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INDEX

Front page of conference proceeding of "Role of Digitalization in The Economic Development of Punjab"

Seminar Proceedings

of

ICSSR Sponsored National Seminar

On

ROLE OF DIGITALIZATION IN THE ECONOMIC DEVELOPMENT OF PUNJAB WITH SPECIAL REFERENCE TO AGRICULTURE

Saturday, 14 May, 2022

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First page of paper "Improving agriculture yield by plant leaves disease detection in early stage using Bio Inspired Fuzzy tunedMachine Learning technique

Improving agriculture yield by plant leaves disease detection in early stage using Bio Inspired Fuzzy tuned Machine Learning technique

Rajeev Mehta
Associate Professor in Computer Science,
PG Department of CS and IT,
S. L. Bawa DAV College, Batala-Punjab.
Phone no: +91-9814914286
E-mail: mehta_icl@rediffmail.com

ABSTRACT

Agriculture is considered as the backbone of Indian economy. Due to several changes in climatic conditions and industrial technologies, several modern approaches have emerged and are followed for increasing the production of agricultural commodities. Much research have been conducted in this field in the past so as to identify suitable innovations that are effective and accurate. Precision Agriculture (PA) is one of the techniques which aims at improving the farm production by using techniques such as pest identification and control, weed detection, plant disease detection etc. These techniques enable easy detection of the issues and support quicker action against the abnormalities. The common abnormalities include development of anomalous leaf, distortion of shape and color, presence of harmed units and hindered development. Infections can be found in various parts of the plants such as leaf, stem etc. and are to be dealt using appropriate techniques. Due to the rapid advancements in machine learning (ML) and deep learning (DL) techniques in the recent times, ML / DL based solutions are mostly sought for many real world problems and are applied in various fields. These advancements have contributed a lot towards development of efficient models to support yield of agricultural crops and the same are being experimented in the research of plant disease detection as well. There are many machine learning algorithms such as Random Forest, Support Vector Machines etc. and we can apply deep learning strategies such as Inception-V3, VGG-16, VGG-19 and can detect the plant disease. Using such deep learning techniques, when a new image is given, the system predicts the disease type with which the plant is currently affected and renders support to initiate suitable action before the disease progresses to the other part of the plant and cause severe damage. The major

First page of paper "Digitalization of India: Growth of Indian Economy & Challenges"
"

Digitalization of India: Growth of Indian Economy & Challenges

Mr. Sukhwinder Singh
Assistant Professor
P.G. Department of Computer Science & IT
S.L. Bawa D.A.V. College, Batala
E-mail: sukhi_chhina@yahoo.co.uk

ABSTRACT

The process Digitalization started with the advent of computers or digital technology in the 1950s. Since then, continuous advancement of digital technologies to change business models, and provide new revenue and job opportunities. Digitalization refers to the transformation of manual business to a digital business which ultimately helps in the growth of Indian economy. This rapid growth also helps young generation to start new startups by creative ideas. This paper concentrates on various digital services provided throughout the country, how digitalization helps in the growth of Indian economy and how digital technology provides various technological job opportunities to the young generation that in turns bringing success in Indian economy.

Keywords: Digitalization, Indian Economy.

Introduction:

The process Digitalization started with the advent of computers or digital technology in the 1950s. In India it was in the beginning of 1990s and 2000s with limited efforts of e-governance programmes. As a result it had little impact on the citizens of India especially youth. In 2014, according to United Nation, rank of India was 118th globally out of 182 countries in the use of digital services. Since then, continuous advancement of digital technologies to change business models, and provide new revenue and job opportunities.

Digitalization has played vital role in bringing success in Indian economy by producing jobs to youth of country. This helps the young generation to start new startups by creative ideas. Indian government encouraging citizen of country to go cashless by using digital services to decrease cash transactions. The efforts of Digitalization are not same as previous year's efforts because government has

First page of paper "Statistical Analysis of Punjab's Economy: Special Reference to Agriculture Sector"
"

Statistical Analysis of Punjab's Economy: Special Reference to Agriculture Sector

[1]Mr. Amandeep Singh & [2]Ms. Sumanpreet Kaur
Assistant Professor, [1]Deptt. of History,
[2]Deptt. of Mathematics,
S.L. Bawa DAV College, Batala

ABSTRACT

Punjab is considered to be the bread basket of India. While Punjab's share in total geographical area of India is 1.53%, but its share in the central pool of rice and wheat was 25.53% and 35.45 % respectively in 2018-19. Agriculture sector plays a crucial role in ensuring food security and nutrition, while also eradicating poverty, uplifting the rural economy and providing employment to a large section of the society. In Punjab, the agriculture sector is the backbone of the economy. Between 2011-12 and 2018-19, on average, the agriculture and allied sector, contributed almost 30% of the GSVA. The main aim of this paper is to analysis of the Punjab's economy especially the agriculture sector during this decade (2010-20). During the recent years, Service sector in Punjab emerging as the largest one, due to the very less minimum selling prices (MSP) in the agriculture beside high investments. But yet Agriculture sector in Punjab maintained its position as most profitable sector in the state. Comparing to the national level, Punjab's agricultural sector has about 27% share in employment and contributed to 28.7% (2018-19), while the India has 44.86% people working in agriculture and contributed only 15.87 (2018-19) in GSVA.

Keywords: Agriculture; Economy; Income; GSVA (Gross State Value Added).

Introduction:

Although the State economy is under structural transformation from agriculture to non-agriculture sector and yet it is an important sector of Punjab's economy, which provides employment to 36% workers (Census 2011). In 2016-17 agriculture and allied activities contributed 26.15% to the GSVA at constant prices. Total cultivable area of the State is 4.2 million hectares, which constitutes only 3% of the net area sown in the country. This small area produces 19% of wheat, 10% of rice, 10% of milk, 20% of honey, 48% of mushroom & 5% of cotton in the country. Punjab ranks 7th as gross producer of wheat in the world, it generates third marketable

First page of paper "Impact of different land use on bulk density and other physical properties of soil

Impact of different land use on bulk density and other physical properties of soil

Gurwant Singh[1] and Roopkiranpreet Kaur
Department of Soil Science, Punjab Agricultural University,
Ludhiana-141004, Punjab.
Department of Physics, S.L. Bawa DAV College,
Batala, Gurdaspur-143505, Punjab.

ABSTRACT

An understanding of the effects of land-use and land-use changes on soil properties is a pre-requisite for ensuring the sustainability of the environment and for better soil quality management. A study was conducted in Fruit Research Farm, Punjab Agricultural University, Ludhiana to evaluate the influence of land-use on soil organic carbon and physical characteristics. Four adjacent land uses namely: Bare, Paddy-wheat, Grassland and Pear were selected to evaluate their effects on different soil properties viz. Soil organic carbon (SOC), bulk density (Db), aggregate stability (MWD), infiltration, saturated hydraulic conductivity (K_{sat}), and soil moisture retention parameter (S). The SOC content in the surface layer was maximum in pear soils and minimum in bare soils but in sub-surface layer, it was maximum in grassland and minimum in paddy-wheat soils. The wet stability of aggregates (MWD) was maximum in grassland soils for both surface (0.51 mm) and sub-surface (0.45 mm) soils. In the surface soils, pear and grassland soils have similar and minimum bulk density whereas the paddy-wheat soils have maximum bulk density. In the sub-surface layer, grassland soils have minimum bulk density whereas it was maximum for paddy-wheat soils. Grassland soils had higher infiltration rate and K_{sat} over the other land uses. In the surface soils, the soil moisture retention parameter (S) was maximum for the pear soils (20.8 %) but for subsurface soils, it was maximum for grassland soils (18.9%). The maximum value of positive correlation was obtained between infiltration rate (IR) versus MWD (R^2=0.97) and IR versus K_s (R^2=0.97) whereas the maximum value of negative correlation was obtained between K_s versus Db. Of the evaluated land uses, pear and grassland soils were more sustainable over the other land uses.

