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## RESEARCH ARTICLE

# CHANGES IN PLANT GROWTH AND PROTEIN CONTENT OF SOME LEGUME CROPS GROWN ON URANIUM MILL TAILINGS

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Legume plants, Uranium mill tailings,  
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## ABSTRACT

Uranium (U) tolerance potential of locally cultivated six legume crop species namely groundnut, greengram, bengalgram, redgram, cowpea and horsegram grown on U mill tailings was assessed to understand the impact of uranium on plant germination. Percent germination of seeds, plant growth parameters and protein profiles were analyzed using biometry and Electrophoresis methods. Plants were grown on U mill tailings for 30 days under controlled environmental conditions before the analysis. The U mill tailings showed negative impact on morphological parameters such as percent germination of seeds, plant growth, etc. in all the six legume plants grown on U mill tailings. During the study, greengram, showed best tolerance, redgram showed moderate to leranceand horsegram showed least tolerance under U stress among the six legume crop species studied. Protein profiles of the three legume species (greengram, redgram and horsegram) grown on U mill tailings were studied by SDS-PAGE.

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## INTRODUCTION

Heavy metal mining leads to accumulation of toxic material mostly extracted wastes in the neighbourhood of mining industries. Heavy metal extraction left overs such as such as copper, zinc, lead, Uranium tailings have higher impact on the flora and fauna and could be be toxic to the organisms (Antonovics *et al.*, 1971). The reclamation of toxic heavy metal wastes is by utilising heavy metal tolerance of plants (Wu, 1990). Various tolerant species of grasses and legumes are used as herbaceous plants for initial coverage on disturbed land (Day and Ludeke, 1981). Exploration of legume species that are able to colonize in metal enriched soils for use in land reclamation has been on interest in research (Day and Ludeke, 1981). Besides legumes are well known to enhance the nitrogen status of the soil through atmospheric nitrogen fixation. Evolution of heavy metal tolerance is known to be a complex mechanism than in non-legumes (Wu and Lin, 1990). Since various plant species exhibit various levels of tolerance to heavy metals, the current study was undertaken to identify the U tolerance levels of six legume species on exposure to U mill tailings and examination of germination, growth ability and protein profiles of the selected legume species based on their performance on U mill tailings. Uranium is a naturally

occurring chemotoxic radionuclide and a heavy metal present in mineral form. Active anthropogenic activities such as mining enhanced the uranium levels in domestic areas and cultivated lands (Vandenhove, 2002). Uranium mills that process the excavated uranium ores leave a bulk of radioactive wastes such as U mill tailing dumpings. These result in short and long term pollution hazards due to presence of traces of uranium isotopes, its radioactive successors and stable toxic elements. Published Studies of Vandenhove *et al.*, 2006; Vanhoudt *et al.*, 2008 have shown that alterations of growth development and oxidative stress is an important response mechanism under uranium stress.

## MATERIALS AND METHODS

### Maintenance of Plant species and induction of heavy metal stress

U mill tailings were collected from Uranium extraction plant (UCIL), Thummalapalle, sited 15 km from Pulivendla in YSR Kadapa district, Andhra Pradesh, India. Legume crop species, namely Groundnut (*Arachis hypogea* L.), bengalgram (*Cicer arietinum* L.), cowpea (*Vigna unguiculata* (L.) Wilczek), horsegram (*Macrotyloma uniflorum* (Lam.) Verdc.) and redgram (*Cajanus cajan* L.) seeds were procured from Regional Agricultural Research Station, ANGRAU, Rekulakunta, Anantapur dist., A.P., India. Seeds were sown in

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## GROWTH OF TELECOM INDUSTRY IN INDIA

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### ABSTRACT

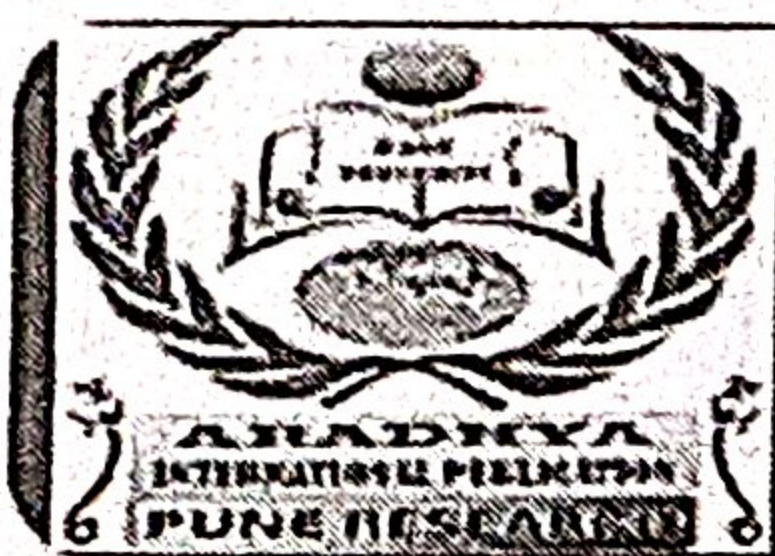
*India's economic liberalization programme that began in 1991 and aimed at raising the economy from low – growth equilibrium and putting it on a sustained growth path targeted a wide range of sectors – from international trade to finance and infrastructure. Growth of a world class telecommunication system in the country was inevitable to meet the demands of the economic and it becomes a necessity rather than a luxury in the globalized scenario. The economic policy forced the Indian government to shift telecommunications secondary status to priority status. As a result after 1990, India witnessed a paradigm shift in telecommunication policies. Further in the early 1990's due to technological changes and challenges of globalization, the natural monopoly in the telecom sector was challenged in countries like USA and UK<sup>1</sup>. This resulted in the growth of both private and public telecom sectors worldwide which led to competition and greater consumer welfare.*

#### **Fixed line:**

The fixed line subscriber base which was 26.66 million in 1999.00 has just doubled by 2006 and then declined to 40.3 million by the end of 2006, and further declined to 28.50 million by 2013-14 and registered negative growth rates, after 2005 ranging between 3% to 6%. Share of different service providers are BSNL maintained nearly 85% share in total fixed phone sector upto 2003-04, but from 2005-06 onwards BSNL lost its share -12% relegated to the 65% by 2013-14. Whereas MTNL maintained its share of 10% from 2003-04 upto 2013-14, among private players Airtel has increased its share from just 1% in 2002-03 to 12% by 2013-14. Other important players are HFCL Infotel and Shyam Telelinks accounted for 5% by 2013-14.

#### **Mobile Cellular:**





## IMPACT OF REFORMS IN THE TELECOM SECTOR IN INDIA

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### ABSTRACT

*The process of telecom reforms in Independent India began in the year 1980, with an attractive slogan "Mission Better Communication". In the year 1984, for the first time, private manufacturing of customer premise equipment was allowed. Until then the Government Department of Telecommunication (DoT) enjoyed the monopoly of manufacturing equipment. In 1986 for better management and easy operations, the DoT gave birth two large Government owned corporate bodies called Mahanagar Telecom Nigam Limited (MTNL) and Videshi Sanchar Nigam Limited (VSNL). The MTNL provide basic services in Mumbai and Delhi to treat differently, VSNL provides overseas long distance services.*

### INTRODUCTION

In 1989 a Centre for Department of Telemetric (C-DoT) was established which took active part in the installation cheap rural branch exchanges to serve the rural areas. This result during this decade a wide network of 'Public Call Office' (PCO) especially to provide local and long distance direct dialing to the largest number of people was undertaken on a large scale across the country through private individual franchises. As a result 140000 of 576000 villages of India had telephone connections by 1990. But these rural connections were of low quality and the wait time for new connection extended from seven to eight years. The charges to get a telephone connection and tariff charged to make a long distance call were the highest in the world. Thus the above reforms failed to contribute the expected returns to the economy.

### Reforms-1992

The liberalization of the economy and the announcement of a new economic policy in the year 1991 opened the telecom sector gates to private players.

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## THE CONCEPT OF HINDUISM AND SOCIAL PROGRESS IN SAHGAL'S FINCTION

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### ABSTRACT

*The word 'Hindu' doesn't find its appearance in any of the original scriptures of the Hindus, compared to Christianity and Islam doctrines which have come into existence in a defined form by God to a particular person at a particular time and place. Religious doctrines in Hinduism are realized and expressed through a gradual process of reflection by different individuals, covering many centuries. Through gradual evolution, a wide spectrum of beliefs and rituals have got assimilated into the body of Hinduism. As there is no clear definition for the idea of god-hood in Hinduism, various creeds or cults which are considered divine manifestations complementing each other, orient to the infinity of truth and well-being of human race. The basic truth underlying Hindu religious evolution is that truth is unique but its interpretation is many sided. When compared to Islam or Christianity, Hinduism remains vague. Hinduism does put forward certain key concepts despite its doctrinal vagueness.*

### INTRODUCTION

What is called 'Hinduism' is the present day could not be destroyed as no invader or foreigner or practicing Hindu could explore Hinduism in depth. Its roots are embedded in mysterious sources. Its branches invaded space. Hinduism is all – pervasive, all – inclusive and percolating into depths. The peculiar feature of Hinduism is that it does not lend itself to be fitted into any rigid pattern or framework. Unlike the other great religion of the world; Islam and Christianity, it does not have one founder, one scripture, or one way of life. It is precisely due to this reason that it is sometimes dubbed, not as a religion, but only as a way of life or just a culture. S. Radha Krishnan expresses the same view that "Hinduism is more a way of life than a form of thought"<sup>1</sup>

Hinduism is a progressive historical moment in the making. Its adherents are not custodians of a deposit, but runners carrying a lighted torch. The weaknesses of the Hindu faith which have drawn the institution into disgrace and have become obstacles blocking the way for

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## **INFLUENCE OF GANDHIAN PRINCIPLES ON SAHGAL'S NOVELS**

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### **ABSTRACT**

*Lect. In English, It is a great wonder that an empire of the size of Great Britain was overthrown with S.K.P. Govt. Degree College, sheer non-violence. But it happened to our astonishment; not a drop of blood was shed in Guntakal. this political movement. Then, what kind of violence could be there? The answer is that the Anantapuramu Dt. truth of which Gandhi was a great aspotle, indeed. He experimented it in Africa with success. He defeated the ogre of imperial violence through Satyagraha, 'insistence on truth' as it is called. It adorned the subtle weaponry of the Mahatma. Imbued with Christian Virtues, Hindu and Buddhist Philosophy, he attained the status of a saint who was worshipped by the masses.*

### **INTRODUCTION**

To a world lost in error and beset by the illusions of time, Gandhi expounds the value of the timeless principles of the truth of God and believes that the love for fellow-men is the only basis to establish right human relationships. The inspiration of his life has been what is generally called religion, religion not in the sense of strict adherence to dogmas or complete affiliation to ritual but religion in the sense of an abiding faith in the absolute values of truth, love, and justice and a persistent effort to realize them on earth. Through prayers, fasts and the practice of love, he controlled the inconsistencies of his flesh and discursiveness of his nature to carryout God's work. He also understood that all religions at their best prescribe the same discipline for man's fulfillment. For Gandhi, religion was a personal involvement in the life of spirit. He was keenly sensitive to the pain of the world and longed 'to wipe every tear from every eye'. He believed in the sanctification of all life. 'Politics divorced from religion' was, for him, 'a corpse, fit only to be burned'.

To a people suppressed and humiliated for centuries by outsiders, he provided a new self-respect, a new self-confidence and a new assurance of strength in them. He took hold of

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## SYNTHESIS OF NOVEL SULTAMS CONTAINING TETRAZOLE HETEROCYCLES

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### ABSTRACT

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*Novel Tetrazoles Synthesis of Synthesis of 2-(2-(5-phenyl-1H-tetrazol-1-yl)ethyl)-1,2-thiazetidine 1,1-dioxide (9 a-f) were synthesized by condensation reaction between synthesis of 2-(2-(4-substituted benzylideneamino)ethyl)-1,2-thiazetidine 1,1-dioxide 6(a-f) and a mixture of PCl5 and imidoyl chloride. Synthesis of 2-(2-(4-substituted benzylideneamino) ethyl)-1,2-thiazetidine 1,1-dioxide 6(a-f) was condensed with 4-substituted benzaldehyde in absolute alcohol. The synthesis of 2-(2-aminoethyl)-1,2-thiazetidine 1,1-dioxide(4) was synthesized by condensation of synthesis of 1,2-thiazetidine 1,1-dioxide ( $\beta$ -Sultam)(3) a mixture of K<sub>2</sub>CO<sub>3</sub>, TEBA, Acetonitile and 2-chloro*

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*ethanamide. Synthesis of 1,2-thiazetidine-1,1-dioxide( $\beta$ -Sultam) (3) was synthesized with Taurinesulfonylchloride (2) with Na<sub>2</sub>CO<sub>3</sub>, Ethyl acetate. Taurinesulfonylchloride (2) was synthesized by S-S bond cleavage Cystaminedihydroxychloride (1) with mixture of Chlorine gas, Chloroform and Ethanol solvent mixture.*

**KEYWORDS:** Sultam, Tetrazole, Cylization, Antibacterial and antifungal activity.

### INTRODUCTION

Tetrazoles and its derivatives are associated with a variety biological activities such as Antifungal[132], antinociceptive[134-135], anti convulsant[136], antidiabetic[137], cyclo-oxygenase inhibitors[138], hypoglycaemic[139], antibacterial[140] and anti-inflammatory[141] activities. Tetrazoles are used as catalysts in the synthesis of phosphonates.

Cyclic sulfonamides (sultams) although not found in nature[1] have also found applications in drug development. Examples of biologically active sultams include the antiepileptic agent



# Portrayal of heinous issues in Mahesh Dattani's plays - A special focus on *On a Muggy Night in Mumbai*.

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## Abstract:

Mahesh Dattani brings controversial issues like homo-sexuality, gay culture, hijra marriage, lesbianism, hetero-sexuality, bi-sexuality and dreaded diseases like HIV positive into the orbit of Indian English drama. He portrays homo-sexuality and hetero-sexuality in his plays like *On a Muggy Night in Mumbai*, *Bravely Fought the Queen*, *Thirty Days in September* and *Do the Needful* etc., These issues are no more marginalised but they occupy the central stage in most of his plays. Same sex love is treated as unusual and invisible content in Indian context. Dattani in some of his plays tries to identify grey areas to which Indian society is yet to give its due recognition. The theme in '*On a Muggy Night in Mumbai*' deserves to touch the whole of society and to be touched by it. Its a play about society creates patterns of behaviour and how easy it is for individuals to fall victims to the expectations of the society. Dattani dramatises the most heinous issues like child abuse and sexual gratifications in '*Thirty Days in September*'. Dealing with the child incest, the play throws more light on the effects of the forced sexual relations on the individual's psyche, which gets intensified with the passage of time, than the issue itself. In an interview, Dattani asked why the gender issue came up in his plays as most important over class, caste, religion and science and he replied that the gender discrimination is the most visible form of disparity in India.

**Key words:** Lesbianism, heinous, gratification, incest.

## Introduction:

Mahesh Dattani is one of the India's most innovative playwrights in English today. Setting of his plays is embedded within the mechanisms and dynamics of the middle class Indian family. Working within his own limitations the urban Indian audience could easily identify, Dattani is already set on a path very different earlier attempts at staging Indian drama in English. His characters push forward these agendas, touching upon a host of taboo topics and placing it at the forefront for public discussion. He himself denies to be having a tag of an activist and instead chooses the contentious issues in the plays with doses of humour. Dattani not only examines the hetero-sexual relationship critically, he also gives equal importance to same sex relationship in his play '*On a Muggy Night in Mumbai*'. He is questioning the age old belief of marriage being based on heterosexual relationship. He feels that homosexual relationships, lesbian relationships being as natural as hetero-sexual relationship, same sex marriage should be permitted in India and also opines that laws should be made to this effect. Mahesh Dattani also portrays about the plight of hijras which is deplorable in our country. It is an irony of life that hijras who are welcome on two occasions one, at the time of marriage and second one at the time of child birth to sing and dance, are themselves deprived of marriage and childbirth. Dattani has done a meticulous job by introducing a novel theme to Indian English drama.

## Same Sex love relationship:

The play '*On a Muggy Night in Mumbai*', deals with this sensitive subject. While the traditionalists consider such a relationship as something unnatural, obnoxious, the gays think otherwise. They are happy and proud a lot which would even like to assert their true identity and sanctity. The play begins with a conversation between Kamlesh and the guard in Hindi, Dattani without translating their conversation into English, takes recourse to transliteration. This play deals with the sensitive subject of a group of homo-sexuals in Mumbai, their revelations, their changing mutual relationships, their beliefs and self discoveries. Kamlesh is weak and



## Richard Flanagan's the Unknown Terrorist-A Novel about the "War on Terror"- A Critical Elucidation

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**Abstract:** Richard Flanagan, in full Richard Miller Flanagan, Longford, Tasmania, an Australian writer who was known for a series of critically acclaimed works and widely considered the finest Australian novelist of his generation. In the present novel *The Unknown Terrorist*, he delivers a mesmerizing thriller that demonstrates the breadth of his range and vision and it is one of the most brilliant work in the English language today and turns his attention to the most timely of subjects. It is an extraordinary achievement, chilling, impossible to put down, and all too familiar. *The Unknown Terrorist* is an exercise in genre fiction—a thriller that happens to be genuinely thrilling. It's a novel about the state of a nation, its apostrophies, Australian pole dancer called Doll. She finds herself being mistaken for someone else and falling, abruptly down a black rabbit hole, her identity stolen, her daily life torpedoed, her most fundamental expectations about life blown to smithereens or smashed to pieces.

Because of a one night stand with an attractive stranger named Tariq, the Doll suddenly finds herself being hunted by the police and described on TV as part of a Bomie-and-Clyde terrorist team. The Doll not only sees her modest hopes of better life— a life in which she had an apartment and an education and a job that people admired— abruptly erased, also realizes that she has been caught up in a gigantic political and media machine that she is helpless to stop. In a short time (three days) her life has been transformed and now she is running for her life.

Mr. Flanagan has turned the story into an armature for a brilliant meditation upon the post-9/11 world, a globalized world in which fear is a valued commodity for terrorists and governments alike, a world in which rumours and misinformation circumnavigate the globe in flash of an eye. Identity has become a commodity and a construct in this world: something that can be manufactured, stolen or counterfeited.

