone. This purports to let the viewer (the singular better suits the current mode of watching such contents) detach her/himself from the familiar domains and focus on the new territories presented in the narratives. For instance, the zombie-land called Bees-Ghara that Dibakar Banerjee presents in his short film in the anthology *Ghost Stories* is a scathing commentary on the practice of sectarian violence based on caste, while making some oblique references to the pathetic education system in the heart of rural India. A more traditional movie like *Article 15* (2019), that critiques the strong hold of casteism on the general outlook of people in the UP, has been expectedly subjected to the wrath of the Censor Board. Banerjee's smart infusion of the absurd, Kafkaesque scenario of people (supposedly smitten by caste-based violence) getting dehumanized into a zombie-cum-monkey like entity would metaphorically say all it has to say, and yet escape the blows of censure. To further ensure the technical security of the film-makers, the director has made use of a frame narrative – the protagonist seems to have 'seen' the entire thing in a dream. The strange interplay of knowing and not-knowing however persists even at the closure, as the protagonist encounters the same individuals as he wakes up, although they have presently reverted back to their 'human' selves. The film ends with a sense of confusion and doubt regarding the 'inhuman' selves of these people; was that merely a vision, or the naked reality lying beneath?

Leila and *Ghoul* might be considered as fine dystopian narratives on the account of a series of criteria enumerated by Diana Q. Palardy in her authoritative book titled the *Dystopian Imagination in Contemporary Spanish Literature and Film*. (Palardy 10-11) To mention a few of them, both the stories present a hypothetical society that 'might be'; almost all the individuals in the stories are oppressed (by the State?) in one way or other, even though they may not be aware of it; systematic, sociopolitical problems are indeed responsible for the sectarian violence meted out to various characters; one encounters deliberately planned societies meant to keep under surveillance all

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Filed South African patent titled with **"A Biometric Authentication System and Method for Capturing a Real Time Image"** **Patent Application No.**: 2022/00093, 03/01/2022, **Patent granted** on 25th May 2022

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