Keywords: Aggregate stability; Bulk density; Infiltration; Saturated hydraulic conductivity; Soil characteristics; Sustainability.

First page of paper “Economic Outcomes of Direct Seeding of Rice; A Study"

Economic Outcomes of Direct Seeding of Rice; A Study

Roopkiranpreet Kaur
S.L Bawa DAV College, Batala,
Gurdaspur, Punjab, 153505

ABSTRACT

The direct-seeded rice (DSR) establishment method has replaced the puddled transplanted rice (PTR) establishment method in a number of rice-growing areas in Asia and South Asia over the past ten years. The DSR establishment method can prevent soil erosion, delay the loss of organic matter, and slow the deterioration of the soil’s physical qualities, in contrast to the PTR establishment approach. While taking into account the soil and climatic characteristics of the field, the availability of suitable land preparation equipment, and irrigation facilities, the DSR technique can also increase land productivity and labour efficiency. It has been found that smallholder households’ household income can increase when the DSR approach is used. Farmers with limited resources could benefit economically from policy incentives that promote adoption of the DSR approach.

INTRODUCTION

One of the most significant food crops in terms of area, productivity, and consumer choice is rice, which is a staple diet for more than half of the world’s population [1,2] 1 The Asia-Pacific area, which includes India, produces and consumes and over 90% of the world’s rice. India is the world’s second-largest producer and exporter of rice, and in 2013–14, it was the country that exported the most rice, ahead of Thailand, Vietnam, and the United States. India’s food security depends on rice, a crucial staple crop and major source of calories [3]. However, the total area used for rice production is decreasing as a result of urbanisation, industrialization, and crop diversificationAgriculture in South Asia and India is growing more expensive due to declining yields, rising energy costs, and rising fertiliser and input expenses. This would have a negative effect on smallholders’ income and present a higher risk to their ability to get enough food. A paradigm shift in farming methods is necessary to ensure food security for an expanding population in India and most South Asian nations while maintaining agricultural systems in the face of resource depletion, rising input costs, and climatic variability. To achieve this, traditional agriculture’s unsustainable practises (such

Terahertz Surface Plasmon Propagation in Metal Dielectric Metal Waveguide with Corrugated Surface
(Preface of Proceeding and online link)

Preface

This volume contains the papers presented at IEEE WRAP 2022: IEEE Workshop on Recent Advances in Photonics 2022 held on March 4-6, 2022 in Mumbai.

There were 176 submissions. Each submission was rigously reviewed by the expert reviewers including program committee members. The committee decided to accept 112 papers. The program also includes 9 tutorials and 18 invited talks.

WRAP is a biennial event organized by the IEEE Photonics Society in India. The primary aim of WRAP is to provide a platform that brings together global experts and researchers to disseminate and highlight novel contributions and challenges in the field of Photonics. The first edition of WRAP was organized at IIT Delhi in 2013. The later editions of WRAP were held at IISc Bangalore, Mahindra University, and IIT Guwahati in 2015, 2017, and 2019, respectively. The fifth edition of WRAP was held as a hybrid (in-person and virtual) event at SAMEER, Mumbai, India, in association with IIT, Bombay and TIFR, Mumbai.

We would like to thank all the participants and sponsors, including MEITY and DAE, Government of India; IEEE Photonics Society (IEEE Bombay Section); Sterlite Technologies Lmt. and Photonics Marketing Company. WE would also thank our technical sponsors including IEEE Photonics Society; Optica (formerly OSA); Optical Society of India; Optical Sensing and Monitoring and Prakash Bharti.

This event would not have been possible without the active support of EasyChair platform.

March 17, 2022
Mumbai

Kasturi Saha
Aditya Dharmadhikari

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Link of paper on IEEE Website: https://ieeexplore.ieee.org/document/9758233

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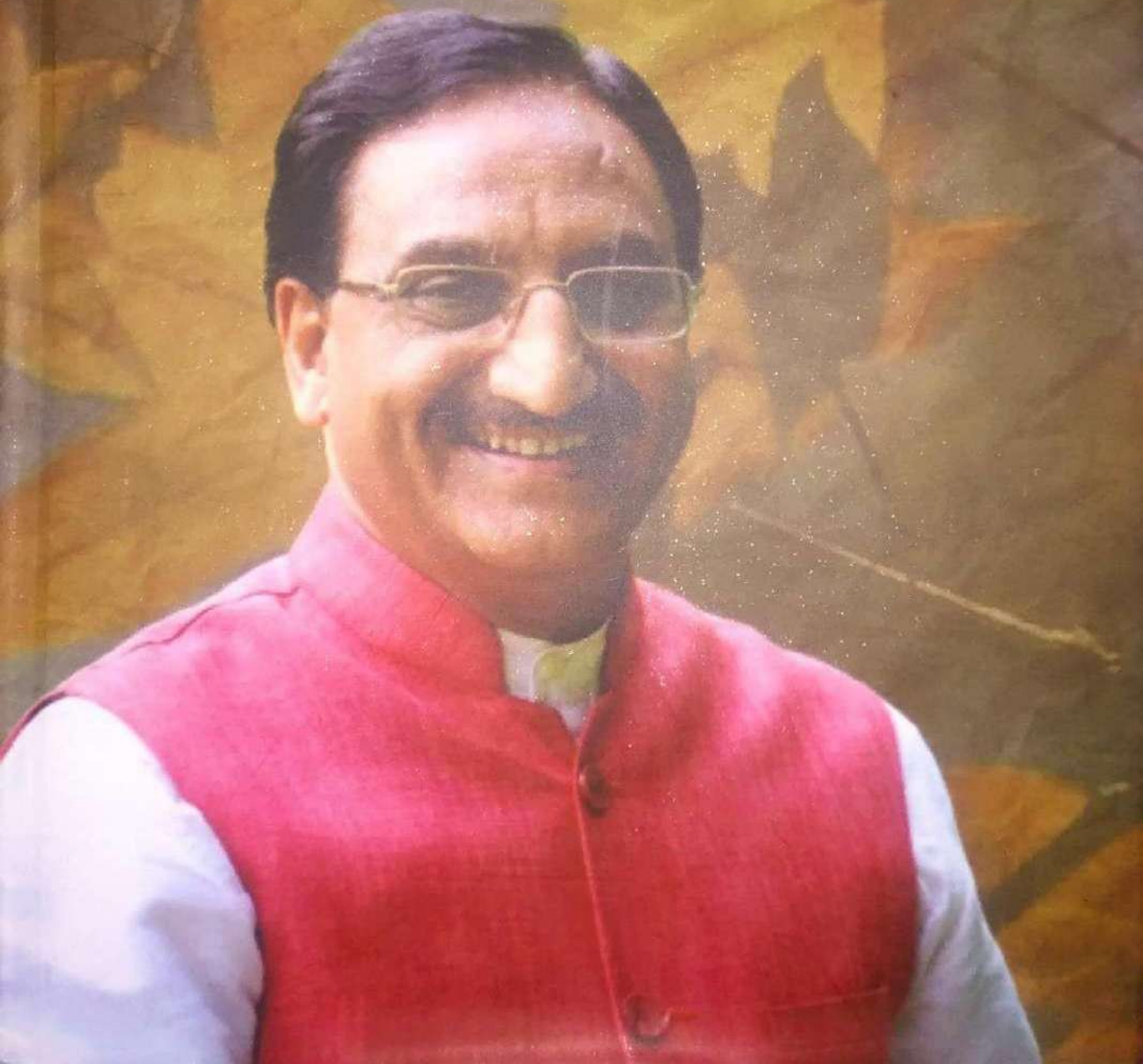
डॉ. 'निशंक' की रचनाशीलता के विविध आयाम