**Keywords:** *manufactured, globe, war, terror.*

### 1. INTRODUCTION

#### 1.1. Terrorism and its Impact

Terrorism has always overwhelmed human beings all round the world. Every time a terrorist attack takes place somewhere, the whole world seems to stop to glance and amazed as well as scares at the disaster. The torturous and dehumanized practice has become a much powerful weapon; even though the only result we seem to perceive after any attack is a massive fear and an overwhelming pain. It's a universal truth that terrorism is a practice with a deep historical root that has been experienced by all societies and cultures. Its origin date back to Antiquity, when a group of people gathered under the name of Zealots of Judea, also known by the Romans as Sicarri or dagger-men, to carry out the murdering of different Roman occupational forces. But terrorism acquires its name during the French Revolution (1789), in reference to the Reign of Terror initiated by the revolutionary government. During the 19<sup>th</sup> century it was generalized and related to anarchist and national movements. The 20<sup>th</sup> century experienced this phenomenon associated to state violence under extremist group's leadership. And in the young 21<sup>st</sup> century, several terrorist attacks have already taken place threatening the entire world.

#### 1.2. Unusual Suspect

Who are terrorists? Can they be identified with a specific religion, ethnicity or political ideology? Terrorists are Middle Eastern and Muslim; they are intensely antidemocratic. According to Flanagan's novel, they are those "dangerous Islamic types" who want to destroy our way of life. *The Unknown Terrorist* is a fast paced, sexually charged crime story that suggests far more complex reality. Gina





## FOREIGN DIRECT INVESTMENT IN INDIA

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### ABSTRACT

*The investment made by company in new manufacturing and /or marketing facilities in a foreign country is referred to as Foreign Direct Investment(FDI) Investment made by Enron in power plant in India is an example of FDI. The investment made by a company in a foreign country over a given period is called Flow of Foreign Direct Investment the total amount of investment made by a company in a foreign country up to a given time is called The stock of Foreign Direct Investment. Out flow of FDI is called Out flow of Foreign Direct Investment and inflow of FDI is called Inflow of Foreign Direct investment.*

#### Growth of FDI

The flow foreign investment has been increasing during 1975 to 1995 . The FDI increased From US \$25 billion in 1975 to US \$315 billion in 1995. The reason for increase in FDI is due to the desire of many foreign companies to establish manufacturing facilities in foreign countries in spite of decline in trade tariffs and import quotas. The other reason is the significant development of globalisation throughout the world countries

#### Changes in the source of FDI

USA has been the major source of FDI .During 1970s half of the out flow of FDI was held by USA .The second position was occupied by UK .By 1990 Japan occupied by UK 1990 occupied the first position followed by USA.

#### The Recipient of FDI

The host country for foreign investment is the recipient country and a home country is a source country for foreign direct investment .USA occupies the first place in terms of total FDIs and Singapore occupies the first place in terms of FDI per capita (US \$ 13,650) during 1985-95.

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## DERIVATIVES FOR MANAGING FINANCIAL RISK

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### ABSTRACT

*The term derivatives can simply be understood as those items that do not have their own independent values, rather they have derived values. Derivatives have a significant place in finance and risk management. A Derivative is a financial instrument whose pay off is derived from some other Asset which is called an underlying asset. Ex: In case of a stock option the underlying asset is share (stock) of company.*

*The value of stock option depends on the value of share options are more complicated derivatives. There are large number of simple derivatives future or forward contracts or swaps.*

*Firms always look for ways and means of reducing their risk. Derivatives are tools to reduce a firm's risk exposure. A firm can do away with unnecessary parts of risk exposure and convert exposure. A firm can do away with un-necessary parts of risk exposure and even convert exposures into quite different forms by using derivatives.*

### INTRODUCTION

Hedging is the term, term used for reducing risk by using derivatives. There are several advantages of better risk management through hedging.

- Debt capacity enhancement.
- Increased focus on operations.
- Isolated managerial performance

Risk Hedging with Options:

G. SUNITHA

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## ALAMPUR – POPULARLY KNOWN AS DAKSHINA KASI

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### ABSTRACT

*In India we have so many temples and historical sites to know and to see their beautiful art and architecture. Among them Alampur is one. Alampur is a great pilgrimage center and is called a temple town. Its history dates back to the 6th century A.D. A group of nine temples with magnificent and elegant curvilinear Sikharas built by the Chalukyas of Bandami (6th to 8th and 10th to 12th century A D) . They were, t great patrons of art and architecture. These nine temples are popularly known as "Nava Brahma temples". Lard Shiva as Bala Brahmeshwara is the presiding deity and his consort Parvathi is enshrined here in the name of Jogulamba, one of the 8 Shakthies of India[1]. Alampur also finds place in the list of Shakthi Peethas. The town has also a temple dedicated to Yellamma or Renuka, more popular among the rural folk.*

### INTRODUCTION

We have some Buddha, Jain and Vedic religious cave temples and beautiful sculptures. As per historical evidences the first religious constructions were of Buddhism. Buddhists started their constructions in 3rd century BC. Much before the Hindu religious constructions were started. Some historians believe that Hindu religious constructions began some time around 4th century BC.

The rulers of south India, the Shatavahanas and Ikshwakas were basically Hindus. But they encouraged the constructions of Stupas and cave temples of Buddhism. That is the reason why we can't find Hindu religious constructions. Recently the Archaeological survey of India found "Harithy" temple at Nagarjuna konda, which was the edpcational centre for Mahayana Buddhism. By this evidence we understand that in Ikshwakas reign Vedic temples were also in existence. During 6th and 7th century A.D., Pallavas and Chalukyas of Badami strengthened Vedic religion in South India; Whereas Guptas started so many religious constructions in North India. Thus various Vedic religious temples were constructed by these rulers in India.

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## ORIGIN AND HISTORY OF ALAMPUR

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### ABSTRACT

*Andhra Pradesh is always considered as the granary of the south and it has a number of places to live up to its name. For example, Dhanyakataka (now a days it is called as Amaravathi in Guntur district). Dhanya means grain. Methukuseema today's Medak was once known as methukuseema. In Telugu methuku means cooked rice.*

*Halampura Present day Alampur was once known as Halampura. In Telugu, Halam means a plough which is a necessity as an agricultural implement for ploughing the land in cultivation. The name of Andhra Pradesh itself is synonymous with the word 'Annapooma' which means the goddess of food and also the 'Bowl of food grains.'*

### ORIGIN AND THE HISTORY OF ALAMPUR.

In the inscriptions, Alampur it is called Halampura, Hatampura and Alampura Nilaya. As per stalapurana it is called Hemalaptira. However we didn't get the exact evidence as to how the name of Alampur came into being. To go by the Urdu records, Sha-Ali-Pahelvan's grave is there. On this grave we can find the names Alpur and Alampur.

In Gurajala inscription Alampur was mentioned as Halampura. This inscription was collected by Archaeological survey of India and declared by Dr. K.A. Neelakanta Shastry the famous archaeologist.[1]

In 3rd century AD, Gurajala inscription was laid in the period of Rudra Purusha Datta of Ikshwaka. It was laid down in 4th year of his rule. Nadukasiri, the ruler of Ikshwakas donated some land to Halampura in the name of God seeking improvement in his health. Mention was made in this inscription to the above effect. It is believed that this Halampura might have changed as Alampur in course of time. By this it seems that Alampur was a prominent place during the 3rd century A D. As per this Gurajala inscription this Halampura became Hatampura and later transformed into the present Alampur.

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# Determination of fluoride ion concentration in Colgate max fresh using the LED's

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**Abstract-** In this paper, we describe an application of LED's to the determination of fluoride ion concentration in Colgate max fresh. A Sample apparatus using LED's as light source is described. The advantages of this apparatus are its low cost, versatility, and easy to build characteristics.

**Index terms:** LED's, Fluoride ion concentration, Colgate max fresh

## I. INTRODUCTION

Light emitting diodes (LED's) in different wavelengths have many applications in digital readout devices since they provide an inexpensive and easy to use light source in the visible region. Different types of emitting diodes are available in the market and there are different LED characteristics which include the colour light or wavelength, radiation, light intensity. LED's consume less energy.

In instrumental analysis, LED's have several advantages over other light sources. Such as, incandescent lamps, because they emit radiation in the visible region with a characteristic wavelength maximum and bandwidth. Therefore they can be used as visible light sources in provided by a battery, which strongly reduces instrumentation needs and costs. The long life time of LED's in comparison to that of conventional incandescent lamps and the fact that they can be modulated even in the Nano seconds range are further advantages of these light sources.

LED's have characteristic wavelengths emission maximum and band widths. In LED's can be a disadvantage, since without monochromatic or narrow band filters, the measured intensive are due to all the light reaching the deviator, regardless of its wave length. As is well known, this usually gives rise to deviations from the Beer's law.

LF356 IC specifications and information:

- Low input bias current: 30 pA
- Low input offset current: 3 pA
- Low input offset voltage: 1.0 mV
- Temp compensation of i/p offset voltage: 3.0 v/c
- Low input noise current 0.001 pA/HZ
- High input Impedence: 1012  $\Omega$
- High common mode rejection ratio: 100 db
- Large DC voltage gain: 106 db

Applications: LF Series is suggested for all general purpose FET input amplifier requirements where precision and frequency response flexibility are of prime importance.

A present limitation of LED applications in the photometry is that LEDs for only a few visible wavelengths are available so that in principle only species absorbing these can be investigated.

## II. EXPERIMENTAL PROCEDURE

For our instrument, a high brightness blue LED was obtained from a local supplier. A regulated 12V power supply together with a series combination of a 1000 $\Omega$  resistor and a 10k  $\Omega$  potentiometer was used as current source for the LED. The current can be adjusted in the 1-20 mA range, assuming a  $V_f=1.8$ v. A digital multimeter was included to adjust the current available and must always be included to avoid permanent damage to the LED due to an excessive current passing through it.

For a flexible operation, the emitted light was conducted through a fibre optic. A Polymeric type fibre with a 1 mm diameter was selected because of its low cost and low loss at the working wavelengths. The fibre is covered with a black polyethylene cladding. A homemade plastic coupling was used to join the fibre to the LED. The (fig2) indicates detector used was a light to voltage optical sensor this is a very small combining a photodiode and a trans impedance amplifier with a 37 M  $\Omega$  integrated feedback resistor on a single IC (LF 356). The pin configuration of IC LF356 is shown in fig(3). In appearance it is similar to a conventional low power transistor also having three leads used as ground, power supply and output.

A block diagram of the photometer with kuvette (sample holder), LED, power supply and fibre optic is shown in fig (1). The voltage signal produced by the incident light on the photo diode was read by the digital multimeter. Thus intensity data are the primary data obtained. To transform these data into absorbance, a logarithmic transformation is needed. Taking into account the well-known relation of the primary data into the final absorbance values as shown in equation (1)

$$A = \log ((E_0 - E_{\infty}) / (E - E_{\infty})) \quad \text{----- (1)}$$

E = is the potential measured with paste solution placed into cell holder. (Volts)

$E_0$  = is the potential measured with the reference solution (volts). And

$E_{\infty}$  = is the potential in the absence of light (volts).

**Preparation of Tooth Pastes Solution and Determination of Fluoride Ion Concentration:**

0.5690 gm of tooth paste sample was weighed and dissolved in few CC'S of water in a beaker 5 to 6 drops of con HN03 or sulphuric acid is added to the solution. The



# Measurement of Surface Tension by paediatric Medicine Dropper

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## Abstract

The role of surface tension in the formation of drops is described. Surface tension can be measured by using a paediatric medicine Dropper and dripping a liquid from it. A measurements made with simple apparatus are found to agree well with the literature data.

**Index words:** Surface tension, paediatric medicine dropper, digital weighing machine.

## Introduction:

The molecules of a liquid interact through forces of cohesion. Which become weaker with distance and at distances of around  $0.1 \mu\text{m}$  they are effectively zero. Therefore a molecule of a liquid interacts only with molecules that are within its field of cohesion. When the molecule is in a liquid the cohesion the cohesive force is zero, because the surrounding molecules are symmetrically distributed in relation to it. However, a molecule on the free surface of liquid is subject to the prevailing attraction of the underlying molecules of the liquid (see fig no 1). So that the surface acts as a membrane that tends to compress the liquid.

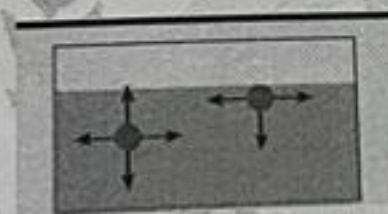


Fig 1: Model of the forces of cohesion acting on an internal molecule and surface molecule.

The free surface of a liquid is the centre of a system of forces directed both downwards and tangential to the surface in order to keep it intact. We can state that in order to increase the free surface of a liquid by an infinitesimal amount  $ds$ . Keeping the general volume constant and operating isothermally, it is necessary to complete an infinitesimal amount of work equal to  $dl$ , in order to constantly balance the system of tangential forces that tends to maintain the same united surface tension ( $t$ ).

$dS = l \cdot dx$ . Where the contour of the surface is labelled  $L$  (see figure 2)

This can be written as

$$T = F \, dx / ds = F \, dx / L \, dx = F / L \quad (2)$$

That is the surface tension represents the force per metre acting on the edge of the surface.

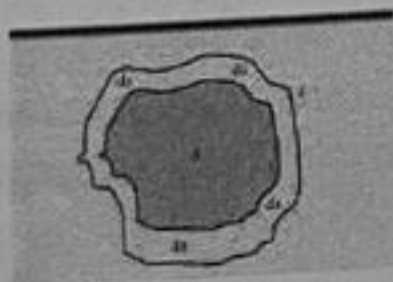


Fig: 2 Increase in a free surface  $S$  from forces perpendicular to the contour  $l$




Esteemed Author

Please accept my heartiest felicitations on very kindly sending your valuable article/research paper titled '**SAT-ISACTION LEVELS OF THE CUSTOMERS IN TELECOM SERVICE PROVIDERS – A STUDY IN ANANTAPURAMU DISTRICT**' for publication in Volume No. 8 (2018), Issue No. 01 (January).

Our editorial board has highly appreciated your invaluable piece of research. The researchers and the academics have conveyed their views and its worth have been appreciated by one and all.

With sincerest regards and profuse thanks for your contribution.

Sincerely Yours

  
Authorised Signatory  
**I.J.R. C. M.**

Success  
has two roofs  
merit & aggressiveness.  
In theory, merit suffices, but  
not in practice ...  
Neither merit nor  
aggressiveness alone avail.  
They must be mixed in the  
right proportion.  
The Secret of success in life is  
for a man to be ready for his  
opportunity  
when it comes.

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ఉద్వేగం : విద్యార్థుల పరీక్షలో ఉత్తీర్ణులైన వెంటనే 1955 జూన్ 13న గుంతకల్లు శ్రీ జగద్గురు పండితారాధ్య ఉన్నత పాఠశాలలో ఆంధ్రోపాధ్యాయునిగా ప్రవేశించాడు. ఈ పాఠశాలలో అందరికీ ఆదర్శప్రాయుడుగా వుంటూ ఆరున్నర సంవత్సరాల కాలంపాటు ఉద్యోగ బాధ్యతను బక్కగా నెరవేర్చారు. తాను ఉపాధ్యాయుడుగా పాఠాలు చెబుతూనే, నాల్గేరులోని ఆంధ్ర విశ్వవిద్యాలయంలో మెట్రిక్యులేషన్ ఉత్తీర్ణుడు కావడం, రాజమండ్రి పండిత శిక్షణ కళాశాలలో పండిత శిక్షణను సంపూర్ణ చేయడం ఆయన విద్యా సముపార్జన తృప్తికు సాక్ష్యంగా చెప్పుకోవచ్చు.

చిత్తూరులో సంస్కృత భాష ప్రచారిణి సంస్థవారు నిర్వహించు 'కోవిద' అను పరీక్షలో చిన్నయ్యగారు ఉత్తీర్ణులయ్యారు. గుంతకల్లు శ్రీ జగద్గురు పండితారాధ్య ఉన్నత పాఠశాలలో 1955 జూన్ 13 నుండి ఆంధ్రోపాధ్యాయుడుగా 1961 డిసెంబరు 22వ తేదీనుండి గుంతకల్లు బాలుర పురపాలకపుర పాఠశాలలో సుశిక్షిత ఆంధ్రోపాధ్యాయుడిగా ప్రవేశించి, దాదాపు 29 సం॥లు పని చేసి 1990 జులై 31న పదవీ నిరమణ గావించారు.

రచనా ప్రేరణ : సాధారణంగా మనపి పుట్టి పెరిగిన కుటుంబంనుంచి పెరిగిన వాతావరణ నేపథ్యంనుంచి, పరిచయస్థుల దగ్గరనుంచి వైయక్తికమూర్తిమత్వం రూపుదిద్దుకొంటుంది.

కుటుంబంలో సాహిత్య వారసత్వం లేకున్నా, కుటుంబ సంస్కారానికి తన ఆలోచనలు తోడై మనస్సే నిమగ్నతాడు. సరిగ్గా దాదన చిన్నయ్య జీవితంలో అదే జరిగింది. దాదన చిన్నయ్య సొంత పూరిక అస్సడప్పుడు పాఠాణికులు వచ్చేవారట. తనకున్న సాహిత్యవాసనలవల్ల వారితో అనుబంధం ఏర్పడింది. ఆ పాఠాణికులు కొన్ని పుస్తకాలిచ్చి చదవమని చెప్పడం, తెలియనివాటికి వాళ్ళే లర్నాలు విడిమిరచి చెప్పడం తంతుగా మారింది. కాబట్టి దాదన చిన్నయ్యకు తొలిగురువులు పాఠాణికులుగా చెప్పుకోవచ్చు. అంతేకాకుండా ఈయనకు ప్రాథమిక స్థాయి ఉపాధ్యాయుడు మల్లాదిక్ష్మిగాడు కూడా అంతే స్థాయిలో చిన్నయ్యకు సహకరించినట్లు, కవిత జరిగిన ముఖాముఖీలో తెలిపారు. దాదన చిన్నయ్యకు సంస్కృతం మీద పెట్టు కలిగడానికి ఈయనే మొదటి కారకుడు. దాదన చిన్నయ్యకు కూడా, ఆయనలాగే రచనలు చేయాలనే తొలి చిరు సంకల్పం బీజ ప్రాయంగా కలిగింది. వ్యతంత సమయాల్లో తన మిత్రులలో ఒకడైన రచన పట్టే సత్తాను వారి సత్త వదనలతోపాటు తన సాహిత్యం తనకు బాగా లాభించిందని ముఖాముఖీలో తెలిపారు. దీనివల్ల, ఏదేమైనా లేని లోకాలలో వారికథలు, నాటకాలు, సాహిత్య విషాగులకు వ్యవసాయాలుగా వుండేవి. సరిగ్గా మిత్రులతోపాటు నాటకదర్శన భాగ్యం

కలిగిన చిన్నయ్యకు ఒక సాహిత్య ప్రేరణగా ఈ మిత్ర సౌగంధ్య చెప్పుకోవచ్చు.

సాహిత్య జీవితం : అనంత జిల్లాలో పేరెన్నికగన్న కవులలో దా చిన్నయ్యగారొకరు. విద్యా కల్పతరువుగా, కవికుల గురువుగా, పండితుడు విద్యనృణిగా అనంత ఆణిముత్యంగా, రాయలసీమరత్నంగా చిన్నయ్య శిష్యప్రశిష్యులు పొగుడుతూ వుంటారు. అనేక సాహితీ కార్యక్రమ నిర్వహిస్తూ యువ రచయితలను ప్రోత్సహిస్తూ ఎందరినో కవులుగా తీర్చిదిద్దే సునత ఈయనకే దక్కుతుంది. ఈయన సాహితీ వారసత్వంలో సాహిత్య సంస్కారమధ్బునవారిలో అవధానులు శ్రీమతి యం. ప్రధానలి, సల్లె లక్ష్మి, చక్రాల లక్ష్మీకాంత రాజారావుగారు ముఖ్యులు. ఈయనకు పెనకల ఆంజనేయులు, అవధాన ఆచార్య ఆశానాది, ఏయారి యంగన్న, మే వ్రాసాద్రిపతి, బేతపూడి రాజశేఖరరావు, వారణాశి శివరామయ్యగార్లు ముల్లినాథ్మన శాస్త్రి మొదలగువారు ఆత్మకంత సన్నిహిత సఖులు.

చిన్నయ్య రచనలు - వర్గీకరణ : సీమ ప్రాంతమైన అనంత జిల్లానుంచి మలితరం పద్యకవి దాదన చిన్నయ్య. ఈయన తెలుగు సంస్కృతాల్లో గుంతకల్లు వీరి సారస్వత కేంద్రానికి ఆటపట్టు. కవి, శతకారుడు, వా ప్రయోక్త, పదనగేయ రచయిత, అనువాదకుడు, సంకీర్తనా కారుడు, శత కలంనుండి జాలువారిన 20 గ్రంథాలు సాహితీలక్ష్మిని ఆలంకరించా ఈయన రాసిన శతకాలు మూడు. 1) శ్రీ బళ్ళారి దుర్గాంబికా శతకం, 2) ఆంజనేయ శతకం, 3) శ్రీ భరత మాతృశతకం. మూడు కావ్యాలు రాశారు. 1) శ్రీ శ్రీనివాస కళ్యాణం, 2) శ్రీ, ఏజయ భారతం (నిర్వచన భాంషం)



# గతి తప్పిన బ్రతుకు

అమెరికన్లు ధర్మశాస్త్రం వినారు. ఈ విషయాన్ని గుర్తుచేస్తూ చక్రాల లక్ష్మీకాంత రాజారావు "దాదన చిన్నయ్య చేపట్టిన ప్రక్రియే తదని సత్య చరిత్ర గేయనాటకాల్లో రచనలు చేసిన నిరంతర సాహితీ కృషివలననే యిది యుద్ధామనీ చెబుతూ -

తే||గీ|| సంస్కృతాంధ్రములందు ప్రశస్త దివ్య

కావ్యముల వ్రాసి రాబోవు కవులకెల్ల

మార్గదర్శిగ నిలిచిన మానవీయ

నయావిదాంవరమగిడి చిన్నయకునరులు'

(శ్రీ భరత మాతృ శతకం : భావదీపిక - చక్రాల లక్ష్మీకాంతరాజారావు)

సాధారణంగా ప్రాచీన కవులు తమ వ్యక్తిత్వాలనో, మూర్తిమత్వాలనో, కావ్యానతారికలో చెప్పడం పరిపాటి. శతకకారులలో నినేదనా రూపంలోనో మనవి, ఎజ్జపుల్లోనో చెప్పుతుంటారు. కానీ దాదన చిన్నయ్య దీనికి విరుద్ధంగా మంగళం, ఫలశ్రుతుల ముందు చివరలో 'అభివాదనలు' అను శీర్షికలో తన వ్యక్తిత్వాన్ని పూర్వాపరాల్ని ఇలా చెలువరచారు.

మ|| అకలంకోపుత వైవ భర్తీయుత చిత్తాం భోజతో సుప్రసాం  
బకు బయన్నకు, నందమండ, వియభ స్వర్ణోట్టలన్ మోళిడ  
పుక కీలించెడివాడ, సత్యగుణ విశ్వామండ, నీపాద సే  
వకుడున్ దాదన చిన్నయ్యాభ్యుదయ శ్రీ బళ్ళారి దుర్గాంబికా!

(శ్రీ "బళ్ళారి దుర్గాంబికా శతకం : పద్యం - 105)

పైవిధంగా కవులు తమ వ్యక్తిత్వాన్ని బహిర్గతం చేయడం ఆనవాయితీ. దీనినే దాదన చిన్నయ్య అనుసరించారు. అంతేగాక,

"తెలలందుండిన తెలమట్టు లరణిన్ దీపిండు శుద్ధాగ్ని యు  
ట్టుల క్షీరంబున దాగియున్న ఘృతమట్టుల్ లోపలన్ వెల్లు ని  
శ్చల దీపస్మగ్గు బ్రహ్మముందెలియగా శక్తుండగున్ మోనిధా  
వలయంబందు భవత్కటాక్షముననే బళ్ళారి దుర్గాంబికా"

(శ్రీ బళ్ళారి దుర్గాంబికా శతకం - పద్యం : 39)

కొడవి దయ్యమగుచు పరశుల్క మక్కడ!

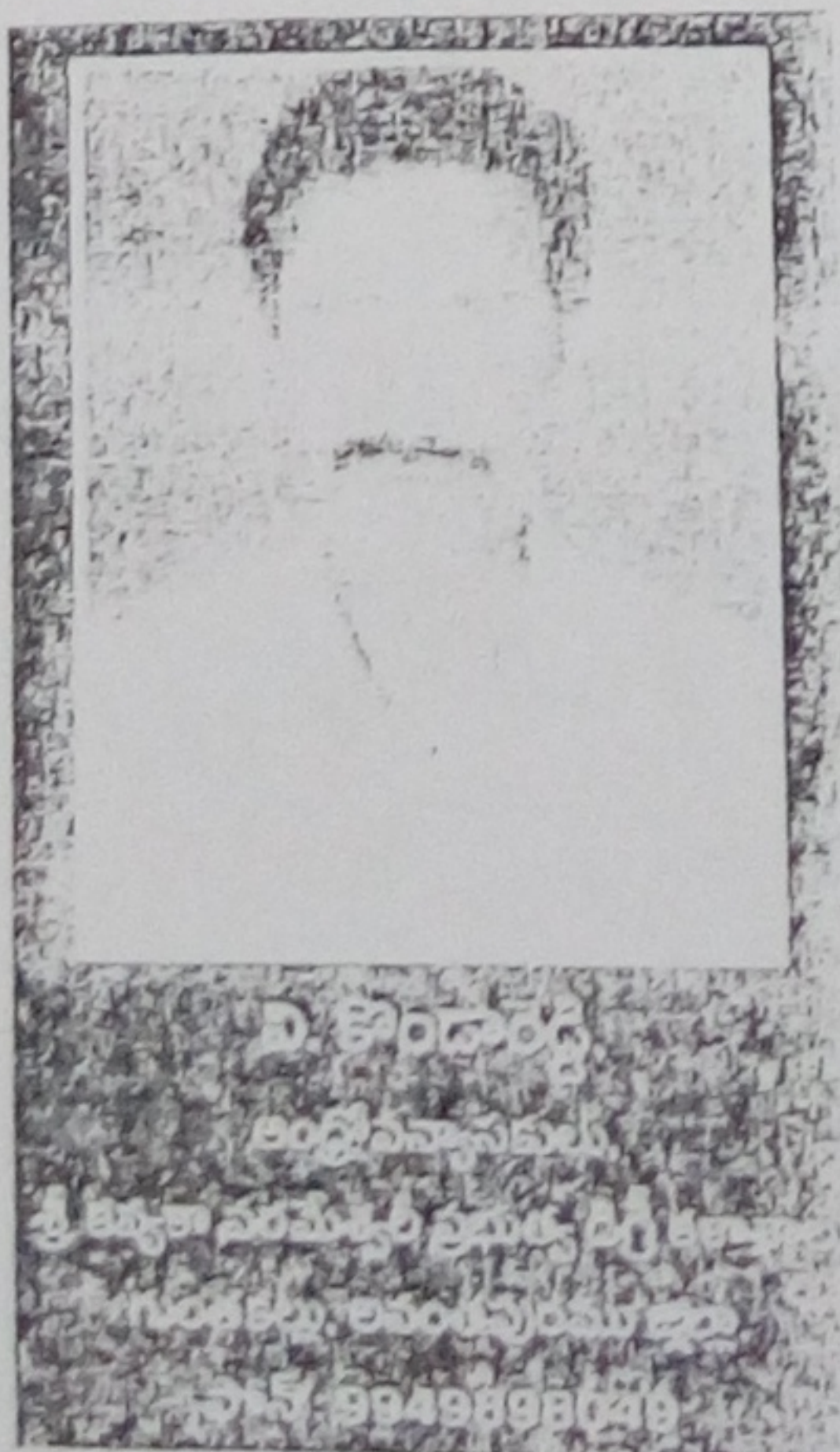
మనుజులందు బొచ్చి మనుత ప్రచ్చి,

అట్లు ముఖులనగ్నికాహతి గావించు

భవ్యగుణ సమేత ! భరతమాత !

(శ్రీ భరతమాతృ శతకం - పద్యం - 22)

అని దాదన చిన్నయ్య తన శతకాల్లో, రచనల్లో భక్తి భావజాలాన్ని, సామాజిక స్పృహను జోడించాడు. కావ్యాల్లో తనకున్న పౌరాణిక పాండిత్యాన్ని కుమ్మరించారు. నాటకాలు, రూపకాలు వికసిత్రాచినయాల్లో అన ప్రాథ సమాసాదం బరాన్నే కాక పౌరాణిక చారిత్రక వ్యక్తుల ధీరత్వాలకు వ్యక్తిత్వపు పోతపోశాడు. సద్యరచనల్లో ఆధ్యాత్మిక భావసంపదను, సత్సాంగత్వాన్ని, పురాణపురుషుల మాహాత్మ్యాన్ని, దేవగుల సచ్చిత్తనూ, భాగవతులపట్ల ఆరాధనా భావాల్ని తన రచనల్లో చిహ్నించేశారు.



ఎంత కాలమైందో

ప్రాతః కాలాన

చిగురాకులపై

మెరిసే మంచు

ముత్యాలు చూసి

ఎంతకాలమైందో

పచ్చని చెట్టు నీడన

చిరు రెమ్మలు

వీవనలై వీస్తుంటే

కమ్మని కునుకుతీసి

ఎంతకాలమైందో

గోధూళి వేళలో

సంధ్య కాంతుల

అరుణవర్ణాన్ని

సంతరించుకున్న

ఆకాశాన్ని చూసి

ఎంత కాలమైందో

తెలిమబ్బుల మాటున

దాక్కున్న వైరాళ్యం

గుండెలోతుల్లో

దాగిపోతే

పరిగెడుతూంది

కాలం నిస్సారంగా

రూపం తెలియని

గమ్యం వైపు...

దేవరెడ్డి అరుణ

బెంగుళూరు. మొ: 9901771333





# Dramatic Techniques and Theatricality in Mahesh Dattani's Selected Works

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Prakasam (Dt) A.P India

## Abstract:

Mahesh Dattani believes in the magic of the spoken word and therefore lays emphasis on the performance of his characters. In Dattani's plays, characters play the vital role to reach out to the audience. Most of his themes, rather unusual themes like homo-sexuality, bi-sexuality, lesbianism are brought home to the audience through the acting of the characters but not through the words on the page. The technique of 'thought' and voice-over is clearly seen in the plays 'Do The Needful' and 'Seven Steps Around the Fire'. In the play 'Do the Needful', the old method of 'aside' is done away with. The play begins with 'Exterior'. Alpesh is in his car driving through a bus-street, when Alpesh goes to Latha for his marriage. The movement of the play is quick from 'Exterior' to 'Interior' (Lata's house). Dattani uses the technique of 'Thought' to express the character's mind. The minds of Lata and Alpesh are known to the audience from the beginning of the play. The same technique of 'thought' followed by 'Voice-Over' is employed in 'Seven Steps Around the Fire', devoted to the theme of the plight of the 'hijras' in the society. This play has twenty movements from beginning to the end. Scenes from the 'Interior' to the 'Exterior' makes the spectators busy in thinking about the coming scene, arouses curiosity.

**Key words:** emphasis, bi-sexuality, lesbianism, voice-over.

## Introduction:

Passing through the phase of poetical, philosophical and political drama, Indian English drama as a public voice got a safe mooring in the dramatic art of Mahesh Dattani. To eliminate page and stage and to give theatre a place to articulate the voice of the marginalised in the shifting codes of mortality, Dattani carved his passage beyond the canons. He not only writes plays but also directs them. He also conducts and organises workshops on play-writing and stage production. The innovations he has made in the area of theatre made him popular both at home and abroad. In order to make his characters life-like on the stage, he introduced certain innovations in the techniques of his plays. To make the inner thoughts in the minds of his characters, he introduces the technique of 'thought' instead of 'asides' in his plays. 'Thought' is followed by 'Spoken Voice' to consummate with the themes of the play. As a playwright Dattani was influenced by Edward Albee's 'Who's Afraid of Virginia Woolf?'. When he read it in teens and opined that it unleashed in him an ability to write male and female characters against each other. Unlike other genres, such as poetry, fiction and essays, drama is a performing art. Hence, technique matters a lot in a play. Dattani says "I see myself a craftsman and not a writer. To me, being a playwright is about seeing myself as a part of the process of a production. I write for the sheer pleasure of communicating through this dynamic medium."



## New Trends in Post-Colonial Literature A Special Focus on Australian Literature

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a novel you need to read atleast twice, make sure that the author has not lost the thread and a second time make sure the reader is not bored. History, torture, philosophy, pain, love, lust, and perversion all bubble up, coming out in a fictional form that is difficult to read. It's a part memoir, part meditation. It's a meandering story of malevolence, madness and magnificent survival. Gould is a man in a prison, abused and scorned by his society. Prison is particularly that prison could lead to intense degradation of self-worth, even actual identity. Gould is a man from Britain, almost daily confronting a dysfunctional society torn between the rise of world commerce and industrialization and the displacement and degradation of its own people, struggling to understand what was happening around them. They failed miserably, and Gould is a representative of the failure. The plot was very difficult to understand and, of you consider the gruesomeness of the details I wasn't sure if it was worth the effort. Flanagan uses nested metaphors like the famous Russian dolls, each exposing a new level of the same theme. Here the theme is the perception of the written world. Flanagan is a master story teller and all he asks of you is a bit of patience while he unravels the life of a man beset by forces of breathtaking scope. After all, he is presenting you with the world of the British empire.

### Only a madman would open it :

W B Gould is a man whose perception becomes increasingly distorted in a place that could break the strongest mind. Macartney Harbour is a dumping ground for the worst convicts. Gould, an artist, is the worst

effects of the system when he is posted to the colony's surgeon to produce watercolors of the local marine life. In this role, Flanagan takes us a tour of "scientific" thought of the time and its impact on people on the far reaches of the empire which spans the planet. Pharmacology, evolution, religion of the time witnessed from his skilled prose. Gould's new project reflects colonial ambition for the colony, but he witnesses a new attitude in Gould as the story develops. What truly happened in this place bracketed by screaming winds and a mountain wilderness that inhibited dreams of escape? Flanagan makes Gould the only valid witness to events atleast the only one leaving a record. Gould assures us: "if you can't trust a liar & a forger, a whore & an informer, a convicted murderer & a thief, you will never understand this country."

### In the hands of madmen :

This novel has divided opinions regarding its boldness, excess of imagination and its capacity to be mystic and disorientate. Flanagan has indicated a rage against the silence that descended over Tasmania and Australia after the collapse of the convict system. The "dreadful hodge-podge", a mixture of detailed portraits of fish and shaggy dog stories, tales written frontwards, backwards and sideways with annotations and addenda, scraped together on loose leaves and dried fish skin and penned in numerous coloured inks, obsesses him.

As William Billy Gould, our second narrator is a convicted forger, a prisoner on the notorious



# NEW APPROACHES OF TEACHING ENGLISH LANGUAGE

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## Abstract

Generally, Teaching must include two major components sending and receiving information. So, a teacher tries his best to impart knowledge as the way he understood it. This Article presents the famous trends in the English Language Teaching that have been used practically in recent times in the entire world with specific reference to the trends prevalent during the past decades.

The use of innovative methods in educational institutions has the potential not only to improve education, but also to empower people, strengthen governance and galvanize the effort to achieve the self development goal for the country with a number of educational options available before the present generation learners, the newer trends seem to have emerged in the field of education that have entirely changed the face of traditional system of education. Recent trends, methodologies and developments portray the vital role of education sector in general with its internalization of the education process, stress on quality above quantity, increase in the adoption of technologies, necessity for professional talent etc. The theories and methods are constantly evolving in the field of English Language Teaching also.

**Keywords:** Approaches, Methods, New devices, ICT, pedagogy, learning process



# Development of Polymeric blend microspheres from Chitosan- Karaya gum for controlled release of Ketoprofen an anti Inflammatory drug

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**ABSTRACT:** Chitosan (CS) and Karaya gum (KG) blend microspheres were prepared by water-in-oil emulsion technique and were cross linked with glutaraldehyde and loaded with an anti-inflammatory drug Ketoprofen (KP). These microspheres were characterized by Fourier transform infrared spectroscopy (FTIR) to assess the interactions between polymer-polymer, polymer- drug and polymer-cross-linker. Differential Scanning Calorimetry (DSC) and X-ray diffraction (X-RD) studies indicated a uniform distribution of KP particles in microspheres, whereas scanning electron microscope (SEM) suggested the spherical structure of the microspheres with slight rough surface. The in-vitro drug release indicated that the particle size and release kinetics depend upon blend composition, amount of cross-linking agent used and amount of KP present in the microspheres. The in-vitro release studies further indicated that the release of KP is more than 10 hrs. The results showed that the blend microspheres of CS-KG are suitable candidates for drug release studies.