संपादक

डॉ. योगेन्द्र नाथ शर्मा 'अरुण'



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मुद्रक : राजोरिया प्रिन्टर्स, दिल्ली-32 से मुद्रित।

First Page of Published Chapter ""'Himalya mein Vivekanand' ki adhunik Prasangikta
"

'हिमालय में विवेकानंद' की आधुनिक प्रासंगिकता

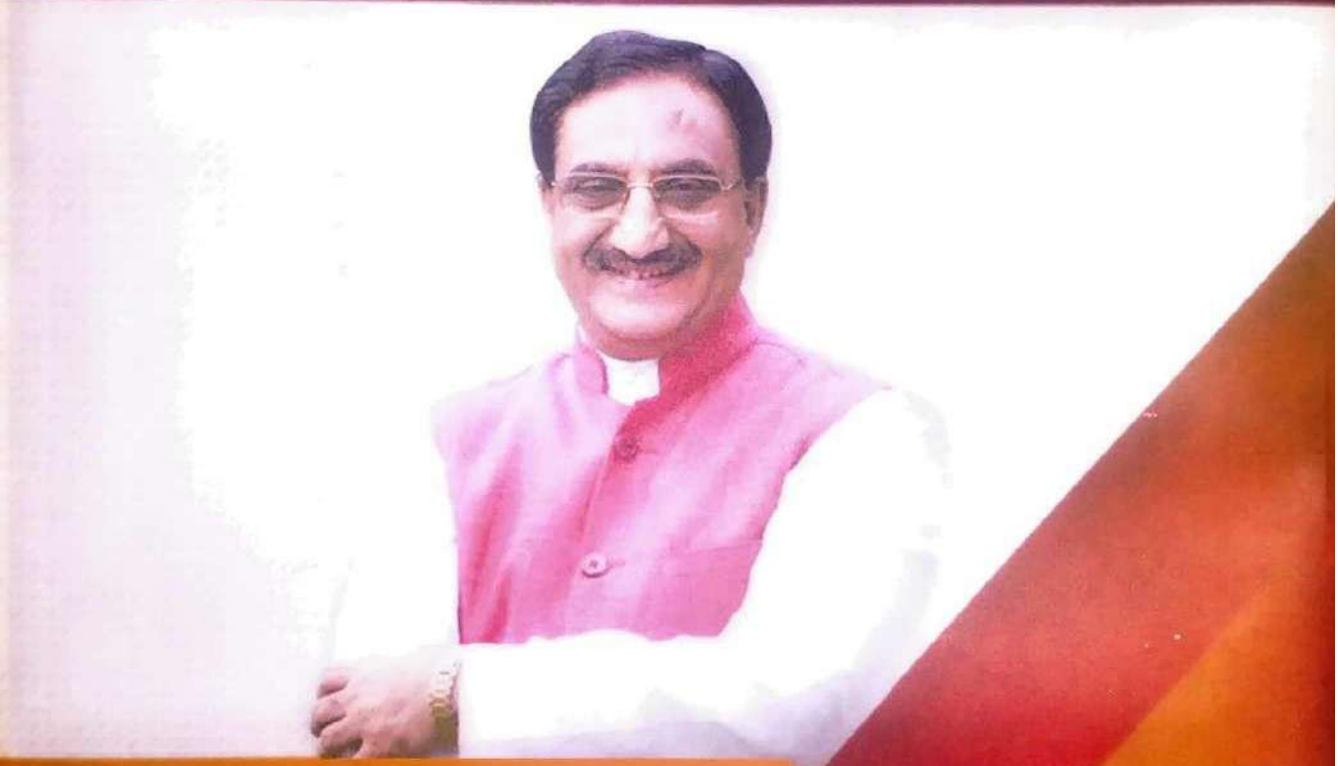
डॉ. सरोज बाला

भारतीय संस्कृति, सनातन धर्म एवं वेदांत दर्शन के संवाहक, राष्ट्रभाषा के रक्षक, हिंदी साहित्य जगत के सुविख्यात साहित्यकार डॉ. रमेश पोखरियाल 'निशंक' जी ने 70 से अधिक कालजयी रचनाएँ हिंदी साहित्य जगत को प्रदान कर दी हैं जिसके लिए युगों-युगों तक समस्त समाज उनका ऋणी रहेगा। ऐसे लेखक का साहित्य लेखन अपने युग को स्वर्णिम युग की उपाधि से अलंकृत करने में सक्षम होता है। भक्तिकाल पर दृष्टि डालें तो संत कबीर, गुरु नानक देव, गोस्वामी तुलसीदास आदि कवियों ने उस समय की दयनीय एवं विपरीत परिस्थितियों में प्रेरणा व आदर्श संपन्न साहित्य की रचना कर उस युग को 'स्वर्ण-युग' की संज्ञा से अभिहित किया। आज जब भारतीय समाज विशेषकर युवा-पीढ़ी भौतिकवादी चकाचौंध, मशीनीकरण, नकारात्मकता में धंसकर योग से भोग, परमार्थ से स्वार्थ, त्याग से संग्रह की ओर अग्रसर होकर अपनी भारतीय संस्कृति एवं नैतिक मूल्य से दूर होती जा रही है तो ऐसे समय में डॉ. निशंक जी की आध्यात्मिक एवं सांस्कृतिक तत्वों से ओत-प्रोत रचनाएँ उनका पथ-प्रदर्शन करने में समर्थ व सक्षम हैं जिनमें उनकी महानतम कृति 'हिमालय में विवेकानंद' शीर्षस्थ है।

डॉ. निशंक की कृति हिमालय में विवेकानंद का अध्ययन करते हुए सर्वप्रथम मुझे इसमें लेखक के उदात्त व्यक्तित्व की छाप दिखाई दी। लेखक का कथन है कि "उत्तराखंड हिमालय में स्वामी विवेकानंद के पदचिह्नों पर विभिन्न जिज्ञासाओं के निराकरण के लिए जब मैंने कई बार उन स्थलों का