**Key words:** Chitosan, Karaya gum, Microspheres, Drug release, Anti- inflammatory drug.

## 1. Introduction

The prime aim of controlled release drug delivery is “spatial placement” and “temporal delivery”. Spatial placement refers to drug targeting to specific organs, tissue cells or even sub-cellular compartments; whereas temporal delivery refers to control the rate of drug delivery to target site [1]. An IPN microsphere is a composite of two polymers, which obtained when at least one polymer network is synthesized or cross-linked independently in the immediate presence of the other [2]. Chemical crosslinking between these polymers leads to improve mechanical properties and thermal stability [3]. Various natural polymers have been explored for controlled release microspheres development. Among them, guar gum, xanthan gum, gellan gum, locust bean gum, chitosan has been reported till date. In the present study, a novel combination of chitosan and Karaya gum were selected as matrix for IPN based microspheres development.

From the literature it is evident that, Chitosan [4] based microspheres have been extensively studied [5-7]. Chitosan (CS) is a biodegradable natural polymer with great potential for pharmaceutical applications due to its biocompatibility, high charge density, non toxicity, and mucoadhesiveness [8-9]. The linear polymer is derived by the partial deacetylation of chitin from crustacean shells, and it is composed of randomly distributed  $\beta$ -(1-4)-linked D-glucosamine (deacetylated unit) and N-acetyl-D-glucosamine (acetylated unit).

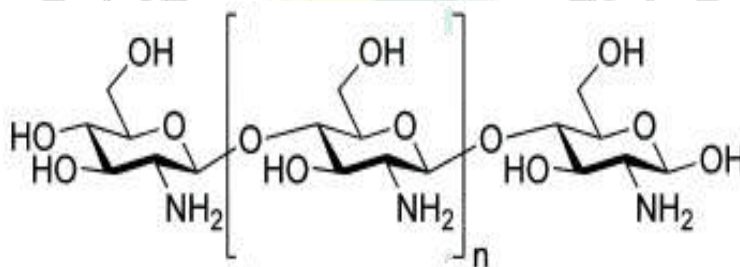


Fig1.1. Chemical structure of Chitosan

Gums are the natural polymers (plant exudates) having number of applications in food and pharma industry [10]. Gum Karaya (GK) is one of the anionic polysaccharide with diverse applications such as suspending agent, emulsifying agent, bulk laxative, dental adhesive and so on. It is a dried exudate obtained from *sterculia urens* rosd and other related species of *sterculia* belonging to family *sterculiaceae*. GK on hydrolysis yield galactose, rhamnose and galacturonic acid together with a small amount of glucuronic acid. Structurally, it is acetylated acidic polysaccharide [11] containing -D-galacturonic acid and -l-rhamnose residues in the main chain with 0-4 of the acid and 0-2 of rhamnose linkages. Acid is linked by 1, 2- linkage of  $\beta$ -d-galactose or by 1,3-linkage of  $\beta$ -d-glucuronic acid, whereas rhamnose units by 1,4-linkage of  $\beta$ -d-galactose units to the main chain to form polysaccharide [12].

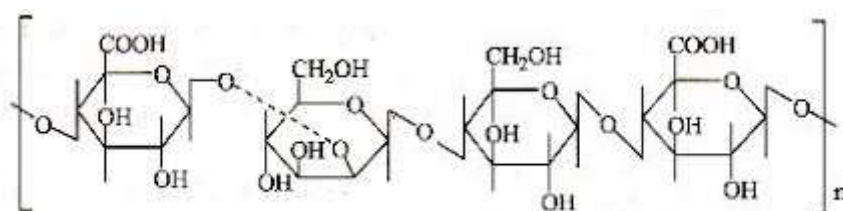


Fig1.2. Chemical structure of Karaya Gum



## FACILITATING INDUSTRIAL FINANCING FUNDING THROUGH PRIVATE SECTORS (SHARES)

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T.M. Madhavaiah\*

### ABSTRACT

*Government of India objective in second five year plan mainly heavy industries, manufacturing industrial goods by public sector. Later on shifted to private sector as per company act 2013, define private company as a company which by its article restore the rights to transfer of its shares with number of its member to two hundreds public company limited raises its capital by issuing shares to the public as preference shares and equity shares. Here 3 types of shares and each with two categories has been analyzed. Top capital stock and worst capital stock shares have been considered. It has been analyzed to look which shares are trading with attractive valuations indicating scope for growth by statistical analysis, scope for growth has been deducted.*

**KEYWORDS:** *Capital Sectors, Shares, Valuation, Trading, Growth Funding, Private Sectors, Industries.*

### Introduction

More or less for stable economic set up down the years 5 year plan are introduced. Second five year plan effective from 1956-61 with objectivity mainly on heavy industries boosting manufacturing of industrial goods in the country, primarily to develop public sectors by Mahalanabis model proposed in the year 1953, the model assume economy in closed. It has two segments. i.e. consumption goods and capital goods. Government is optimistic of assignment of funds among the various productive and consumption segments by private sector. Government later on introduces industries in private sectors. Company act 2013 define private company which by its article respect the right to transfer of its shares, except in case of one person company limited the number of its members re restricted to two hundred. A public company Act 2013 is registered with any amount of paid up capital. A public company limited by shares raises its capital by issuing shares to the public. The shares to the public is of two types preferential shares and equity shares.

Now here 2 categories of capital sector shares and each with 3 types has been taken into consideration. They are top 5 small capital stock shares and worst 5 small capital stock shares, Top 5 mid capital stock shares and worst 5 mid capital stock shares, Top 5 large capital stock shares and worst 5 large capital stocks, shares has been taken and subjected to statistical analysis to see the scope for growth in trading. Share Market Company discovered by Anuradha chatterjee.

### Methodology

YTD market performance data has been taken for stock indices preference of Top 5 small capital stocks and worst 5 small capital stocks, Top 5 mid capital stocks and worst 5 mid capital stocks, and worst 5 mid capital stocks, Top 5 large capital stocks and worst 5 large capital stocks has been taken into consideration. They have been subjected to statistical analysis for comparing which share is trading high with market value with high index. Statistical data like mean, standard deviation, and variance and standard error has been taken.

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## Therapeutic Potentials of Bioactive Compounds of *Azadiracta Indica* (Neem) to Treat Ailments of Humanbeing

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### ABSTRACT

*Azadiracta indica* (Neem) native of India has uncountable medicinal properties of various bioactive compounds which are present in the roots to seeds of this plant. Biologically active compounds namely Azadirachtin, meliacin, Meliantriol, Nimbin, Nimbidin, Salannin, Salannol vilasinin, are isolated from different parts of Neem plant. Biologically more active compound is azadirachtin, a tetranotriterpenoid is isolated from the seeds of Neem which is actually a mixture of seven isomeric compounds named as azadirachtin A-G and azadirachtin E is the most effective one. Two bioactive compounds azadirachtin M and azadirachtin N collected from seed kernels of *Azadiracta indica*, these two compounds have a major role in medicinal activities. The bioactive compound “Azadirachtin” has antimalarial, antigingivitis and antiplaque properties and also has antibacterial action by destroying the bacterial cells. The bioactive compound Nimbidin has anti-inflammatory antipyretic, antiarthritic, hypoglycemic, anti-gastric ulcer, antibacterial and antifungal properties. Nimbin exhibits spermicidal function. The neem oil was extracted from neem kernels. This oil used in soap industry and by pharmaceutical industries and contain many active ingredients which are called triterpene or limonoids. Neem oil showed good antiseptic properties. It is applied in the treatment of skin complaints as furuncles and eczema. Therapeutical potentials of neem is due to the presence of various Bioactive compounds in roots to seeds of its body.

**Key Words:** (1). *Azadiracta indica* (2). Bioactive compounds (3). Azadirachtin, (4). Nimbin, (5). Nimbidin etc., (6). Antimalarial, anti inflammatory and antiarthritic etc.,

### INTRODUCTION

*Azadiracta indica* (A. Juss.) *Neem* is native of India, very ancient medicinal plant and it has unique therapeutic potentials to treat multifactorial diseases of humanbeing. *Neem* is called “Arista” in Sanskrit that means perfect, complete and imperishable and reliver of sickness (13). The first medicinal plant mentioned in the Siddha medical system is neem (35). The importance of *Neem* tree has been recognised by the US National Academy of Sciences, which publish a report in 1992 entitled “The neem tree is an incredible plant that has been declared the “Tree of the 21st century” by the United Nations. (40).

A perusal of literature studies on Ara et al., 1989; Bannerman, 1982; Botelho et al., 2008; Brahmachari, 2004; Debashri and Tamal, 2012; Hedge, 1995; Kakai and Koha, 1984; Khare, 2007; Morgan, 2009; Murthy and Sirsi 1958; Ngure et al., 2013; Pandey et al., 2012; Pankaj et al., 2011; Pillai and Santhakumari, 1981; Puri, 1999; Sudhir et al., 2010; Uko and Kamalu, 2001 revealed that all the body parts of *Azadiracta indica* has potential medicinal bioactive compounds which are involved in various medical fields to cure diseases of human being and also play an important role in plant protection and environment.

### MATERIAL AND METHODS

*Neem*'s leaves, seeds, bark, roots, fruits and oil have become a cynosure of modern medicine and used medicinally for treatment various diseases specially in Indian Ayurvedic medicine, Homoeopathic medicine Homoeopathic medicine and Unani (37).





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## Studies on random blood sugar (RBS) levels of diabetes mellitus individuals subjected to a biochemical method - o- toluidine method

**Dr. CH Srinivasa Prasadacharyulu****Abstract**

According to Ayurveda diabetes mellitus (Madhumeha) is mainly Kapha dosha. Diabetes mellitus is a group of metabolic disorders with one common manifestation – hyperglycemia. India is one of the main country which is having high % of diabetic patients. According to Ayurveda diabetes mellitus (Madhumeha) can not be completely cured but can be controlled by life style habits, food management and medication. There are two types of Diabetes mellitus: Type 1 Diabetes mellitus (T1DM) and Type 2 Diabetes mellitus (T2DM). T1DM is an autoimmune condition. In people with T1DM, the damaged pancreas doesn't make Insulin. So, T1DM is known as Insulin-Dependent-Diabetes (IDDM). The most common form of Diabetes is T2DM account for 95% of Diabetes cases in adult. T2DM is also called Non-Insulin- Dependent Diabetes (NIDDM). With T2DM, the pancreas usually produces some Insulin. But either the amount produced Insulin is not enough for the body's need, or the body's cells are resistant to it. Insulin resistance or lack of sensitivity to Insulin. A Random Blood Sugar (RBS) means that it can be done at any time, under any conditions either fasting or after meals. The RBS test measures the amount of glucose in the blood at any given time of diabetic patient. The reference range of random blood sugar (RBS) is 80-140 mg%.

Random Blood Sugar (RBS) levels of 3 diabetic individuals was estimated by O-Toluidine method. Results of O-Toluidine method in relation to Random Blood Sugar (RBS) levels of diabetic individual - A, B and C is 225 mg %, 327 mg % and 272 mg % respectively.

RBS levels of diabetic persons B 327 mg % > C 272 mg % > A 225 %.

**Keywords:** random blood sugar, mellitus individuals, biochemical

**Introduction**

Sushruta most ancient Indian ayurvedic scholar have grouped madhumeha (Diabetes mellitus) under one among the 20 prameha (Urinary disorders). Prameha are a list of urinary disorders, especially characterized by profuse urination with several abnormal qualities. Any one of the prameha if neglected ultimately it ends up in madhumeha. According to Ayurveda diabetes mellitus (Madhumeha) is mainly Kapha dosha. In the present stressful modern living the incidence of Diabetes mellitus is increasing day by day. Previously the onset of the disorder diabetes mellitus was noted at the age of 40 years and above, but due to utter negligence in health rules plenty of diabetes mellitus cases are noticing is still early age groups and especially in children also. India is one of the main country which is having high % of diabetic patients. According to Ayurveda diabetes mellitus (Madhumeha) cannot be completely cured but can be controlled by life style habits, food management and medication. Before the discovery of insulin in the early 1920s and the later development of oral hypoglycaemic agents, the major form of treatment of diabetes mellitus involved starvation, dietary manipulation and the use of plant therapies (Baily and Day, 1989 and Bailey & Flatt, 1990) [2, 3]. Diabetes mellitus today is recognized as an epidemic disease in most countries that are undergoing socioeconomic transitions [Duyff, Roberta, 2002] [4]. Population growth, aging, urbanization, low physical activity, modern life style habits and obesity are main causative factors of high prevalence of diabetes mellitus (Wild *et al.*, 2004) [10]. The current scenario of diabetes mellitus is likely to worsen in coming decades. The most disturbing trend is the shift in age of onset of diabetes to a young age in the recent years (American Diabetic Association, 2006) [1]. Diabetes mellitus is a group of metabolic disorders with one common manifestation – hyperglycemia (WHO, 1980; WHO, 1985) [8, 9]. Chronic hyperglycemia causes damage to eyes, kidneys, nerves, heart and blood vessels (Mayfield, 1998) [6]. More recent studies have confirmed the antihyperglycaemic effect of *Coriandrum sativum* (Coriander) in streptozotocin-diabetic mice (Swanston-Flatt *et al.* 1990) [7]. Anti-diabetic agents can exert beneficial effects in the diabetic environment by improving and/ or mimicking insulin action and/or by enhancing insulin secretion (Gray & Flatt, 1997b) [5].

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## दलित आत्मकथाओं में सामाजिक अस्मिता

—जी. रामकृष्णा, एम. ए. (पी. एच. डी.)

दलित आत्मकथा दलित साहित्य की एक विशिष्ट विधा के रूप में साहित्यिक दर्जा पा चुके है। जबकि हिन्दी के गैर-दलित लेखक की आत्मकथाएँ साहित्यिक विधा का दर्जा न कर सकी है। मराठी दलित लेखकों और आलोचकों में आत्मकथा, आत्मचरित्र, आत्मवृत्त और स्वकथन आदि शब्दों को लेकर उनकी विशिष्टताओं को उजागर किया है। उन्हे आत्मकथा में आए 'आत्मा' और कथा शब्दों पर घोर आपत्ती है। डॉ. अम्बेडकर की दृष्टि में 'आत्मा' शब्द कर्म सिद्धांत का परिचायक लगता है। जो वर्ण व्यवस्था को सैद्धान्तिक आधार देकर जातिवाद के ही मजबूत करता है। यह 'गीत' का ऐसा विलक्षण दर्शन है जो दलितों के सामाजिक, आर्थिक शोषण को सैद्धान्तिक आधार देता है। इस तरह 'आत्मा' शब्द दलितों के शोषण की केंद्रवर्ती आधारशिला बन जाता है।

मराठी दलित साहित्य में आत्मवृत्त लेखन की शुरूआत गंगाधर पानतावणे द्वारा संपादित पत्रिका 'अस्मितादर्श' १९७६ में निकला। इस प्रकाशित आत्मकथ्यों के बाद से मनि है। जिसमें मराठी के प्रसिद्ध दलित लेखकों के 'मैं और मेरा जीवन' शीर्षक से संक्षिप्त आत्मकथा प्रकाशित हुए थे। दलित साहित्य में आत्मवृत्त लेखन की शुरूआत प्रसिद्ध लेखकों के विभिन्न पत्रिकाओं में प्रकाशित आत्मकथ्यों के बाद ही हुई। सबसे पहले डॉ. अम्बेडकर द्वारा लिखा गया था जो "मेरा जीवन" प्रकाशित हुआ। सभी दलितों ने अपने जीवनगत अनुभवों को पहले-पहल आत्मकथ्यों के रूप में अभिव्यक्त हुआ।

दलित आत्मकथाओं में "अस्मिता" का प्रयोग हुआ। 'अस्मिता' शब्द का अर्थ अंग्रेजी में गूहू है यह शब्द हिन्दी में "पहचान" के अर्थ में प्रयुक्त होता है। इस प्रकार अस्मिता से आशय 'पहचान' से है। किंतु यह पहचान भी आगे संबंधित



# WOMEN'S QUEST FOR INDIVIDUAL FREEDOM AND SELF-ASSERTION IN SAHGAL'S FICTION

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## Abstract

Ever since the written scripts came into existence depicting human experience, the masculine experience has got its full expression. It means that the collective image of humanity is one sided and biased. Woman was compelled to play a secondary role in a male dominated and tradition bound society in India.

The English education that crept into Indian soil during the British regime facilitated rational thinkers to project the oppressive condition of woman in the orthodox society. The birth of two movement's i.e Social Reform Movement and Nationalist Movement had a deep impact on the status of women. Issues such as Sati, ill treatment of widows, illiteracy of women attracted the attention of social reformers like Raja Ram Mohan Roy and Dayananda Saraswathi. These men dreamt of reviving the old Vedic society, which promised equal status to women. They strove to eliminate many social evils and made unstinted efforts to educate and raise the status of the Indian woman. Arya Samaj and Brahmo Samaj have done much to redeem their position as to place them on the equal footing with men. Swami Vivekananda proposed establishing a Math (a convent) at Belur and drafted a curriculum, which would not only impart knowledge but also develop skills in order to make them economically free and independent.

The women of India owe a deep debt to Mrs. Annie Besant who did yeoman service to provide them the advantage of education. The first All India Women's Educational and Social Congress was held in 1926. Earlier to this, the federation of university women was formed in 1920. In 1931 the Indian National Congress recognized the rising status of women. The movement for the freedom of India from the clutches of the Britishers saw both men and women hob-nobbing with each other on equal footing. Mahatma Gandhi had great regard for women and never discriminated them against men folk. He vehemently criticized the customs of child marriage, prohibition on widow marriages and the customs of purdah.

**KEY WORDS:** humanity, orthodox, Vedas, feminism, tradition

Ever since the written scripts came into existence depicting human experience, the masculine experience has got its full expression. It means that the collective image of humanity is one sided and biased. Woman was compelled to play a secondary role in a male dominated and tradition bound society in India.

The English education that crept into Indian soil during the British regime facilitated rational thinkers to



# INFLUENCE OF GHANDHIAN PRINCIPLES ON SAHGAL'S NOVELS

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## ABSTRACT

It is a great wonder that an empire of the size of Great Britain was overthrown with sheer non-violence. But it happened to our astonishment; not a drop of blood was shed in this political movement. Then, what kind of violence could be there? The answer is that the truth of which Gandhi was a great apostle, indeed. He experimented it in Africa with success. He defeated the ogre of imperial violence through Satyagraha, 'insistence on truth' as it is called. It adorned the subtle weaponry of the Mahatma. Imbued with Christian Virtues, Hindu and Buddhist Philosophy, he attained the status of a saint who was worshipped by the masses.

Nayantara Sahgal was drawn towards Gandhiji not only because of Jawaharlal Nehru who guided the political destiny of his own family but also because of Sitaram Pandit, the father of Ranjith Pandit who in many respects was Gandhiji's teacher. In her continuous adherence to Gandhian idealism, Sahgal has not only inherited but also cherished certain values and attitudes towards life which can be best described as a complex blend of political liberalism, social sophistication, economic moderation and cultural catholicity. In her essays on contemporary political issues, Sahgal advocates that Gandhi's life has proved beyond doubt that non-violence is an active and powerful force even in the modern times. The liberal humanism of Gandhi embraced various experiences at various levels of human consciousness.

Gandhi's appeal for the transformation of women's status boosted the confidence of Nayantara Sahgal as a champion of their emancipation. It is her unswerving allegiance to Gandhism that reveals her emphasis on the individual in her novels. Her concern for human values has not gone unnoticed in her works.

Key words: Gandhism, apostle, political liberalism, non-violence

To a world lost in error and beset by the illusions of time, Gandhi expounds the value of the timeless principles of the truth of God and believes that the love for fellow-men is the only basis to establish right human relationships. The inspiration of his life has been what is generally called religion, religion not in the sense of strict adherence to dogmas or complete affiliation to ritual but religion in the sense of an abiding faith in the absolute values of truth, love, and justice and a persistent effort to realize them on earth. Through prayers, fasts and the practice of love, he controlled the inconsistencies of his flesh and discursiveness of his nature to carry out God's work. He also understood that all religions at their best prescribe the same discipline for man's fulfillment. For





## SYNTHESIS, CHARACTERIZATION OF (R)-N-(1-HYDRAZINYL-1-OXOPROPAN-2-YL)-2-(2-(4-(3-METHYL-5-OXO-4-(2-PHENYLHIDRAZONO)-4, 5-DIHYDRO-1H-PYRAZOL-1-YL) PHENOXY) ACETAMIDO) ACETAMIDE

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### ABSTRACT

A Solution of (R)-methyl 2-(2-(4-(3-methyl-5-oxo-4-(2-phenylhydrazono)-4, 5-dihydro-1H-pyrazol-1-yl)phenoxy)acetamido)acetamido)propanoate and hydrazine hydrate in ethanol was refluxed for 5 hours. The reaction mixture was cooled and poured into ice cold water with stirring. The separated solid was filtered, washed with water and recrystallized from ethanol to afford (R)-N-(1-hydrazinyl-1-oxopropan-2-yl)-2-(2-(4-(3-methyl-5-oxo-4-(2-phenylhydrazono)-4, 5-dihydro-1H-pyrazol-1-yl)phenoxy)acetamido)acetamide. The synthesized compound is (R)-N-(1-hydrazinyl-1-oxopropan-2-yl)-2-(2-(4-(3-methyl-5-oxo-4-(2-phenylhydrazono)-4, 5-dihydro-1H-pyrazol-1-yl)phenoxy)acetamido)acetamide have been characterized by IR, <sup>1</sup>HNMR and elemental analysis.

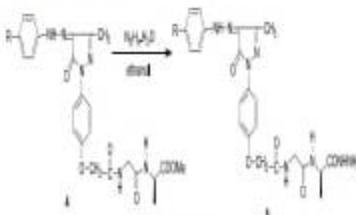
**KEYWORDS:** Hydrazine hydrate, Pyrazole, Elemental Analysis, IR and <sup>1</sup>HNMR

### INTRODUCTION

Heterocyclic compounds represents an important class of biologically active molecules specifically, those containing the pyrazole nucleus have been shown to possess high biological activities such as tranquilizing, muscle relaxant, psycho anesthetic, anticonvulsant, antihypertensive, antidepressant activities. The derivatives of pyrazole are important class of antipylitic and analgesic compounds.<sup>[1-4]</sup>

**Experimental Section:** A solution of (R)-methyl 2-(2-(4-(3-methyl-5-oxo-4-(2-phenylhydrazono)-4, 5-dihydro-1H-pyrazol-1-yl)phenoxy)acetamido)acetamido)propanoate (0.01M) and hydrazine hydrate (0.015M) in ethanol (20ml) was refluxed for 5 hours. The reaction mixture was cooled and poured into ice cold water with stirring. The separated solid was filtered washed with water and recrystallized from ethanol to afford (R)-N-(1-hydrazinyl-1-oxopropan-2-yl)-2-(2-(4-(3-methyl-5-oxo-4-(2-

phenylhydrazono)-4, 5-dihydro-1H-pyrazol-1-yl)phenoxy)acetamido)acetamide. The yield was (2.24g) 60%. Elemental analysis found C: 55.87%, H: 5.26%, N: 22.67%, O: 16.19%. Calcd: C: 55.92%, H: 5.39%, N: 22.73%, O: 16.27%.



**Scheme-1**

Compound	5a	5b	5c	5d	5e	5f	5g
R	4-H	4-CH <sub>3</sub>	4-OCH <sub>3</sub>	4-OC <sub>2</sub> H <sub>5</sub>	4-Cl	4-Br	4-NO <sub>2</sub>





## SYNTHESIS, CHARACTERIZATION AND BIOLOGICAL ACTIVITIES OF 3-AMINO-4-METHYL PYRIDINE DITHIOCARBAMATE METAL COMPLEXES

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### ABSTRACT

Dithiocarbamates are a class of sulphur-based metal-chelating compounds with various applications in medicine. A new series of new transition metal [Cu(II), and Mn (II)] complexes of Dithiocarbamates were synthesized from 2-Amino-3-Methyl pyridine and Carbon disulfide and further characterized. The investigation of these complexes confirmed that the stability of metal-ligands coordination through, S & S,N atoms as bidentate chelates.

**KEYWORDS:** 3-Amino-4-Methylpyridine, Metal Complexes, Spectroscopic Studies, Dithiocarbamates, neurological disorders.

### 1. INTRODUCTION

Insights gained from decades of research have begun to unlock the pathophysiology of these complex diseases and have provided targets for disease-modifying therapies. In the last decade, few therapeutic agents designed to modify the underlying disease process have progressed to clinical trials and none have been brought to market. With the focus on disease modification, biomarkers promise to play an increasingly important role in clinical trials. Among the histamine receptor subtypes, H3 receptors play an important regulatory role in the CNS. Activation of H3 auto receptors can inhibit histamine synthesis and release from histaminergic neurons<sup>[1]</sup>, while activation of H3 hetero receptors can inhibit release of other neurotransmitters such as acetylcholine, noradrenaline, dopamine and 5-HT from non-





# ORAL SPEECH - AN ART OF IMPRESSING THE AUDIENCE

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## ABSTRACT

We communicate our thoughts, feelings and ideas through speaking only to others. It is the process of expressing our ideas, sharing our opinions and making others to know the facts and information. It is an art that can make the people impress and agree with your ideas. Speaking with others can bridge the gap between two people and can solve many problems. At the time of speaking we should check our fluency, subject matter, organization, quality of language, vocabulary that we are using and also delivery. Fluency is the language that we use with ease and flow of words whereas the subject matter includes the selection of topic and your command over the topic. While speaking the subject matter you should be confident to answer for the questions that come across while you are speaking. Organising the ideas about your topic chosen to speak is very important and you should convey them effectively without ambiguity. The quality of language the speaker uses also makes an impact on the listeners. To create a dramatic effort we should use short sentences and short phrases. We can use metaphors and similes to impress the listeners. There should not be any vagueness in our expression and thought. For a proper speech, good delivery is very important. It doesn't matter how well you prepared, but your delivery plays a crucial role in making the listener impressing a lot. At the time of delivering a lecture it is very important to check the volume and tempo of our lecture. To monitor our pitch and tone at the time of delivery also plays a key role in satisfying our listeners. Variety in pitch, tone, volume and tempo also makes our audience to pay attention to our lectures. By introducing variety in our pitch, speaker can make clear what he wants to convey exactly to the listeners. Varying the tone of voice adds life to speech and a good speaker can change his tone to fit the ideas.

*Key words: ambiguity, monitoring, vagueness, pitch.*

## INTRODUCTION

P. S. Kiran Kumar\*

### Narrating an Experience

Narrating an incident that has made a deep impression on you or narrating an eventful journey or narrating an experience that went wrong are the points that should be covered in this topic. To be frank, speaking on such occasions is easier when compared to other topics where we haven't witnessed or experienced. It is because what we need to narrate an experience what we have gone through personally. In such incidents the speaker has to keep in mind the following aspects

- Recall an incident
- write down the important points about it
- Arrange these points in order, excluding the unnecessary ones

### Expressing an opinion

Speaking on an opinion based topic requires some skill which is argumentative in nature and sometimes you need to speak either in favour or against the statement. When we need to talk on such instances we have to ask ourselves few questions:

What is the subject of the topic?

Do we feel strongly about it?

Are we in favour or against the given statement?

Do we have substantial evidences for our opinion?

What are the questions to be faced by the listeners?

### Providing a Description

Sometimes you may be asked to describe a festival about a person, a film, or a book. Delivering on such subjects requires a good deal of knowledge because you have to describe relevant facts. For example you choose to describe a person who has impressed you and the person you have chosen might be a player, an actor or a celebrity. If you choose such topic

Make sure that you know some details about person.

Have something important to tell about the person which can be of interest to the listeners.

In case you choose to describe a book you read, you need to



# MOTTO IN WRITING SUBALTERN STUDIES - A CRITICAL ELUCIDATION

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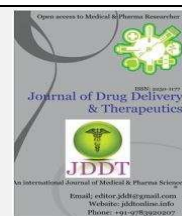
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**Abstract:** For the hundreds of years people are under subjugation. The main reason for this is the lack of proper awareness and education. The rich is becoming more and more rich and the poor is becoming more and more poor. In this critical juncture there arose a kind of study for the marginalised people ie, sub-altern studies. People who are fighting for their space, people who are searching for their room, people who are thriving for their identity are all brought under one roof. The sub altern approach focusses mainly on broken people and this concept becomes the nucleus of the study. The term Sub-altern has the base from Latin language, sub means below and altern means all others. Apart from involving the ideological areas, the plight of the poor people, farmers, peasants, workers and crushed women in the society are covered in the subaltern writings. The key concept of the subaltern works is to appreciate the consciousness and the enlightenment of the apartheid people. In the early 1980's there started a school in India called Subaltern school of studies which gained popularity later in Latin American Studies, African Studies and other areas. The process of production is the foundation of development and change, economic transactions determine the direction of growth in the society. The sources of subaltern writings are not available abundantly because these parched groups cannot thoroughly express their ideas and opinions like other privileged classes in the society. The available sources for subaltern studies are Government documents, Census reports, Reports from Revenue department, Judicial documents, documents from Police departments, Folk tales, Folk songs and interviews etc. This mode of writing subaltern studies paved the path to new goals by crossing the traditional writing. The concept of writing the sub altern studies is similar to writing as *History from Below* in England.

**Keywords:** Subjugation, Parched, Plight, Juncture, Apartheid Etc.

**Introduction:** The essence in the history is the fight of the people which is recorded and the realization of the facts for the future generations to study. The subaltern studies revolve in and around the people and their life which constitute the jist of the history. The mode of depicting history also called as *history from below* aims at developing the epitome of subaltern consciousness revealing in different forms, different places and at different times. Subaltern, meaning of 'inferior rank' is a term adopted by Antonio Gramsci an Italian Marxist. A subaltern is someone with low profile, origin and low ranking in a social, political and economic hierarchy. The word subaltern can also be defined as a person who is crushed, broken, apartheid, segregated, differentiated, demarcated in the society or a person in a low rank, low class in the society. These people are eligible for low cadre jobs or entry level jobs in a company or a business organisation. There are several synonyms for the word subaltern like broken class, lower class, under privileged class, exploited class, inferiors, minors etc. ,If we go back to history, there are mainly two kinds of people in the society-they are superiors and inferiors. The base for the rise of subaltern studies is the consciousness's and autonomy of the disregarded class in the society. First of all we should appreciate the enlightenment of the neglected class with regard to their action and thoughts. Change in the society gives pace and path to the culture. The sources for the subaltern studies are not abundant because of their ignorance and lack of proper guidance. They cannot preserve the evidences just like the previlged class people. Ranjit Guha, an Indian is the founder of subaltrn studies in India and it prevailed in the last two decades of the 20th century. There has been wide range of



Open  Access

Research Article

## Fabrication of Gelatin/Karaya gum blend microspheres for the controlled release of Distigmine bromide

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### ABSTRACT

This paper reports the fabrication of gelatin/karaya gum microspheres by emulsion crosslinking method for controlled release of distigmine bromide. The microspheres were crosslinked with the help of glutaraldehyde and used for controlled oral delivery of distigmine bromide. The obtained microspheres were characterized by Fourier transform infrared spectroscopy, differential scanning calorimetry, X-ray diffraction and scanning electron microscopy. Drug release kinetics of the microspheres is investigated in simulated intestinal fluid pH 7.4 at 37°C. Results illustrated that microspheres was influenced by the pH of test mediums, which might be suitable for intestinal drug delivery. The drug release kinetics was analyzed by evaluating the release data using different kinetic models.

**Keywords:** Karaya Gum, Gelatin, microspheres, drug delivery.

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## 1. INTRODUCTION

Polymers (both natural and synthetic) have played a vital role in the progression of drug delivery systems through microspheres, hydrogels and nanospheres by controlling the rate of drug release (both hydrophilic and hydrophobic drugs).<sup>1</sup> Interpenetrating polymer network (IPN) based on the natural polymers is an ingenious drug delivery system, with several advantages like high swelling capacity and tremendous mechanical strength which plays a significant function in the targeted and controlled drug delivery.<sup>2,3</sup> IPN has emerged as a trending scaffold to carry the drug within its minuscule spherical body and target into specific part of the body. Natural polymers or their modified matrix systems have several advantages like hydrophilicity, biocompatibility, biodegradability and lack of toxicity.<sup>4-6</sup> They have demonstrated excellent performance in controlled delivery of active molecules.

The karaya gum (KG) is the dried exudates extracted from deep incisions in the heartwood of the plant *Sterculia urens*, belonging to family Sterculiaceae.<sup>7</sup> Karaya gum is a branched polysaccharide, which consists of d-galacturonic acid, d-galactose, l-rhamnose and d-glucuronic acid. It is a glycanorhamnogalacturonan, with alternating backbone units of  $\alpha$ -D-galacturonic acid linked at C4 to  $\alpha$ -L-rhamnose

at the C2 position. Substitution occurs on the hydroxyl groups by D-galactose and D-glucuronic acid.<sup>8</sup> In earlier literature, microspheres of KG were used as drug carrier due to its biocompatible, biodegradable and good swelling properties, it is used for the rate controlling of the drug release from the polymer bend matrix.<sup>9</sup>

Gelatin (GE) is a proteinous material prepared by the thermal denaturation of collagen isolated from fish skins, animal skin and bones with very dilute acid.<sup>10</sup> Structurally gelatin contains many glycine residues, proline and 4-hydroxyproline residues. Previously M. Aminabhavi et al.<sup>11,12</sup> reported that gelatin can be used as good drug delivery vehicle due to its properties like non-toxic, non-irritant, biocompatible, biodegradable and edible polymer. Due to its wide range properties, it is used in various food and pharmaceutical industries.<sup>13, 14</sup> In spite of wide range properties of GE, GE have major drawback that is quick solubilisation in aqueous environments, thus it results faster drug release profiles.<sup>15</sup> To overcome this drawback GE microspheres were chemically crosslinked with glutaraldehyde.<sup>16</sup>

Distigmine bromide (DSB) (Fig. 1) is a carbamate group cholinesterase (ChE) inhibitor; its pharmacological effects are characteristically reversible and long lasting.<sup>17</sup> It has



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Research Article

## Emerging Novel Drug Delivery System for Control Release of Curcumin through Sodium Alginate/Poly(ethylene glycol) Semi IPN Microbeads-Intercalated with Kaolin Nanoclay

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### ABSTRACT

The aim of the present work is fabrication of Curcumin encapsulated microbeads from Sodium Alginate/Polyethylene Glycol/Kaolin using glutaraldehyde as crosslinker by simple ionotropic gelation technique. The developed microbeads were characterized by Fourier transform infrared spectroscopy to confirm the formation of microbeads. Differential scanning calorimetry and X-ray diffraction studies have confirmed uniform molecular dispersion of CUR in the microbeads. Encapsulation efficiency of CUR in microbeads was ranged from 40 to 49%. Dynamic swelling studies and *in vitro* release kinetics were performed in simulated intestinal fluid (pH 7.4) and simulated gastric fluid (pH 1.2) at 37 °C. The results suggest that both swelling studies and cumulative release studies were depend on pH of the test medium, which might be suitable for intestinal drug delivery. The *in vitro* release data were analysed by using Korsmeyer peppas equation to compute the diffusion exponent (n); the results suggest that it followed non-Fickian diffusion.

**Keywords:** Sodium Alginate, Polyethylene Glycol, Kaolin, Microbeads, Drug delivery**Article Info:** Received 28 April 2019; Review Completed 29 May 2019; Accepted 01 June 2019; Available online 15 June 2019

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## 1. INTRODUCTION

During the last few years, a wide range of clay minerals have been used in pharmaceutical and biomedical fields exclusively for controlled drug delivery systems. Clay minerals are the oldest earth material composed of hydrous aluminium phyllosilicates which are usually formed as a product of chemical weathering of other silicate minerals at the surface of the earth<sup>1</sup>. Clay minerals are widely employed in the pharmaceutical industry as a lubricant, flavour correctors, desiccants, disintegrants, diluents, binders, pigments and opacifiers<sup>2,3</sup>. Clay minerals used as oral treatment of diarrhea and also for topical dermatological applications<sup>4,5</sup>. Clay minerals act as an active ingredient in pharmaceutical formulations because it can control the efficiency and consistency in dosage formulations and also improve the bioavailability because of their larger specific surface area and considerable ion-exchange capacity which attribute to their ability to control the efficiency of bio active molecules. Kaolin is a hydrated a two-dimensional (2D) aluminosilicate mineral<sup>6,7</sup>. It has been extensively used in biomedical related applications such as an activating agent

for blood clotting<sup>8</sup>, as an ingredient for operation haemostasis<sup>9</sup> and also used in drug delivery systems for prolonged release, especially of basic drugs because it can acts as active excipient in pharmaceutical dosage forms to increase the efficiency and bioavailability of drug molecules<sup>10</sup>.