Front Page of Book

डॉ. निशंक के साहित्य में सामाजिक यथार्थ एवं युगबोध



संपादक

डॉ. किरण खन्ना

भारतवर्ष के उ
गड़वाल क्षेत्र के
महान् भारतवर्ष
उच्च शिक्षा मंत्री
के सफर में नि
अनुभव संघर्ष
युगपुरुष होने का
— आर्य
पद्म
अ
प्रबंध

आज जब उ
वैश्विक स्तर प
चुकी है तो
भारतीय युवाओं
बन गया है। ऐ
अनुभव जनित
राष्ट्रीयता का प्र
अनुशीलन के
मूल्यों की
करता है।

Dr. Nishank ke Sahitya mai Samajik Yatharth Evam Yugbodh
By Dr. Kiran Khanna

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First Page of Published Chapter “Waah Zindagi" kahaniSanghreh ki Chaynit kahaniyon ka Shailivigyanik Vishleshan”

'वाह जिन्दगी' कहानी-संग्रह की चयनित कहानियों का शैलीवैज्ञानिक विश्लेषण

डॉ. सरोज बाला

प्रतिष्ठित एवं संवेदनशील साहित्यकार डॉ. रमेश पोखरियाल 'निशंक' का कहानी-संग्रह 'वाह जिन्दगी'[1] मनुष्य-जीवन के उतार-चढ़ाव, प्रतिकूल व अनुकूल परिस्थितियों, नकारात्मक व सकारात्मक मानवीय मानसिकता, तनाव, अलगाव, अजनबीपन, जैसी विसंगतियों, नारी-सशक्तिकरण, विविध सामाजिक समस्याओं को दर्शाने वाला जीवन्त दस्तावेज है। इस संग्रह में संकलित बीस कहानियों में कहानीकार के सामाजिक, मानवतावादी, आध्यात्मिक, राजनीतिक आदि क्षेत्रों में गहन अनुभव, विशिष्ट सृजनात्मकता साहित्य एवं भारतीय संस्कृति के प्रति लगाव, राष्ट्रीय भावना आदि बहुमूल्य गुण परिलक्षित होते हैं। इन कहानियों के कथा-कलेवर, परिवेश एवं भाषा-शैली को देखकर अनुभव होता है कि जैसे इनमें मेरी स्वयं की या मेरे इर्द-गिर्द के समाज की घटनाएँ हैं। कहानीकार पाठक को साधारणीकरण की अवस्था में पहुँचा देता है। इस कहानी-संग्रह की समस्त कहानियाँ अपने-आप में उच्च-कोटि का उद्देश्य, संदेश, प्रयोजन एवं सकारात्मक मानसिकता लेकर प्रस्तुत हुई हैं।

कहानी-संग्रह की प्रथम कहानी 'वाह जिन्दगी' महानगरों में रहने वाले तनावग्रस्त मनुष्यों को जीवन की वास्तविक सच्चाई बताकर खुले मन से अपनी जिन्दगी जीने की प्रेरणा देती है तो 'वापसी' कहानी नारी-सशक्तिकरण और औरत को अपने अधिकारों के साथ कर्त्तव्य पालन के लिए प्रोत्साहित

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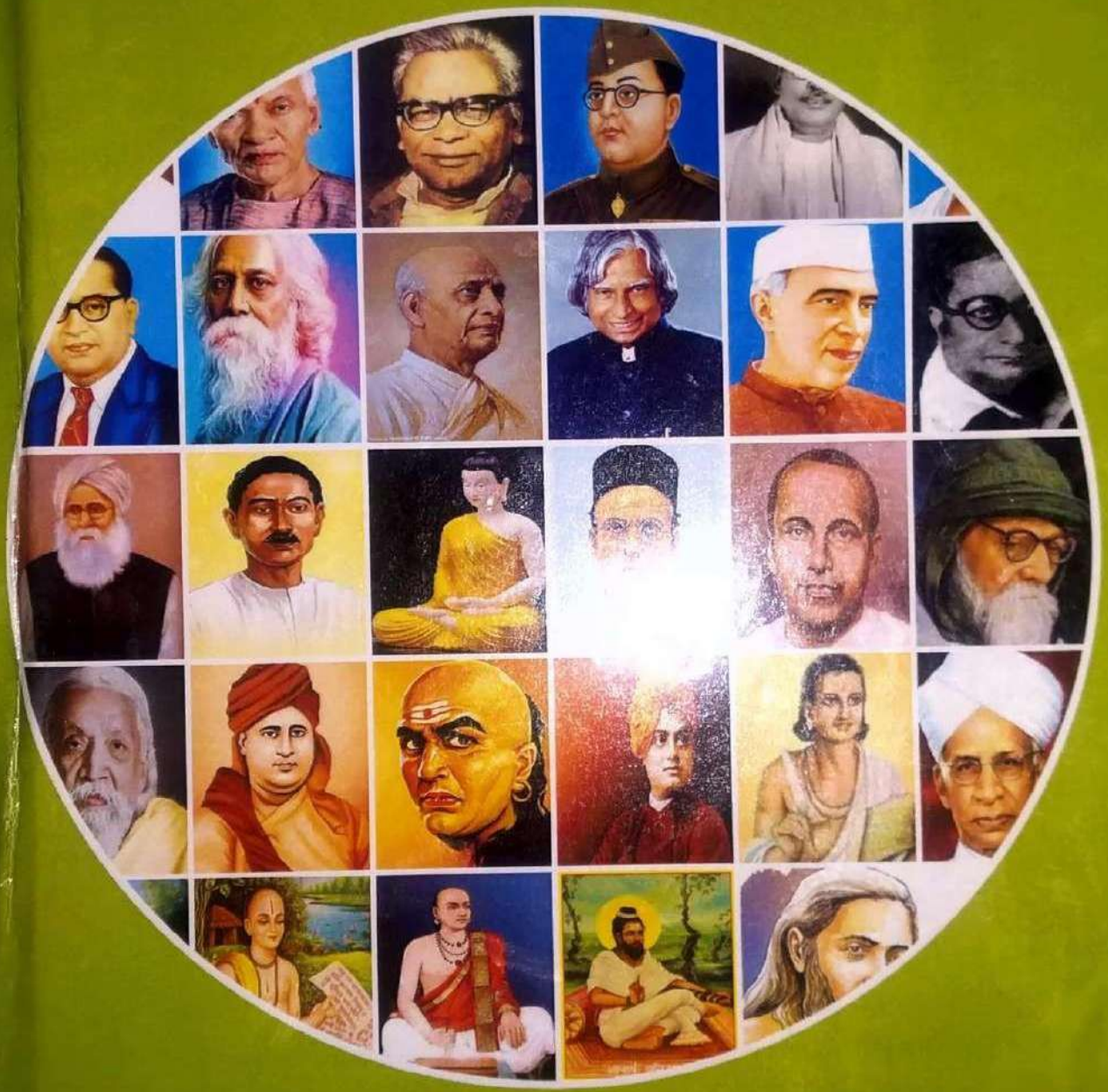
भारत के महान शिक्षाशास्त्रियों, दार्शनिकों, साहित्यकारों एवं महापुरुषों का योगदान



संपादक मंडल

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जे.टी.एस. पब्लिकेशन्स, दिल्ली

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प्रकाशक

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बी-508, गली नं०17, विजय पार्क, दिल्ली-110053
दूरभाष : 08527 460252, 09990236819
E-Mail : jtspublications@gmail.com