Sodium alginate (SA) is a natural polysaccharide comprising of  $\beta$ -D-mannuronic acid (M) and  $\alpha$ -L-guluronic acid (G) repeating units linked by 1 $\rightarrow$ 4 linkage and displayed in the form of homo-polymeric (MMMM or GGGG blocks) and hetero-polymeric sequences (MGMGMG or GMGMGM blocks)<sup>11</sup>. Alginates have been used in pharmaceutical applications as a binder, viscosity modifying agent, stabilizer, tablet disintegrant and thickening agent. Alginates possess mucoadhesive biomaterial which could show a potential advantage in mucosal drug delivery due to its cytocompatibility, biocompatibility and biodegradation<sup>12,13</sup>. Advantage of alginates is used as a matrix for the fabrication of controlled and sustained release formulations because it is degraded and absorbed by the body during and after release of drug molecules without any toxic effects<sup>14</sup>. Therefore





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# BALLARD'S EDEN-OLYMPIA: AN ILLUSORY CONSUMERIST UTOPIA

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**Abstract:** This article offers close reading of JG Ballard's *Super Cannes*. The novel explores the affluent community of Eden-Olympia. Eden-Olympia is designed by the capitalists to improve the work efficiency of the community. For outsiders it is a perfect consumer's utopia but it is an illusion and a virtual world created by the capitalists. In the novel, Wilder Penrose, the resident psychiatrist, promotes Eden-Olympia as a consumerist utopia. He offers violent therapy program to its residents. Critics have been especially interested in Penrose's violent therapy program 'psychopathy' and its social meaning. They have stated that the violence on the underside of global capitalism is portrayed through psychopathy. However, Penrose's illusion is rarely discussed. In this regard, it can be argued that Ballard displays the violence of consumer society and its illusory ideology. This paper will discuss how the simulated reality of a capitalist consumers' society is portrayed in *Super-Cannes*, relying on a Baudrillardian perspective and will investigate violence as said by Kim as an image of consumer capitalism.

**Keywords:** Consumerism, Eden-Olympia, Hyperreality, Psychopathy, Violence and Virtual city

J. G. Ballard's *Super-Cannes* (2000) pertains to his late fiction, considered a "trilogy about gated communities," which also includes *Cocaine Nights* (1996) and *Millennium People* (2003) (Smith 9). The three works take the form of detective novels with a first-person narrator who, as the protagonist, investigates the crime that has occurred and explores the real cause of the criminal offense. The novels reflect new aspects of consumerism, as well as the development of media technology under a global capitalist system.

From a post-apocalyptic perspective, Ballard portrays the violence in a rich consumer society under global capitalism in *Super-Cannes*. This novel explores a utopian consumer society set in Eden-Olympia, a fictional city located on the French Riviera in southern France. Promoting Eden-Olympia as a paradise, the story's psychiatrist Wilder Penrose tells the protagonist Paul Sinclair that there is no violence here, except for the killing spree and suicide of the pediatrician David Greenwood. However, Paul discovers that Eden-Olympia's executives practice violence against minority groups, and, through Penrose's use of illusion, this violence is fictionalized as simulacra in hyper-reality, by the executives recording and appreciating it as an image.

At the beginning of *Super-Cannes*, Eden-Olympia is depicted as a perfect place, like a paradise, when magazine journalist and ex-pilot Paul Sinclair and his wife Jane moved to the complex. Jane is a pediatrician and takes over from David Greenwood, who has committed suicide after murdering ten people living in Eden-Olympia.

Eden-Olympia is a luxurious, "intelligent" Western European community located "in the hills above Cannes" (SC 3). The city represents a multinational high-tech business park, equipped with such features as "a self contained office" and a "computerized library" in its residents' houses (SC 25), a "simulated nature trail" and "artificial lakes and forests" (SC 9, 37). The image of a glowing office building combined with high-tech facilities hints at the wealth accumulated in Eden-Olympia (SC 7-8).

Meanwhile, due to the haze of fog and sunshine on the artificial lakes, and the glass exterior walls of the office buildings, Paul has the impression that Eden-Olympia is a "mirage" or "virtual city" (SC 8); even relationships between people in Eden-Olympia are depicted as virtual by Wilder Penrose because there is little contact between them. He delineates that people at Eden-Olympia do not mix. It's a problem we're working on it. They want to be alone by the time they get home, fix a martini, and swim a few lengths. Their true social life is the office. That sounds like a design error. Jane and I [Paul] go into Cannes just to talk to the tourists at the next table (SC 93).

Paul and Jane also live in the villa where David Greenwood lived. Greeting Paul and Jane, Penrose informs them of Eden-Olympia's benefits and facilities, such as medical services being available for all emergencies, and a small airport nearby (SC 16). The apartments are also located along the waterfront and offer great views, and have sporting facilities to be enjoyed (SC 17). Promoting Eden-Olympia as a perfect place, Penrose explains to Paul that we can cope with everything. This is the world's only place where you can get insurance



# Synthesis and Anticancer Activity of Amide Derivatives of 1,2-Isoxazole Combined 1,2,4-Thiadiazole<sup>1</sup>

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**Abstract**—A series of amide derivatives of 1,2-isoxazole combined with 1,2,4-thiadiazole are synthesized **11a–11j**. Their chemical structures are confirmed by <sup>1</sup>H and <sup>13</sup>C NMR, and mass spectra. The products are tested for their anticancer activity against four types of human cancer cell lines, including MCF-7 (breast), A549 (lung), Colo-205 (colon), and A2780 (ovarian). Etoposide is used as a positive control. Most of the compounds show good anticancer activity. The compounds **11b**, **11c**, **11d**, **11e**, **11g**, and **11j** demonstrate more potent activity than etoposide.

**Keywords:** Luminespib, Cefozopram, isoxazole, thiadiazole, anticancer activity

**DOI:** 10.1134/S107036321902????

## INTRODUCTION

Different types of heterocyclic derivatives are used efficiently in anticancer chemotherapy [1–14]. Isoxazole derivatives are used extensively as agrochemicals and in medicine [15–18] due to a broad spectrum of activity, including anticancer [19], antifungal [20], anti-inflammatory [21], and antimicrobial [22]. Among these, Luminespib (**1**, NVP-AUY922) (see figure) is an FDA approved anticancer drug candidate. Thiadiazole derivatives are important functional components of molecules of many natural compounds [23] and drugs, for example, such as antibiotic Cefozopram (**2**) (see figure) which is used for treatment of CNS [24].

Based on the above information accumulated for isoxazole and thiadiazole and in continuation of our studies of heterocyclic compounds, we designed and synthesized a series of amide derivatives of 1,2-isoxazole combined with 1,2,4-thiadiazole **11a–11j**. Their structures were confirmed by <sup>1</sup>H and <sup>13</sup>C NMR

and mass spectra. The compounds were tested for anticancer activity against four human cancer cell lines.

## RESULTS AND DISCUSSION

Synthetic approach to the target compounds **11a–11j** (Scheme 1) started with introduction of compound **3** in the Claisen-Schmidt reaction with 4-cyanobenzaldehyde **4** which led to pure chalcone **5** with good yield. The following reaction of the intermediate **5** with 4-nitrobenzothioamide **6** in presence of AlCl<sub>3</sub> gave the product of cycloaddition **7**, which reacted with hydroxylamine hydrochloride to give isoxazole derivative **8**. The following reduction of compound **8** with Zn-dust in acetic acid with formation of amine **9**, and reaction of the latter with aromatic chloroanhydrides **10a–10j** led to the title compounds **11a–11j**.

**Biological evaluation.** *In vitro* cytotoxicity. The synthesized compounds **11a–11j** were screened for their anticancer activity against four human cancer cell lines such as MCF-7 (breast), A549 (lung), Colo-205 (colon), and A2780 (ovarian) by the MTT assay (see the table). Etoposide was used as a positive control. The products **11b**, **11c**, **11d**, **11e**, **11g**, and **11j**

<sup>1</sup> The text was submitted by the authors in English.

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## ANDHRA PRADESH URBAN LOCAL BODIES ELECTIONS 2014 - A STUDY

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### ABSTRACT

*Municipal Governance in India has existed since the year 1687, with the formation of Madras Municipal Corporation, and then Calcutta and Bombay Municipal Corporation in 1726. In 1882 Lord Ripon, Viceroy of India, who is known as the Father of Local Self-Government laid the democratic forms of municipal governance in India. In Government of India Act, 1919 the need of the resolution and powers of democratically elected government were incorporated. Later in Government of India Act, 1935 Local Governments were brought under the state or provincial government and special powers were given. According to the 1991 Census of India Urban Local Bodies were classified into four major categories as*



1. Municipal Corporations,
2. Municipal Councils,
3. Town Area Committees, and
4. Notified Area Committees.

**KEY WORDS:** *Municipal Governance , provincial government and special powers.*

### INTRODUCTION

The 74<sup>th</sup> Constitutional Amendment Act, 1992 has been introduced providing Constitutional status for the Municipalities. The Act introduces a new part in the Constitution namely Part-IXA covering Articles 234P – 243ZG. It also introduces schedule 12 in the Constitution of India, which lists 18 subjects coming under the jurisdiction of the Municipalities delegated to them by the state governments. After the implementation of the Act there are only three categories of Urban Local Bodies. They are

1. Municipal Corporations,
2. Municipal Councils, and
3. Nagar Panchayas.

Among all the Urban Local Bodies Municipal Corporations enjoy a greater degree of fiscal autonomy and functions although the powers vary across the states. These local bodies are subject to supervisory and control by the state governments. The elections to the local governments are conducted by the state governments which are held once in every 5 years.

The below Table-1 shows the District wise Number of wards and the seats won by the parties in Andhra Pradesh Municipal Ward Elections, 2014.





## GENERAL LEGISLATIVE ASSEMBLY ELECTIONS OF ANDHRA PRADESH 2014 AND 2019 - A STUDY

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### ABSTRACT

*Andhra state was created in 1953 from the Telugu speaking Northern districts of Madras state. It consists of two distinct cultural regions – Rayalaseema and Coastal Andhra. It hadn't included few telugu speaking areas from Hyderabad state. On November 1, 1956 Andhra Pradesh became the first state in India under the States Reorganisation Act, 1956 which is formed by merging Andhra state with Telangana region of Hyderabad state. Later by Andhra Pradesh Reorganisation Act, 2014 Telangana state was separated back out of Andhra Pradesh on June 2, 2014 creating the new states i.e., Telangana and residuary Andhra Pradesh. The united AP Legislative Assembly have 294 Legislative Assembly seats which were distributed between the AP and Telangana i.e., 175 seats for AP and 119 seats were allocated to State of Telangana.*

**KEYWORDS:** *Legislative Assembly, Assembly elections, majority, political parties, seats*

### LEGISLATIVE ASSEMBLY ELECTIONS OF AP-2014 AND 2019

The 2014 AP Legislative Assembly Elections were held on April 30, 2014 and the results were declared on May 16, 2014. The parties that contested in the Assembly elections are INC, CPI, CPI(M), TDP in alliance with BJP and JSP, YSRCP, NP and Independents. The TDP succeeded in securing a majority of 102 out of 175 Legislative Assembly seats and there by formed the government. YSRCP won 67 seats, BJP secured 04 seats and the Navodyam party and Independent secured 01 seat each where as INC did not secured any seat in the Legislative Assembly elections.

The 2019 AP Legislative Assembly elections were held on April 11, 2019 and the results were declared on May 23, 2019. The parties that contested in 2019 Legislative

Assembly elections are INC, BJP, TDP, YSRCP and JSP in alliance with CPI, CPI(M), BSP and other Independents. YSRCP swept the polls by winning 151 out of 175 Legislative Assembly seats. YSRCP won all seats in the Kadapa, Kurnool and Vizianagaram Districts. TDP won 23 seats and JSP won 1 seat where as INC and BJP did not secured any seat in the Legislative Assembly Elections.

The below Table-1 clearly shows that the strength of the AP Legislative Assembly- District wise data and also gives clear picture on 2014 and 2019 AP Legislative Assembly Constituencies along with No. of seats secured gained by the different political parties.



# EMERGING TRENDS IN INSURANCE – A STUDY IN INDIAN LIFE INSURANCE INDUSTRY”

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## ABSTRACT

Indian Life insurance sector is growing at a faster rate. This sun rising industry has given a platform for economic growth and employment. The great extent of importance realized after it has opened to the private players in the post liberalization period. With many players in business, the insurance regulatory and development authority came with innovative and constructive guidelines for both products and services. It was a period where companies were getting major revenue out of their Unit linked policies. During that time, both technology and investment knowledge were the key to success. Not only it was tough to convert from traditional to Unit linked products but also was a challenge to keep the profitability. Customer preference, stiff competition and regulatory control are acting as catalyst for innovative products and services. When the policy is procured through advisors, internal marketing and motivation to them cannot be avoided. Also claim management along with new policies procurement need a viable and robust system. Internet and online policy purchase is a new trend that has inspired the players to be more focused in their business. High in volume and low in margin is going to be the ways towards policy procuring. Rural, social and Micro insurance is a new avenue to be thought of. This paper discusses the new trends and challenges that the present industry is facing. The recent study is only limited to life insurance sector. The suggestion and commendation will help both academicians and industry personnel to re-engineer their thought in insurance sector.

Keywords: Life Insurance; Regulator; Plan; Insurance Industry

## INTRODUCTION

Insurance is one of the demanding financial products in India. Its basic motto is to protect the family of any uncertainty in life. So it is long term investment and need knowledge about that. Indian life insurance is too old. It is from British Period and after nationalization; it has come fully under Government.


In the post liberalization era, insurance has attracted many private players from different parts of the country to start business in India. India as a country has potential for growth of this business. With the upcoming of regulator in the year 2000, the business in India became more streamlined. Large players along with customer choice results in more competition. Life Insurance Corporation of India in one end and ICICI Prudential life insurance from private sector on the other end has taken maximum market share from both categories. Product innovation, profitable growth, multi channel distribution and ethical practices in business are few factors to be considered. Regulation from Government and research in this sector many times a challenge for the existing players. In this situation, a brief study of the above sector is required.

## STATEMENT OF THE PROBLEM










The study is indicated briefly to analyze the recent trends of the life insurance and its impact to the entire Insurance Industry.



## PAPER

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# Preparation and characterization of CdWO<sub>4</sub>:Cu nanorods with enhanced photocatalytic performance under sunlight irradiation†

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The objective of this work is to convert an ultraviolet active photocatalyst to a visible active photocatalyst and investigate the effect of copper (Cu<sup>2+</sup>) doping on the morphology and photocatalytic activity of CdWO<sub>4</sub>. Efficient visible light driven Cu<sup>2+</sup> doped CdWO<sub>4</sub> photocatalysts were successfully prepared by a hydrothermal method and characterized by various techniques. The XRD results revealed that CdWO<sub>4</sub> and Cu<sup>2+</sup> doped CdWO<sub>4</sub> have crystallized in a monoclinic wolframite structure. The SEM images displayed nano rod like morphology and as the Cu<sup>2+</sup> content is increased irregular structures were observed. The best photocatalytic activity was observed for Cd<sub>0.95</sub>Cu<sub>0.05</sub>WO<sub>4</sub> in the presence of H<sub>2</sub>O<sub>2</sub> under sunlight irradiation and it was found to be 5 times more than that of pristine CdWO<sub>4</sub>. The enhanced photocatalytic activity of the Cu<sup>2+</sup> doped CdWO<sub>4</sub> compositions leads to further improvement of the catalysts for environmental remediation.

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## 1. Introduction

An increasing rate of industrialization is quite necessary for the sustainable development of humanity and in the process a high rate of pollution is becoming inevitable. The emission of carbon dioxide (CO<sub>2</sub>) and release of organic pollutants like dyes from the textile industry could pollute air and water respectively. Semiconductor based photocatalysts have been extensively used for the reduction of CO<sub>2</sub> as well as the degradation of organic pollutants.<sup>1</sup> It is well known that the semiconductor titanium dioxide (TiO<sub>2</sub>) photocatalyst is widely used for environmental remediation due to its low price, chemical stability and non-toxicity. However, the catalytic efficiency of TiO<sub>2</sub> is limited under visible light irradiation owing to its large band gap energy (3.2 eV) and high electron-hole recombination.<sup>2–5</sup> Therefore, the development of new photocatalysts with high efficiency under visible light has been challenging to researchers.

In the recent past, metal tungstates, AWO<sub>4</sub> type materials (A = Ca, Sr, Ba, Pb, Zn, Cd and Cu), have found significant potential applications in photoluminescence, optical fibers,

medical science, scintillators, photocatalysis and humidity sensors.<sup>6–12</sup> Among the above mentioned metal tungstates, cadmium tungstate (CdWO<sub>4</sub>) is extensively studied due to its high thermal stability, low radiation damage and high refractive index. Because of the aforesaid properties CdWO<sub>4</sub> has been mostly used in X-ray detectors in computerized tomography, X-ray scintillators and photocatalysis.<sup>13–16</sup> Depending on the preparation conditions CdWO<sub>4</sub> crystallizes either in a tetragonal or monoclinic structure. The monoclinic wolframite structure shows higher photocatalytic activity than that of the tetragonal structure. However, the photocatalytic activity of monoclinic CdWO<sub>4</sub> is inadequate due to its large band gap energy (3.7 eV) and high electron-hole recombination, which in turn hinders the photocatalytic activity under visible light. To further enhance the photo activity of CdWO<sub>4</sub> different methods have been proposed such as doping with metal ions, e.g. Ag-CdWO<sub>4</sub>, Zn doped CdWO<sub>4</sub><sup>17,18</sup> and Eu doped CdWO<sub>4</sub>,<sup>19</sup> and formation of hetero junctions with other materials, e.g. g-C<sub>3</sub>N<sub>4</sub>/CdWO<sub>4</sub>,<sup>20</sup> CdWO<sub>4</sub>/Bi<sub>2</sub>WO<sub>6</sub>,<sup>21</sup> CdWO<sub>4</sub>/BiOI,<sup>22</sup> CdS/CdWO<sub>4</sub>,<sup>23</sup> and ZnWO<sub>4</sub>/CdWO<sub>4</sub>.<sup>24</sup> Among these two methods metal ion doping is a simple and effective method to tailor the band gap energy and enhance the photocatalytic activity of CdWO<sub>4</sub>. Hence we have selected the Cu<sup>2+</sup> metal ion as a dopant due to the following reasons: (i) Cu<sup>2+</sup> doping shifts the absorption edges to longer wavelengths i.e. into the visible region, (ii) Cu<sup>2+</sup> has high chemical stability and it is inexpensive and (iii) Cu<sup>2+</sup> can trap the electrons which are generated during the photocatalytic

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† Electronic supplementary information (ESI) available. See DOI: 10.1039/c9nj05763c



# DETERMINATION OF MANGANESE IN GRAPE WINE USING LIGHT EMITTING DIODE AS LIGHT SOURCE.

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## Abstract:

Many methods are available for determination of the manganese in different matrices. For example there are, X-ray fluorescence, voltammetry, atomic absorption spectrometry (AAS) and UV-VIS spectro- photometry ,Atomic absorption spectrometry is a technique widely used for quantification of manganese, but the apparatus used is more expensive than UV-VIS) spectrophotometry,Colorimetric method, Periodatecolorimetry, persulphate spectrophotometry, Formaldoxime (FAD) method and Pyridylazonaphthol (PAN) etc. but all these methods are quite expensive and require expert handling. However this method is very simple and very easy to perform. But it doesn't have its limitations. In this paper we describe an application of LED's to the determination of Mn in Wine samples. A simple apparatus using LED's as light source is described. The advantages of this apparatus are its low cost, versatility, and easy to build characteristics.