ब्रांच ऑफिस

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मूल्य : [illegible] रुपये

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First Page of Published Chapter "Mahaan Sahitkaar JayaShankar Prasad ka path Pardarshan
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प्रतिष्ठित हस्ताक्षर जयशंकर प्रसाद आधुनिक हिन्दी-साहित्य के महान एवं उच्च-कोटि के साहित्यकार हैं जो भारत के कालजयी रचनाकारों में अग्रगण्य हैं। उनमें चिन्तन-मनन की अपार गम्भीरता के साथ-साथ भावानुभूति की प्रगाढ़ता है। जयशंकर प्रसाद सफल नाटककार, क्रान्तदर्शी कवि एवं महान कथाकार है। इनका साहित्य-सृजन लोकमंगल, राष्ट्रीय भावना, प्रेम व त्याग, नारी-सशक्तिकरण, सांस्कृतिक पुनरूत्थान, सामाजिक शिष्टाचार, मानवतावाद, समरसता एवं नैतिक मूल्यों से ओत-प्रोत है, जो अतीत से जुड़े रहकर भी आज के लिए उपयोगी एवं प्रासंगिक है।

महान साहित्यकार जयशंकर प्रसाद कृत 'आकाशदीप'कहानी का केन्द्रबिन्दु निस्वार्थ भाव से 'मानव-सेवा' है। इस कहानी की नायिका चम्पा अपने आप में आकाशदीप है, उसका नि:स्वार्थ प्रेम समर्पण व त्याग की मूर्त, आकाश की तरह विराट एवं व्यापक और आकाशदीप की भाँति दूसरों का पथ-प्रदर्शन करने वाला है। इस कहानी का पात्र बुधगुप्त जोकि एक जलवदस्यु है, उसमें हिंसात्मक, क्रूरता जैसी प्रवृतियाँ है, परन्तु चम्पा का प्रेम उसे कोमल, उज्ज्वल मनोवृत्ति वाला एवं कई द्वीपों का स्वामी बना देता है। चम्पा का पहला प्रण था कि जिसने उसके पिता की हत्या की है वह उससे प्रतिशोध लेगी, जब उसका प्रेम बुधगुप्त से होता है वह इस बात से अनभिज्ञ होती है कि वह ही उसके पिता का हत्यारा है। इस सच का ज्ञान होने पर कि बुधगुप्त, उसके पिता का हत्यारा है और दूसरी तरफ वह उसका प्रेमी भी है तो चम्पा, बुधगुप्त और प्रतिशोध की भावना दोनों का त्याग कर 'चम्पा' नामक द्वीप में आजीवन रहकर वहाँ के द्वीपनिवासियों की सेवा-सुश्रुषा करती है। यहाँ पर जयशंकर प्रसाद एवं कवि रामधारी सिंह की प्रतिशोध को त्यागने की भावना समान हो उठती है जैसे कि कवि दिनकर कहते हैं कि-

"मानव मन को बेधते फूल के दल कोमल,
आदमी नहीं कटता बरशों और तीरो से,
लोह की कड़ियों की साज़िश बेकार हुई,
बाँधों मनुष्य को शबनम की जंजीरों से।"[1]

और दूसरी तरफ 'आकशदीप' कहानी की नायिका चम्पा से मुख से लेखक जयशंकर प्रसाद कहलाते हैं कि ''बुधगुप्त आज मैं अपने प्रतिशोध का कृपाण अतल जल में डुबो देती हूँ। हृदय ने छल किया बार-बार धोखा दिया।"[2]

उक्त दोनों उदाहरणों में प्रतिशोध की भावना को त्याग कर प्रेम के मार्ग पर चलने का प्रत्यक्ष एवं परोक्ष संदेश दिया गया है। 'आकाशदीप'अर्थात् चम्पा का प्रेम रूपी प्रकाश है जो पितृप्रेम से प्रेमी के प्रेम और प्रेमी के प्रेम से सम्पूर्ण मानव जाति के लिए समर्पित हो जाता है।

' स्वर्ग के खण्डहर में' कहानी में आचार्य शेख द्वारा बनाए सुख-सुविधाओं, ऐश्वर्य व आनन्द रूपी स्वर्ग के खण्डहर होते हुए दिखाए गए हैं। स्वर्ग के खण्डहर होने का कारण अमर्यादित, अनैतिक, ऐश्वर्ययुक्त, परिश्रमहीन एवं अकर्मण्यता है। कहानी में 'स्वर्ग पूंजीवाद और पृथ्वी समाजवाद का प्रतीक है। उदाहरणार्थ: ''स्वर्ग। इस पृथ्वी को स्वर्ग के ठेकेदारों से बचाना होगा। पृथ्वी का गौरव स्वर्ग बन जाने से नष्ट हो जायेगा। इसकी स्वाभाविकता साधारण स्थिति में

First Page of Published Chapter "Pracheen Shiksha Pranali ka Swaroop, uddeshya evam Arvacheen Upadeyta
"

प्राचीन शिक्षा-प्रणाली का स्वरूप, उद्देश्य एवं अर्वाचीन उपादेयता

डॉ. नवीन चंद
सहायकाचार्य, संस्कृत-विभाग,
एस॰ एल॰ बावा डी॰ए॰वी॰ कॉलेज,
बटाला-143505

प्राचीन काल से ही शिक्षा मनुष्य के सर्वांगीण विकास का माध्यम रही है। शिक्षा शब्द को व्यापक एवं संकुचित दोनों रूपों में व्यवहार में लाया जाता है। व्यापक रूप में शिक्षा मनुष्य के आत्मिक विकास की वह गति है जो जन्म से लेकर मृत्यु-पर्यंत चलती रहती है। संकुचित अर्थ में शिक्षा का तात्पर्य जीवन की उस अवस्था विशेष से है, जिसमें मनुष्य निश्चित अवधि में गुरु के सान्निध्य में अथवा शिक्षण-संस्था में अपेक्षित ज्ञान को प्राप्त करता है। शिक्षा ज्ञान-प्रकाश का वह स्रोत है जिससे मनुष्य सभी अर्थों को समझने में समर्थ हो जाता है।

क) प्राचीन भारत में शिक्षा का स्वरूप- शिक्षा पद की निष्पत्ति शिक्ष् धातु से होती है जिसका अर्थ है, विद्या को प्राप्त करना (शिक्ष् विद्योपादाने)[1]। छात्र किसी भी माध्यम से, गुरुजनों से, स्वाध्याय से अथवा अपने अनुभवों से जो कुछ सीखता है, वह विद्या के अंतर्गत आता है। शिक्षा पद का प्रयोग प्राचीन काल में एक विशिष्ट अर्थ में किया जाता था।

स्वरवर्णाद्युच्चारणप्रकारो यत्रोपदिश्यते सा शिक्षा[2]।
वर्णः स्वरः मात्रा बलं साम संतानः इत्युक्तः शिक्षाध्यायः[3]।।

अर्थात् स्वर तथा वर्ण के उचित उच्चारण के ज्ञान प्राप्त करने को शिक्षा कहते हैं। वेदों के सुस्वर पाठ को महत्त्व दिए जाने के कारण उस काल की शिक्षा को ऐसा नाम दिया गया था। इस प्रयोजन के लिए अनेक ग्रंथों की रचना हुई जैसे पाणिनीय शिक्षा इत्यादि। प्राचीन काल में शिक्षा के अंतर्गत चरित्र-निर्माण को अधिक महत्त्व प्रदान किया जाता था। 'विद्या ददाति विनयम्' इत्यादि उक्तियाँ इसकी स्पष्टतया द्योतक हैं। स्वामी दयानंद के अनुसार 'जिस से विद्या, सभ्यता, धर्म, जितेन्द्रियता

Front Page of Book

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Sushma Gupta

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First Page of Published Chapter "Utilizing Rice Stubble: The Organic Way"

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Utilizing Rice Stubble: The Organic Way

Dr. Manjula Uppal

Abstract:

Rice stubble, a residue of rice' produce can be and should be exploited in usefully right manner to create compost, bio-fuels i.e. ethanol, and fodder for live stock through the already worked out technologies rather than burning it in agrarian land to curb down the increasing level of pollutants for the survival of mankind in a disease free environment.

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Rice straw is the vegetative part of rice plant (Oryza sativa), cut at grain harvest or after and is a major forage in rice-producing areas. It may be burned or left in the field before the next ploughing, ploughed down as a soil improver or used as a feed for livestock. When rice straw is burned or ploughed under, it may cause air pollution or generate leachates and ploughing under may also propagate fungi. Gainfully utilizing this residue can ease the disposal problem and furthermore, the potential environmental benefits of diverting rice straw from open-field burning will be to significantly reduce criteria air pollutants like VOC, SOx, NOx, and PM 10, and all silica emissions which can be health hazards [1]. Feeding it to livestock reduces its environmental impact and makes the best use of rice as both an energy source and protein provider. Cattle dung can be burned or composted to benefit from rice energy and to enrich soil. Rice straw could be treated in order to improve its nutritive value. These treatments are designed to enhance feed intake and/or digestibility [2]. Improved digestibility may be achieved through mechanical, chemical, heat or pressure

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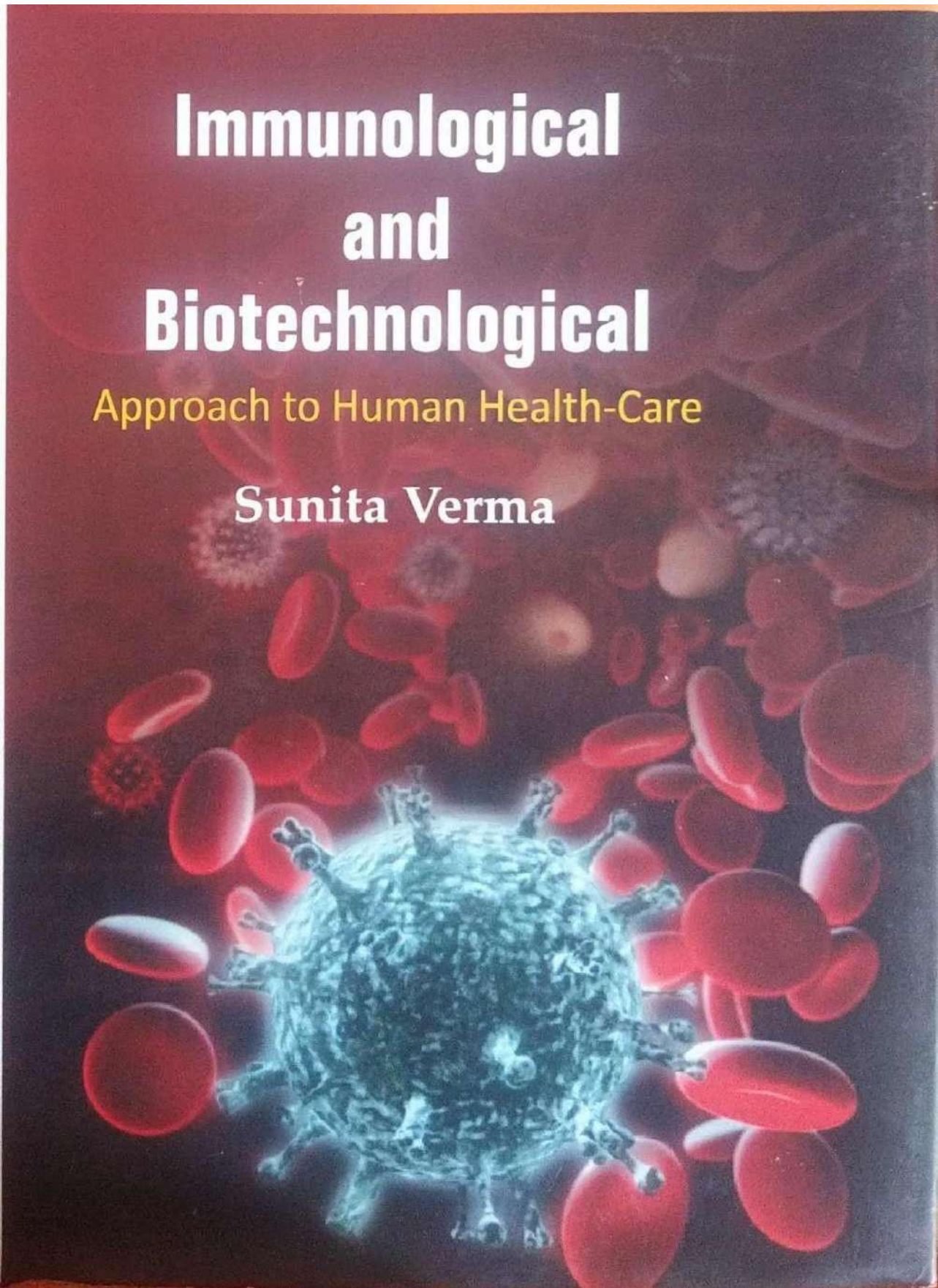

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First Page of Published Chapter "Managing Plastoc Waste:Nature in Process"

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Managing Plastic Waste: Nature in Process

Dr. Manjula Uppal

Abstract: Plastic, the wonder invention of twentieth century over a time period of years has led to the pilling up of a huge amount of non- biodegradable plastic component on the surface of earth and is proving out to be havoc to environment and life diversity. Reduced dependency, reutilization and recycling are being adapted to tackle this problem. A chance discovery of bacterial organisms "Plastispheres" feeding upon plastic waste in the ocean and landfills could be investigated further and incorporated in a big way to rectify these toxic compounds. Benevolence of nature through the process of evolution could become a shield to protect the environment and life diversity against this ever growing giant.

Over the decades with increasing population and reduction in eco-friendly artifacts, a major breakthrough has been taken by the synthetically created non-biodegradable component in the everyday routine articles. Increasing populace bulk has affected the environment and personal hygiene giving a way to throwaway items mainly created out of plastic. Starting from the disposable diapers of children to packaged food, kitchenware and medical equipment, plastic material has shown its predominance.