**Index terms:** LED (light emitting diode), Mn, Grape wine, PD Amplifier, LF 356 IC.and digital multimeter.

## Introduction:

Manganese is essential element in all known living organisms. Many types of enzymes contain manganese. Manganese is the fifth most abundant metal in the earth's crust and also it is considered to be 12<sup>th</sup> most abundant element in the biosphere. It is widely spread in soil, sediment, water, and biological materials. Although manganese is essential trace element for human body and other species of the animal kingdom as well as for plants.It is serving synthesis and activation of several enzymes including kineases, phosphatases and oxidoreductases., It plays an important role in the brain. However, excessive levels of this metal are harmful to the body, causing toxicity to the respiratory, cardiac and reproductive systems<sup>2</sup>The average human body contain about 12 milligrams of manganese. We take in about 4 milligrams each day from such foods as nuts, bran, wholegrain cereals, tea, and green vegetables.Without it bones grow spongier and break more easily. It is also essential for utilization of vitamin B1.In man chronic manganese excess affects the central nervous system, with the symptoms resembling those of Parkinson's disease. This is the reason why manganese belongs to highly toxic heavy metals.



# Studies on Photo Luminescence Spectra of Certain rare earth ions Doped Alkali Borotellurite Glasses

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**ABSTRACT:** The basic theory which deals with the various physical and the spectroscopic properties of lanthanide activated materials. It has been useful in understanding the lasing efficiencies of the non-crystalline materials towards the progress of the existing awareness in the glass technology. These results describe the formation and property characterization of the  $\text{Ho}^{3+}$  doped borotellurite glasses. This study gives a detailed analysis on the absorption, have been evaluated for all the glasses are studied. The applicability of Judd - Unfelt theory in understanding the absorption and emission properties of rare earth doped glasses has been verified by combining the absorption spectra computed parametric data with that of measured emission data. In the present study an attempt is made to find out wave lengths and densities of glasses and to bring out the formulation of the new series of high quality optical materials and the study carried out the different properties concerning physical, Luminescence spectra of the rare earth ion  $\text{Ho}^{3+}$  doped borotellurite glasses.

**KEY WORDS:** MODEL F-3010 Spectro photometer,  $\text{H}_3\text{BO}_3$ ,  $\text{TeO}_2$ ,  $\text{BaCO}_3$ ,  $\text{Li}_2\text{CO}_3$ ,  $\text{NaCO}_3$ ,  $\text{NaCO}_3$ ,  $\text{SmF}_3$ ,  $\text{DyF}_3$  and  $\text{EuF}_3$ .

## I. INTRODUCTION:

According to American Society for Testing Materials (ASTM) "glass is an inorganic product of fusion which has been cooled to a rigid condition without crystallizing". The glasses found in nature represent molten rock masses, which were extruded and cooled so quickly that they did not have time to become transformed into the usual aggregate of crystalline minerals. The commonest of these natural glasses, obsidian is usually translucent and blackish in color but it is

sometimes red, Brown or greenish and some varieties are transparent. It is easily broken into sharp, often elongated pieces, which lend themselves readily to the fashioning of arrow heads, spearheads and knives. Borosilicate glass for laboratory apparatus (Pyrex) is a twentieth century invention. Galileo's work on the motion of the planets with the astronomical telescopes needing glass lenses. Isaac Newton's pioneering work in optics begun in 1666. Other basic investigations which required glass apparatus were the classic investigations of the properties of gases (Boyle's law and Charles's law) thermometry, barometry and the development of microscopes. The inorganic non-oxide glasses such as the chalcogenides sharing many general structural similarities with oxides quite unexpected inorganic systems of which the halide, especially fluoride, glasses are the most notable metallic glasses and organic glasses. X-ray diffraction analysis of crystal structures was a particularly exciting field, which had an enormous impact on glass science. Glasses now play an increasingly important role in modern technology. Besides common glass, which is indispensable material in today's economy in architecture, transport, lighting, condition etc., there is a whole set of glasses which enter into more and more sophisticated applications in optics, electronics and opto-electronics, biotechnologies and so on.



# Determination of Fluoride Ion Concentration in Tooth Powder Sample by Designing and Developing of PC based Instrumentation

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**Abstract:** Several Indian fluoride dentifrices have in their packages as non-fluoridated tooth powders and also in their formulations calcium phosphate as abrasive, which may react with fluoride. The decline of dental caries in the industrialised countries can be attributed to wide spread use of fluorides. The Indian market share of dentifrices containing fluorides has increased day to day. This study was designed to evaluate the determination of fluoride ion concentration in certain tooth powder using the PC in the most consumed dentifrices in India. The fluoride ion concentration in certain tooth powder was determined using the spectroscopic method and by using the PC. All dentifrices showed similar concentrations of total fluoride in all samples in accordance with the Indian legislation (content of 1000 ppm F). In this study most of the Indian fluoridated dentifrices evaluated and they were found to have sufficient concentrations of fluoride ion to be effective in preventing dental caries.

**Keywords:** LED (light emitting diode), Tooth powder (colgate), optical fibre, cuvette PD Amplifier, LF 356 IC, PD amplifier, DIOT Card, and PC

**Summary:** Fluoride is an important anion, present in various environmental, clinical, and food samples. A small amount of fluoride is vital for the human organism, but is toxic in larger amounts. Fluoride components are used as active anti-caries ingredients. Their content is regulated by our sanitary legislation in concentration up to 0.15%.

## 1. Introduction

The Indian market share of dentifrices containing fluorides, such as sodium Mono Fluoro Phosphate (MFP) or Sodium Fluoride, has increased from 12% in 1985 to 77% in 2006. The addition of fluoride into the most Popular Indian Tooth Powders have in their formulations declaim Phosphate as an abrasive, which may react with fluoride ions released from MFP. The Indian legislation establishes the maximum fluoride content to be 1000 ppm F which is permitted in a dentifrice.

The prevalence of dental caries in developed countries has declined over the past several decades<sup>1</sup>. Several studies are in agreement that the main reason for the reduction of caries is the greater availability of fluoride in the oral environment, particularly the increasing use of fluoridated dentifrice over the last 25 years<sup>2,3</sup>.

For a fluoridated dentifrice to be effective in controlling dental caries, and adequate concentration of fluoride must be available. The soluble forms of fluoride are able to interfere with the dynamics of the caries process, reducing the remineralization and activating the demineralization of dentine and enamel.

It is required that at least 60% of the total fluoride present be present as a soluble ion either as  $F^-$  or  $PO_3^{4-}$ ,  $F_2$ . The later ion is rapidly hydrolyzed in the mouth to provide

$F^-$ . However some hydrolysis occurs slowly from the time of manufacture and combines with abrasive or other tooth powder constituents to form insoluble compounds so that the total soluble fluoride concentration falls with time. The minimum requirement for the anti-caries effect of a dentifrice is based on the available and stable fluoride in the formulation. However only the Indian legislation establishes the maximum fluoride to be 0.10% to 0.15% without specifying quality.

The measurement of fluoride ion is necessary in different fields of work and also to know the concentration levels in natural water since low fluorine i.e. < 1 ppm plays an important role in humans in the development of healthy bones and teeth. The estimation of fluoride ion gives valuable information. Therefore it is necessary to analyze the fluoride ion and to take proper and opt precautions.

No doubt, several investigators developed techniques for the measurements of different ion concentrations in different samples and several manufacturers are producing a variety of instruments for estimation of ions. But the attempts to design and develop the computer based integrated system for determination of fluoride ion in tooth powder is rather scarce particularly in India though they offer many advantages. Hence in the present study an attempt is made to design and fabricate a computer based determination of fluoride in tooth powder. No studies about the percentage of fluoride ion concentration in Indian dentifrices were found in the literature survey, for justifying this study.



# Studies on optical absorption Spectra of certain rare earth ions doped Borotellurite Glasses

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## ABSTRACT:

The basic theory which deals with the various physical and the spectroscopic properties of lanthanide activated materials. It has been useful in understanding the lasing efficiencies of the non-crystalline materials towards the progress of the existing awareness in the glass technology. These results describe the formation and property characterization of the  $\text{Ho}^{3+}$  doped borotellurite glasses. This study gives a detailed analysis on the absorption, have been evaluated for all the glasses are studied. The applicability of Judd – Ofelt theory in understanding the absorption and emission properties of rare earth doped glasses has been verified by combining the absorption spectra computed parametric data with that of measured emission data. In the present study an attempt is made to determine the refractive indices and densities of the glasses and also bring out the formulation of the new series of high quality optical materials and the study carried out the different properties concerning physical, absorption spectra of the rare earth ion  $\text{Ho}^{3+}$  doped borotellurite glasses.

**KEY WORDS:** MODEL F-3010 Spectro photometer,  $\text{H}_3\text{BO}_3$ ,  $\text{TeO}_2$ ,  $\text{BaCO}_3$ ,  $\text{Li}_2\text{CO}_3$ ,  $\text{NaCO}_3$ ,  $\text{NaCO}_3$ ,  $\text{SmF}_3$ ,  $\text{DyF}_3$  and  $\text{EuF}_3$

## INTRODUCTION:

According to American Society for Testing Materials (ASTM) "glass is an inorganic product of fusion which has been cooled to a rigid condition without crystallizing". The glasses found in nature represent molten rock masses, which were extruded and cooled so quickly that they did not have time to become transformed into the usual aggregate of crystalline minerals. The commonest of these natural glasses, obsidian is usually translucent and blackish in color but it is sometimes red, Brown or greenish and some varieties are transparent. It is easily broken into sharp, often elongated pieces, which lend themselves readily to the fashioning of arrow heads, spearheads and knives. Borosilicate glass for laboratory apparatus (Pyrex) is a twentieth century





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తెనాలి - 522 201, గుంటూరు జిల్లా, ఆంధ్రప్రదేశ్.



## భావచింత ప్రత్యేక సంచిక

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24, 25 ఆగస్టు 2020

## తెలుగు సాహిత్యం - సమకాలీనత



ప్రధాన సంపాదకులు :

**కె. వి. పద్మావతి**

వైస్ చాన్సలర్ & అధ్యాపకత్తి, తెలుగు విభాగం, వి.ఎస్.ఆర్ & ఎన్.వి.ఆర్ కళాశాల, తెనాలి.

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## అతడు అడవిని జయించాడు - ఏరుకల జీవిత అధ్యయనం

- చౌట చలకృష్ణ, తెలుగు అధ్యాపకుడు, వియన్ఆర్ & యన్విఆర్ కళాశాల, తెనాలి.

శ్రీ.క. పంత్ మిమిద్ కళాల్ప ఉత్తరార్థంలో ఆంగ్లసాహిత్య ప్రభావంతో తెలుగు సాహిత్యంలో అనేక ప్రక్రియలు వెలువడినవి. ఆంగ్ల ప్రభావంతో పుట్టిన ప్రక్రియలలో తలమానికమైనది నవలా ప్రక్రియ. అధునిక సాహిత్యంలో ఎక్కువ పాఠకాదరణ పొందిన ప్రక్రియ ఇది. ఈ ప్రక్రియ మొట్ట మొదటి సారిగా ఇటలీ దేశంలో ప్రారంభమైంది. "సాంఘిక జీవితానికి ప్రతిబింబంగా వ్యక్తుల జీవిత గమనాన్ని చిత్రిస్తూ జనుల ఆచార వ్యవహారాలను వ్యక్తీకరించే గద్య ప్రబంధం నవల" (తెలుగు నవలా వికాసం, మొదటి నాగభూషణశర్మ).

తెలుగు సాహిత్యంలో నరహరి గోపాలకృష్ణశెట్టి రచించిన 'రంగరాజచరిత్రము' మొదటి నవలగా పరిగణించబడుతుంది. ఆలాగే కందుకూరి వారి 'రాజశేఖర చరిత్ర', ఉన్నవ లక్ష్మీనారాయణ రచించిన 'మాలపల్లి' మొదలైన నవలలు సాంఘిక, సంస్కరణోద్యమం ఇతి వృత్తాలుగా వెలువడినవి. మధ్య తరగతి బ్రహ్మణ జీవితాల్ని ఇతి వృత్తంగా స్వీకరించి శ్రీపాద సుబ్రహ్మణ్యశాస్త్రి గారు సంప్రదాయబద్ధమైన జీవితాలు నేడు మారుతున్న సమాజంలో ఎలాంటి కష్టాలు ఏదుర్కొనాలో వివరించారు. స్త్రీ సమస్యలను పరిష్కరించాలంటు, స్త్రీ హృదయాన్ని అవిష్కరించాలంటు స్త్రీ స్వేచ్ఛను సమర్థించే ఇతి వృత్తంతో చలంగారు నవలలు రచించారు. హిందూ మత తత్వాన్ని వివరించే ఇతి వృత్తంతో విశ్వనాథ సత్యనారాయణ కూడా నవలలు రాశారు. 1940 తరువాత ఇతి వృత్తంలోనూ, శైలిలోనూ విప్లవాత్మకమైన మార్పులు వచ్చాయి. ఈ పరిణామానికి బుచ్చిబాబు, గోపిచంద్ లే కారణం.

స్వాతంత్ర్యానంతరం తెలంగాణ సాయుధ పోరాటం ప్రభావంతో నవలలు వెలువడ్డాయి. ప్రజలతో సహా

జీవనం చేసి, వారి విముక్తి కోసం పోరాటం చేసిన వీరుల జీవితం ఇతి వృత్తంగా నవలలు వెలువడ్డాయి. ఇందులో ముఖ్యమైనవి వట్టికోట అశ్వారూప్యమి రచించిన 'ప్రజల మనిషి', 'గంగు' లక్ష్మీకాంత రాసిన 'సింహ గర్జన' అలాగే తెలంగాణాలోని వ్యూడల్ భావాలను ఇతివృత్తంగా తీసుకొని దాశరథి రంగాచార్య రచించిన 'చిల్లరదేవుళ్లు' ముఖ్యమైనవి. స్వాతంత్ర్యానంతరం మొదటి దశాబ్ద నవలల ఇతివృత్తాలలో సామాజిక మార్పు అవసరమని నొక్కిచెప్పే వివిధ వర్గ పరమైన సమస్యల్ని వారి మనస్తత్వాల్ని విశ్లేషిస్తూ, గ్రామీన రాజకీయ కక్షలకు ఆధార పడుతూ నవలలు వచ్చాయి. వీటిలో కోడవటిగంటి కుటుంబరావు గారి 'చదువు, బిళ్ళెయ్యం, ఎండమావులు' ముఖ్యమైనవి. రావిశాస్త్రి గారు తన నవలల్లో సామాజిక స్థితిగతుల్ని ఇతివృత్తంగా తీసుకొని వివిధ మనస్తత్వాలను అవిష్కరించారు.

తెలుగు నవలా సాహిత్యంలో ఆటు స్వాతంత్ర్యానికి పూర్వం కానీ, ఇటు స్వాతంత్ర్యానంతరం కానీ వచ్చిన నవలల్లో సాంఘిక, సంస్కరణోద్యమం, జాతీయోద్యమం, మధ్య తరగతి బ్రహ్మణ జీవితం, స్త్రీ సమస్యలు, హిందూ మత తత్వం, మనోవైజ్ఞానికత, తెలంగాణ సాయుధ పోరాటం మొదలైన వాటిని ఇతివృత్తాలుగా రాయడం జరిగింది. కానీ సామాన్యంగా ఆతి సామాన్యమైన గిరిజనుల గురించి వచ్చిన నవలలు చాలా అరుదు.డా., కేశవరెడ్డి గారు గిరిజన తెగలలో ఒకటైన ఏరుకల జీవితాన్ని ఇతివృత్తంగా తీసుకొని "అతడు అడవిని జయించాడు" అనే నవలను రాశారు. ఈ నవల తమిళం, హిందీ, ఇంగ్లీషు, మరాఠీ, ఓడియా భాషలలోకి అనువదించబడింది.

1946 మార్చి, 10 వ తేదిన చిత్తూరు జిల్లా తలపులపల్లి గ్రామంలో జన్మించిన డా॥ కేశవరెడ్డిగారు తన రచనల్లో



# Account based Marketing in B2B industry

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## Abstract

Evolution of Account based marketing along with its benefits in the B2B industry over Lead Based Marketing and justifies why at all it is being denoted as one of the latest trends in the marketing arena. Over the years Account Based Marketing has grown tremendously and has been able to grab the eyeballs by conducting successful business. We will be learning about what process goes behind making this Marketing process popular and beneficial. Also this paper will help to gather knowledge about various techniques and tactics that are religiously followed by those Businesses engaged into adopting Account Based Marketing. It helps in opening up new avenues in the area of Marketing and enhances the knowledge base for marketers, academicians and researchers in the times to come.