The first fully synthetic plastic Bakalite, a polymer of phenol and formaldehyde was invented in 1907 by Leo Hendrik Baekland, which did not contain any molecule found in nature. Consisting of a wide range of synthetic or semi-synthetic organic compounds, plastics are malleable and can be molded into solid object of diverse shapes. These are typically organic polymers of high molecular

*Dr. Manjula Uppal, Associate Prof. Zoology, S.L. Bawa D.A.V.College, Batala

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First Page of Published Chapter "Indian Higher Education: Backbone of Economic and Social Development
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Indian Higher Education: Backbone of Economic and Social Development

[1]Roopkiranpreet Kaur, [2]Sumanpreet Kaur
[3]Amandeep Singh, [4]Amandeep Singh
[1]Deptt. of Physics, [2]Deptt. of Mathematics,
[3]Deptt. of History, [4]Deptt. of English,
S.L Bawa DAV College, Batala, Punjab

ABSTRACT

The fundamental factor of development of a nation lies on its education system. The sustainable economic development cannot be achieved without investing in human capital. The huge part of education sector plays is a crucial operator of economic growth of a nation in the long run. Colleges and universities are exceptionally reliable and enduring institutions, firstly because of their mission and appearance in our nation and secondly how they work and are handled. But the ongoing financial downturn is influencing higher education organisations in a wide range of different practices. This paper aims to present a number of such factors which are effecting growth and standards of higher education in India and also include an account on the arguments in support ofinvesting in higher education.

1. INTRODUCTION

The Indian economy is experiencing an extensive evolution. A shift is ongoing from the drilling manufacture boom era-in which momentous assets were applied to the growth of our natural resources-to a new chapter in our history. We are now encountered with the challenge of expanding our economy and snatching new hopes by modernisation, venture capital and large scale assimilation within our region. The advancement of our human capital-the intelligence and astutes of our people-is now a significant matter of India's economic growth into the future.

It is accepted throughout the world that financing higher education is a great step for the growth of economy and society. large investment in universities enhances the character and number of highly educated graduates. We are currently seeing increasing investment in university based research which elevates productivity and the quantity of highly skilled research scholars (PhD's). These scholars take their skill and experience to forthcoming employers and play a main role in the the growth of nation's economy. A society with a large number of highly educated people enjoys better general health and civic involvement. Irish universities have confirmed that the advancement of society and increasing economic growth is dependent upon level of investment in higher education at 3rd and 4th level [1].

In recent years there is acceptance that India's contribution to international advancement of research and learning is in decline. There is not even a single university

First Page of Published Chapter "Indian Education Policies versus Higher Education in India

Indian Education Policies versus Higher Education in India

Rajeev Mehta
PG Deptt. of Computer Science
S. L. Bawa DAV College, Batala-Punjab.

ABSTRACT

Higher Education scenario in any country depends on the Education policies of that country. India is a developing country and is following its own education policies. The National Policy on Education (NPE) is a policy formulated by the Government of India to promote education amongst India's people. The policy covers elementary education to colleges in both rural and urban India. The first NPE was promulgated in 1968 by the government of Prime Minister Indira Gandhi, and the second by Prime Minister Rajiv Gandhi in 1986. The government of India has appointed a new committee under K. Kasturirangan to prepare a Draft for the new National Education Policy in 2001. After the independence of India, decade after decade, government is revising education policies, so higher education is effecting day by day.

Introduction:

Policies are part and parcel of almost all the countries across the globe. India is one of the countries which has been working on a number of education policies since long. A policy is a deliberate system of principles to guide decisions and achieve rational outcomes. In short, it is a statement of intent, and is implemented as a procedure or protocol.

Since the country's independence in 1947, the Indian government sponsored a variety of programmes to address the problems of illiteracy in both rural and urban India. Maulana Abul Kalam Azad, India's first Minister of Education, envisaged strong central government control over education throughout the country, with a uniform educational system. The Union government established the University Education Commission (1948-1949), the Secondary Education Commission (1952-1953), university Grants Commission and the Kothari Commission (1964-66) to develop proposals to modernise India's education system. The Resolution on Scientific Policy was adopted by the government of Jawaharlal Nehru, India's first Prime Minister. The Nehru government sponsored the development of high-quality scientific education institutions such as the Indian Institutes of Technology. In 1961, the Union government formed the National Council of Educational Research and Training (NCERT) as an autonomous organisation that would advise both the Union and state governments on formulating and implementing education policies.

In the year 2016, India government did major changes in the education policy and

First Page of Published Chapter "Higher Education System Issues, Challenges and Lack of Job

Higher Education System Issues, Challenges & Lack of Job Opportunities in India

Sukhwinder Singh
Assistant Professor
P.G. Department of Computer Science & IT
S.L. Bawa DAV College, Batala

ABSTRACT

Education System is very important for the development and growth of every country. The human mind makes possible all development achievements; there is no better tool for doing so than education. But as our higher education system is collapsing, other countries are seeing it as an opportunity. Students are searching suitable colleges for higher education. Even though the country has many reputed Universities, Institutions and College; many of the students going abroad every year for higher education and jobs. Today's scenario is now most of the students are going abroad after plus two for study and for better future. Students feeling their education did not significantly contributing in their employment. Young students don't find the teaching profession attractive .This is the failure of Indian education system. Perhaps abroad Universities seem to have a more definite plans and job opportunities for Indian students than India.

Keywords: Higher Education, Young students, Opportunities.

Introduction:

Education System is very important for development and growth of every country, no tool is better than it. But the Indian Higher Education System does not provide good job opportunities as compare with developed countries. Indian higher education system requires considerable improvements or government provides better job/business opportunities for students. Every year students are going to abroad for further study and for better future. Some of the students losing their interest in education as the government does not have good future plans for them.

Budget allocation by Government of India as per 2012 plan was about 6 % but minimum 10 % required to improve the scenario. Higher education dominated last year's education budget with an increase of 13% over the 2015-16 budget with policies for improving the quality and ranking of higher education, creation of a higher-education financing agency, and approval of new higher-education institutes-even though only 34.2 million enrolled in higher education institutions in 2014-15 or, a seventh or fewer than those enrolled in school. In contrast, the school education and literacy budget increased 3.2% in 2016-17, compared to 2015-16 revised budget estimates, according to union budget data. Over the financial year 2016-17, the central

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OSTEOPENIA AND OSTEOPOROSIS IN YOUNG ADULTS

(A Study of Distt. Gurdaspur)

Dr. Manjula Uppal

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Simulation of Terahertz Propagation by TE Mode in Metal Dielectric Metal Waveguide

Roopkiranpreet Kaur[1,2] , Manpreet Kaur[1,3] , P. C Agarwal[4] , Sukhdeep Kaur*[1] and Gagan Kumar[5]

[1]*Department of Physics, Guru Nanak Dev University, Amritsar, 143005 Punjab, India*
[2]*S.L.Bawa D.A.V College, Batala 143505, Punjab, India*
[3]*Government Middle School, Raunt,, Jalandhar, 144701, Punjab, India*
[4]*Regional Institute of Education, Bhubaneswar, 751022, Orissa, India*
[5]*Department of Physics, Indian institute of Technology Guwahati, 781039, Assam, India*
I. *e-mail-sukhdeep.iitd@gmail.com*

Abstract- **We examine the propagation of terahertz multimode in a metal dielectric metal (MDM) waveguide. In this structure, terahertz radiation propagates through the vacuum region sandwiched by two thin metal plates. At terahertz frequencies metallic plates acts as a perfect electric conductor. Different modes like transverse electric (TE) and transverse magnetic (TM) and multiple modes propagate which depends upon the plate separation and polarisation of incident wave. The TE mode propagation is studied analytically and numerically. Another structure where metallic plates are replaced by semiconductor plates, Surface Plasmon Polariton (SPP) modes are observed propagating through the waveguide. The proposed study is important in developing terahertz devices, such as sensors and modulator**

I. INTRODUCTION

With invention of terahertz sources and receivers which receives sub-picosecond pulses, the propagation characteristics of these waves have attracted much interest [1]. THz propagation in guided and confined manner is required in its various applications. Waveguide technologies for both microwave and infrared spectral regions have been explored for THz guiding system. Various guiding systems such as coplanar waveguide, non-planer waveguides including metallic and dielectric waveguides have been studied for THz wave propagation. Various applications of THz radiations including spectroscopy [2], sensing [3] and signal processing [4] are based on these wave guiding techniques. Although the above mentioned waveguides are widely used but a complete solution to THz guided wave propagation is still lacking which can offer low loss, good confinement and low dispersion.

Parallel plate waveguide (PPWG) which is considered best of its kind have been employed for various applications of THz radiations [5]. Both TE and TM mode propagation is supported by these waveguides. Lowest order TM mode is usually preferred for PPWG because of its zero frequency cut off which leads to low group velocity dispersion and low loss but the confinement of this mode is an issue of concern. Another possible solution is the TE mode propagation. Various studies done for mid-infrared region in 1970's have signalled the possibility of realising TE_1 mode propagation with low loss and good confinement [6, 7]. The TE mode in PPWG has been found to play an important role in THz technologies. It can be used as a dielectric medium whose refractive index can be varied between 0 and 1 [8]. TE_1 mode is the perfectly coupled mode from a linearly polarised free space Gaussian beam, whereas Astley et. al.[9] has studied PPWG resonant cavity by using mode matching technique and they have found that TE_1 mode is required for better coupling to a cavity of this type. Karl et al [10] demonstrated PPWG as leaky wave antenna. In their work, they found that the lowest order TE mode is employed to realise the leak behaviour of PPWG. Kaur et. al. have studied TM mode propagation through parallel plate waveguide using FDTD simulations [11]

These mentioned applications of TE mode have motivated us for this study. THz propagation by TE mode has not been explored far. In this paper we have done analytic calculation followed by numerical calculation to study the propagation of TE mode an MDM waveguide which is similar to PPWG. Also we have studied this structure by using semiconductor plates and have examined the excitation of SPP which propagates by TM mode. The paper is organized as follow: Theoretical model of the proposed structure is given in section II. In the next section III, we studied the spectra of transverse electric modes, obtained after Fourier transformation of time domain data collected at the end of waveguide. We have also shown electric field profile of different modes and in section IV semiconductor dielectric semiconductor (SDS) waveguide is studied and then followed by result and conclusion.

II. ELECTRIC FIELD EQUATIONS IN DOUBLE LAYER METAL STRUCTURE

Our proposed structure consisted of two metallic plates separated by air as dielectric with separation distance b

Fig 1: Geometry of MDM waveguide

Assuming the propagation direction along x-axis, electric field and magnetic field equations are written in the air filled region of structure as

$$s(x, y, z, t) = s(y, z)e^{i(mt-Qx)} \quad (1)$$

$$H(x, y, z, t) = H(y, z)e^{-i(mt-Qx)} \quad (2)$$

Following Maxwell's equations,

$$\times s = -im\mu H \quad (3)$$

$$\times H = ims E \quad (4)$$

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Simulation of terahertz multimode propagation in parallel plate waveguide of metal

Sukhdeep Kaur*[1], Manpreet Kaur[1], Roopkiranpreet Kaur[1] and Gagan Kumar[2]

[1] *Department of Physics, Guru Nanak Dev University, Amritsar 143005, India*
[2]*Department of Physics, Indian institute of Technology Guwahati, Assam-781039*
e-mail-sukhdeep.iitd@gmail.com

***Abstract*- We examine the propagation of terahertz multimode in a parallel metal plate structure. In this structure, terahertz radiation propagates through the vacuum region sandwiched by two thin metal plates. At terahertz frequencies it acts as a perfect electric conductor. Different modes like transverse electric (TE) and transverse magnetic (TM) and multiple modes propagate which depends upon the plate separation. The TEM mode propagates with low loss. The proposed study is important in developing terahertz devices, such as sensors and modulator.**

I. INTRODUCTION

With the invention of terahertz (THz) radiations, the frequency gap between microwave (300 MHz to 300 GHz) and infrared region (10 THz to 400THz) which is known as THz gap has been bridged. It has been left unexplored due to the absence of adequate coherent sources. Terahertz waves, also known as sub millimeter radiation, have drawn a significant attention in the scientific community from last two decades. Generation and detection of THz radiation ranging from 0.1 THz to 10THz has evolved. Recently, THz wireless communication and remote sensing is an also one of the crucial step because it requires confinement and guiding of propagating wave. Over the time, THz radiations have become one of the frontier area of the research which is significant for a lot of valuable applications in the field of telecommunication [1], the quality check of products [2], material and chemical characterization [3], security screening [4] and imaging in medical field i.e. 3D imaging of the teeth [5] etc.

Various waveguides including coaxial lines [6], parallel plate configuration [7], corrugated waveguide [8], dielectric slabs [9], cylindrical wire waveguide [10], plastic ribbon [11], single crystal sapphire fibre [12] and the parallel-plate waveguides [13] are used to study propagation properties of THz radiations. For low loss and low group velocity dispersion, double metal layer structure is one of the most demanded structure which works as a waveguide. In this waveguide, two plates made up of metals placed parallel to each other and separated by a dielectric medium or vacuum. Iwaszczuk *et al.* [14] have investigated the imaging of electric field of THz radiations propagating inside double metal layer structure through a non-invasive broadband method. Lee *et al.* [15] have investigated single and multimode propagation of terahertz radiation propagation in parallel plate waveguide (PPWG). The higher mode with higher group velocity dispersion propagates when one approaches to cut off frequency. Mendis & Grischowsky [16] have reported that PPWG can support TEM mode which offers low loss and low group velocity dispersion due to its zero cut off frequency. Mendis & Mittleman [17] have investigated that TE_1 mode can be excited in PPWG by an input Gaussian beam without exciting any other higher modes. Thus, a single mode propagation can be achieved when separation between plates are of the order of 1/e diameter of Gaussian beam. The TE_1 mode in PPWG has been found to play an important role in THz technologies [18]. It can be used as a dielectric medium whose refractive index can be varied between 0 and 1 [19]. They have experimentally demonstrated that TE_1 has a very remarkable property and found that propagation loss decreases when frequency increased above the cut off. So we can reduce the loss by shifting cut-off frequency to lower frequencies which can be done by increasing plate separation without any risk of multimode propagation.

The motivation of this work is that these guiding structures are being extensively studied in THz technology. Therefore, we have analyzed THz propagation in a double layer metallic structure where metal is assumed to behave as perfect electric conductor (PEC), which can be used in various applications of THz propagation. The paper is organized as follow: First, theoretical model of the proposed structure is given in section II. In the next section III, we studied the spectra of transverse modes, obtained after Fourier