## 1. Introduction

Account based marketing is the new trend in the digital marketing world. In 2016, it was found that more than 70% of B2B marketers are ramping up ABM specific programs, with having staff that are dedicated to account-based marketing which is as per a study conducted by Sirius decisions. While In 2015, only 20% of companies had ABM programs in place. Here comes the obvious question that what exactly is this B2B industry and why at all these industries are running after the ABM programs. Let's first understand how these B2B industries or markets work. Business-to-business is a situation where one business makes a commercial transaction with another. This typically occurs when a business is sourcing materials for their production process for output and is connected to the other business such as one involving a manufacturer and wholesaler, or a wholesaler and a retailer. It typically refers to a business that is conducted between companies, rather than between a company and



## 11 POLITICS AS AN INHERENT ELEMENT IN SAHGAL'S FICTION

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### **Abstract:**

*The function of literature is to catch the historical reality of the time, the spirit of society, expression of individualism and foreshadows of time. It represents the seething frustrations of the age and records the rebellious spirit. Every age has its own culture and in it resides the social ethos of the community. Any culture is the composite whole of various tendencies accepted and practised by the people in a particular society. The commonality does not question it but literary man does it with all his thinking, imagination and new ferment of ideas.*

*Mostly exploitation is resented by the writers and as such new ideas of social interest are forged by them. It happened in the days of the French Revolution. The banner displaying 'Equality, Liberty, and Fraternity' let the people fight against the monarchy. It was the result of the writers penning resentment against the monarchy and aristocracy. The organic nature of art makes it draw nourishment from diverse sources including politics, taken in its wider element of sense as embracing the multiplicity of contemporary scene with its economic, social and cultural aspects.*

*Nayantara Sahgal has a rare distinction of being the first Indian woman novelist writing in English, dealing with political themes. Starting her literary career in 1954, with her autobiographical work, *Prison and Chocolate Cake* (1954), she has written novels and journalistic columns for newspapers, delineating the contemporary Indian political scene between India's freedom and the declaration of emergency. She convincingly shows the changes occurred in India with the advent of freedom and the new challenges, hopes and aspirations of the people.*

**Key words:** *Politics, liberty, equality, freedom.*

The function of literature is to catch the historical reality of the time, the spirit of society, expression of individualism and foreshadows of time. It represents the seething frustrations of the age and records the rebellious spirit. Every age has its own culture and in it resides the social ethos of the community. Any culture is the composite whole of various tendencies accepted and practised by the people in a particular society. The commonality does not question it but literary man does it with all his thinking, imagination and new ferment of ideas. According to Shamota,

*The soil which nurtures optimistic talent is the culture of the people, the tastes, spiritual demands and life of the artist's contemporaries. In other words the artist is only the co-author of a magnificent creation known as the culture of the people.<sup>1</sup>*

Mostly exploitation is resented by the writers and as such new ideas of social interest are forged by them. It happened in the days of the French Revolution. The banner displaying 'Equality, Liberty, and Fraternity' let the people fight against the monarchy. It was the result of the writers penning resentment against the monarchy and aristocracy. The organic nature of art makes it draw nourishment from diverse sources including politics, taken in its wider element of sense as embracing the multiplicity of contemporary scene with its economic, social and cultural aspects.

The relationship between politics and literature has been an interesting field of study. Irving Howe,



## **The Role Of Hinduism In Social Progress With Reference To Sahgal's Novels**

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The word 'Hindu' doesn't find its appearance in any of the original scriptures of the Hindus, compared to Christianity and Islam doctrines which have come into existence in a defined form by God to a particular person at a particular time and place. Religious doctrines in Hinduism are realized and expressed through a gradual process of reflection by different individuals, covering many centuries. Through gradual evolution, a wide spectrum of beliefs and rituals has got assimilated into the body of Hinduism. As there is no clear definition for the idea of god-hood in Hinduism, various creeds or cults which are considered divine manifestations complementing each other, orient to the infinity of truth and well-being of human race. The basic truth underlying Hindu religious evolution is that truth is unique but its interpretation is many sided. When compared to Islam or Christianity, Hinduism remains vague. Hinduism does put forward certain key concepts despite its doctrinal vagueness.

What is called 'Hinduism' in the present day would not be destroyed as no invader or foreigner or practising Hindu could explore it in depth. Its roots are embedded in mysterious sources. Its branches invaded space. Hinduism is all – pervasive, all – inclusive and percolating into depths. The peculiar feature of Hinduism is that it does not lend itself to be fitted into any rigid pattern or framework. Unlike the other great religions of the world; Islam and Christianity, it does not have one founder, one scripture, or one way of life. It is precisely due to this reason that it is



## RESEARCH ARTICLE

Design, Synthesis and Anticancer Evaluation of Acetamides Comprising 1,2,3-triazole, 1,3,4-thiadiazole and Isothiazolo[4,3-*b*]pyridine Rings

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**Abstract:** We have synthesized a library of new 1,2,3-triazole incorporated 1,3,4-thiadiazole-isothiazolo[4,3-*b*]pyridine derivatives **12a-j** and have screened these products for their anticancer activities against four human cancer cell lines such as MCF-7 (breast cancer), A549 (lung cancer), DU-145 (prostate cancer), and MDA MB-231 (breast cancer) using MTT assay with etoposide as a positive control. Among them, compound **12e** has shown excellent activities against MCF-7, A549, DU-145, and MDA-MB-231 with IC<sub>50</sub> values of 0.53±0.055  $\mu$ M, 0.18±0.077  $\mu$ M, 0.10±0.082  $\mu$ M, and 0.92±0.041  $\mu$ M, respectively.

**Keywords:** 1,2,3-triazole, 1,3,4-thiadiazole, anticancer activity, azetepa, Carboxyamido triazole (CAI), isothiazolo[4,3-*b*]pyridine.

## 1. INTRODUCTION

Cancer is the second leading cause of death in both developing as well as undeveloped countries [1]. It is a very dangerous disease with rapid growth and uncontrolled spread of abnormal cells. Cancer can be due to several factors such as environment, diet, tobacco, radiations, etc. [2, 3]. Cancer cell lines can be destroyed by three different ways such as surgery, radiation therapy and chemotherapy. Among them, chemotherapy is a potent treatment for the inhibition of cancer cells. Most of the nitrogen-containing heterocyclic moieties act as cytotoxic agents in cancer chemotherapy [4-25].

1,3,4-thiadiazole constitutes a significant class of five-membered heterocyclic compounds and are extensively used in medicinal chemistry, organic synthesis, and material chemistry [26, 27]. The structure of  $-N=C=S$  in 1,3,4-thiadiazole derivatives can work as the active centre, chelate certain metal ions *in vivo*, and show good tissue permeability [28]. Recently, several 1,3,4-thiadiazole derivatives have been reported with different types of biological properties such as anticancer [29], antileishmanial [30], antihistamine [31], antibacterial [32], antioxidant [33], antiviral [34], antipsychotic [35], anti-inflammatory [36], antihypertensive

[37], analgesic [38], antimicrobial [39], antihepatitis B [40] and antidiabetic activities [41]. Some of the drugs such as azetepa (**1**, Fig. 1), has 1,3,4-thiadiazole unit as a part of the structure and showed antineoplastic activity [42].

On the other hand, 1,2,3-triazoles are among the most privileged *N*-heterocyclic pharmacophores and are also able to form hydrogen bonds with suitable targets [43, 44]. There is a common method for the synthesis of triazoles *via* copper-catalyzed azide-alkyne cycloaddition, a “click-chemistry” reaction firstly introduced by Sharpless [45, 46]. The 1,2,3-triazole containing compounds have been reported to demonstrate a broad spectrum of biological activities including anticancer [47], antineoplastic [48], antitubercular [49], antibacterial [50], antiHIV [51], antifungal [52], antimalarial [53], antidiabetic [54], anti-inflammatory [55], glycosidase inhibitors [56], and antiplatelet properties [57]. The carboxyamidotriazole (CAI, **2**) is an anticancer agent containing 1,2,3-triazole ring as a part of the structure [58-60] (Fig. 1).

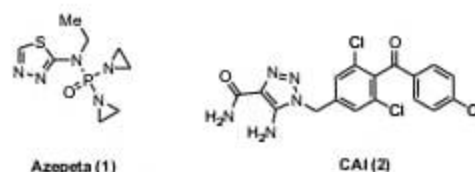


Fig. (1). Structures of azetepa (**1**) and CAI (**2**).

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Based on the above-mentioned reports on noteworthy biological significances of 1,3,4-thiadiazole and 1,2,3-triazole derivatives, it appeared that these frameworks could be the

[62]. This thioamide derivative **5** underwent cyclization by reaction with 30% H<sub>2</sub>O<sub>2</sub> in methanol (MeOH) at rt over 12 h time period then afforded pure 6-bromoisothiazolo[4,3-





## Ultrasound assisted synthesis of 3-alkynyl substituted 2-chloroquinoxaline derivatives: Their *in silico* assessment as potential ligands for N-protein of SARS-CoV-2

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### ABSTRACT

In view of recent global pandemic the 3-alkynyl substituted 2-chloroquinoxaline framework has been explored as a potential template for the design of molecules targeting COVID-19. Initial *in silico* studies of representative compounds to assess their binding affinities via docking into the N-terminal RNA-binding domain (NTD) of N-protein of SARS-CoV-2 prompted further study of these molecules. Thus building of a small library of molecules based on the said template became essential for this purpose. Accordingly, a convenient and environmentally safer method has been developed for the rapid synthesis of 3-alkynyl substituted 2-chloroquinoxaline derivatives under Cu-catalysis assisted by ultrasound. This simple and straightforward method involved the coupling of 2,3-dichloroquinoxaline with commercially available terminal alkynes in the presence of CuI, PPh<sub>3</sub> and K<sub>2</sub>CO<sub>3</sub> in PEG-400. Further *in silico* studies revealed some remarkable observations and established a virtual SAR (Structure Activity Relationship) within the series. Three compounds appeared as potential agents for further studies.

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Being the source of a global pandemic COVID-19 (coronavirus disease 2019) [1], the novel SARS-CoV-2 has already affected the health and economy of several countries severely. Nearly more than 450 thousand people have died throughout the world so far [2] and the number are increasing at a rapid pace. However, there are no promising vaccines and therapeutic drugs available till date to curb the spread of the SARS-CoV-2 worldwide. Thus there is an urgent need to address this global health problem. Multiple studies are in progress, employing diverse approaches to identify effective therapeutics to fight against SARS-CoV-2. For example, *in vitro* studies have suggested that chloroquine (A, Fig. 1), an immunomodulant drug traditionally used to treat malaria, might be effective in reducing viral replication in other infections, including the SARS-associated coronavirus (CoV) and MERS-CoV [3,4]. Its analogue hydroxychloroquine is also being explored as

an experimental treatment for COVID-19 [5]. Another drug Favipiravir (T-705, 6-fluoro-3-hydroxypyrazine-2-carboxamide) (B, Fig. 1), an anti-influenza drug which functions to selectively inhibit the RNA- dependent RNA polymerase of influenza virus [6] is being explored for this purpose in Japan. There are several protease inhibitors that are currently in clinical trials for SARS-CoV-2 include Indinavir, Saquinavir, Darunavir, ASC09, Ritonavir and Lopinavir [7].

In 2016 with the goal of finding the potential hit molecules against human coronavirus (CoV-OC43), Chang et al. conducted a molecular docking based virtual screening using nucleocapsid (N)-RNA binding domain as a target protein [8]. The primary function of this protein is to pack the viral RNA within the viral envelope into a ribonucleoprotein (RNP) complex called the capsid, which is a fundamental part of viral self-assembly and replication. Initially, based on docking score eight potential hits were identified, among which a quinoline derivative (C, Fig. 1) was emerged as the most potent compound that was supported by the experimental evidences based on surface plasmon resonance

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# **Ambedkar's Philosophy of Education - A Special Focus on the Primary, Higher and University Education.**

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## **Introduction:**

According to Dr.B.R.Ambedkar, education is the key for all round development. He believed that education improves the reasoning power of the human beings. For the over-all development of the society both education and financial resources are very essential. As the chairman of the constitution drafting committee, Ambedkar strongly believes that there should be free and compulsory education for the children up to the age of 14 irrespective of class, caste, race, region, and religion. He feels that knowledge is a liberating force and advises his followers to reach excellence in the field of knowledge. Education increases the self-respect of the individual and enlightens the man to lead a better life in the society. For segregated people, untouchability is a hindrance to get education which is the fundamental right of the individual. Lack of proper education at the grass root level made untouchables to remain outside the gates of development. Ambedkar criticizes the British policy of education which made the upper class to reap the fruits of education. In order to get the privilege of education for the untouchables and down-trodden people he funded various centers of learning. Not only that, as the member of executive council of Governor -General, he took initiative to issue scholarships for untouchables who were pursuing education abroad. Ambedkar personally feels that the lower caste people should undergo both liberal and technical education which is beneficial for the forthcoming generations of the country. He feels that education should be secular in nature without any inclination towards religious aspects. He feels that secular education automatically instills the thoughts of liberty and equality among the students.

## **His views on Primary Education:**

Ambedkar has made it clear that the motto of primary education is to see that every child steps into portals of primary school; leave it only at a stage when



# Fabrication and characterization of smart karaya gum/sodium alginate semi-IPN microbeads for controlled release of D-penicillamine drug

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O Sreekanth Reddy<sup>1</sup>, MCS Subha<sup>1</sup>, T Jithendra<sup>1</sup>, C Madhavi<sup>2</sup>  
and K Chowdoji Rao<sup>2</sup>

## Abstract

This article reports the fabrication of pH-sensitive microbeads from sodium alginate (SA) and modified karaya gum (KG). KG was modified by graft copolymerization using 2-hydroxyethyl methacrylate (2-HEMA) through in situ free radical polymerization reaction. The graft copolymer was blended with SA to develop microbeads by a simple ionotropic gelation technique. The microbeads were characterized by Fourier transform infrared spectroscopy, X-ray diffraction, differential scanning calorimetry, thermogravimetric analysis, and scanning electron microscopy. The effect of %HEMA and polymer blend ratio on the swelling capacity was investigated. Drug release kinetics of the microbeads was investigated under both pH 7.4 and pH 1.2 at 37°C. The drug release kinetics was analyzed by evaluating the release data using different kinetic models.

## Keywords

Sodium alginate, karaya gum, 2-hydroxyethyl methacrylate, graft copolymerization, microbeads

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## Introduction

Polymers (biodegradable and synthetic) are widely used in drug delivery because of their abundance in nature, biocompatibility, low toxicity, and biodegradability. Controlled novel drug delivery systems have been attracted for the past few decades. Among various controlled release carriers, polymer interpenetrating polymer network (IPN) hydrogel microbeads have shown much interest due to their unique properties such as particle size, phase stability, huge tendency to absorb water, and mechanical strength. Hydrogels have many advantages over other biomedical carriers because of their ability to swell under physiological conditions.<sup>1–6</sup>

2-Hydroxyethyl methacrylate (HEMA) copolymer-based hydrogels have been much interest in biomedical applications because of their hydrophilic character, nontoxicity, non-antigenic properties, and good biocompatibility.<sup>7–11</sup> The presence of hydroxyl and carboxyl groups in poly hydroxyethyl methacrylate (pHEMA) makes compatible with water, whereas the hydrophobic methyl groups and backbone impart hydrolytic stability to the polymer and support the mechanical strength of the polymer matrix. Poly HEMA hydrogels are resistant to high temperatures, acids, and bases. Hence they are stable against thermal and chemical reactants. Therefore, pHEMA hydrogels are suitable for the development of controlled drug delivery systems.<sup>12–14</sup>

Karaya gum (KG) is an acidic polysaccharide obtained from different *sterculia* species. KG is a branched polysaccharide that consists of D-galacturonic acid, D-galactose, L-rhamnose, and D-glucuronic acid. It is composed of rhamnogalacturonan main chain that contains  $\alpha$ -(1→4) linked D-galacturonic acid and  $\alpha$ -(1→2) linked L-rhamnosyl residues. Side

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## XANTHAN GUM GRAFT COPOLYMER / SODIUM ALGINATE MICRO BEADS COATED WITH CHITOSAN FOR CONTROLLED RELEASE OF CHLORTHALIDONE DRUG

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### Keywords:

Sodium alginate, Xanthan gum grafted N, N'-methylene diacrylamide, Chitosan, Microbeads, Drug delivery

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**ABSTRACT:** In the present work, temperature/pH-sensitive copolymer beads of chitosan (CS) coated sodium alginate/xanthan gum grafted N, N'-methylene diacrylamide have been synthesized by free radical polymerization in an atmosphere of nitrogen using AIBN/Fe<sup>2+</sup> redox pair initiator and Tetramethylethylenediamine (TEMED) as a catalyst followed by simple ionotropic gelation technique. These beads were characterized by Fourier transform infrared (FTIR) spectroscopy, Differential scanning calorimetry (DSC), Field emission scanning electron microscopy (FESEM) Energy-dispersive X-ray spectra (EDS) and X-ray diffraction measurements (X-RD). DSC and X-RD studies reveal the molecular dispersion of Chlorthalidone (CT) drugs. Swelling and drug release behaviors of these beads were investigated in simulated intestinal fluid (pH 7.4) and gastric fluid (pH 2.0) at 37 °C. Results illustrated that both the swelling and degradation of the optimized beads were influenced by the pH of the test medium, which might be suitable for intestinal drug delivery. The release mechanism was analyzed by fitting the release data into the Korsmeyer-Peppas equation.

**INTRODUCTION:** Hydrogels are a hydrophilic three-dimensional network of polymer chains formed from homopolymers, copolymers or macromers. Hydrogels are highly absorbent natural or synthetic polymeric networks, sometimes found as a colloidal gel in which water is the dispersion media. Hydrogels also possess a degree of flexibility very similar to natural tissue, due to their significant water content <sup>1</sup>. Hydrogels are environmentally sensitive to small changes in environmental parameters such as temperature, pH, or the concentration of metabolite and release their load as a result of such a change <sup>2</sup>.

Temperature-/pH-sensitive hydrogels are widely used in a variety of biomedical or pharmaceutical applications, such as molecular separation <sup>3</sup>, tissue engineering <sup>4</sup> and particularly in fabricating the controlled drug delivery systems <sup>5</sup>.

Chlorthalidone CT **Fig. 1** [2-chloro-5-(1-hydroxyl-3-oxo-2, 3-dihydro-1H-isindol-1-yl) benzene-1-sulfonamide] tautomerizes to a benzophenones form <sup>6</sup>. CT is an antihypertensive thiazide-like diuretic used in the treatment of edema associated with congestive heart failure. Compared with other thiazides like chlorothiazide, CT also shows long-lasting diuretic action. It is absorbed slowly from the gastrointestinal tract and is excreted largely as an unchanged drug. The overall duration of effect is 48 to 72 h and its usage in drug delivery application is scanty <sup>7</sup>. Xanthan gum (XG) is a heteropolysaccharide consisting of β-D-glucose, α-D-mannose and α-D-glucuronic acid <sup>8</sup>. Due to the presence of glucuronic acid and pyruvic acids in

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## Fabrication of Carboxymethylchitosan/Sodium alginate microbeads for controlled drug delivery of Valganciclovir hydrochloride

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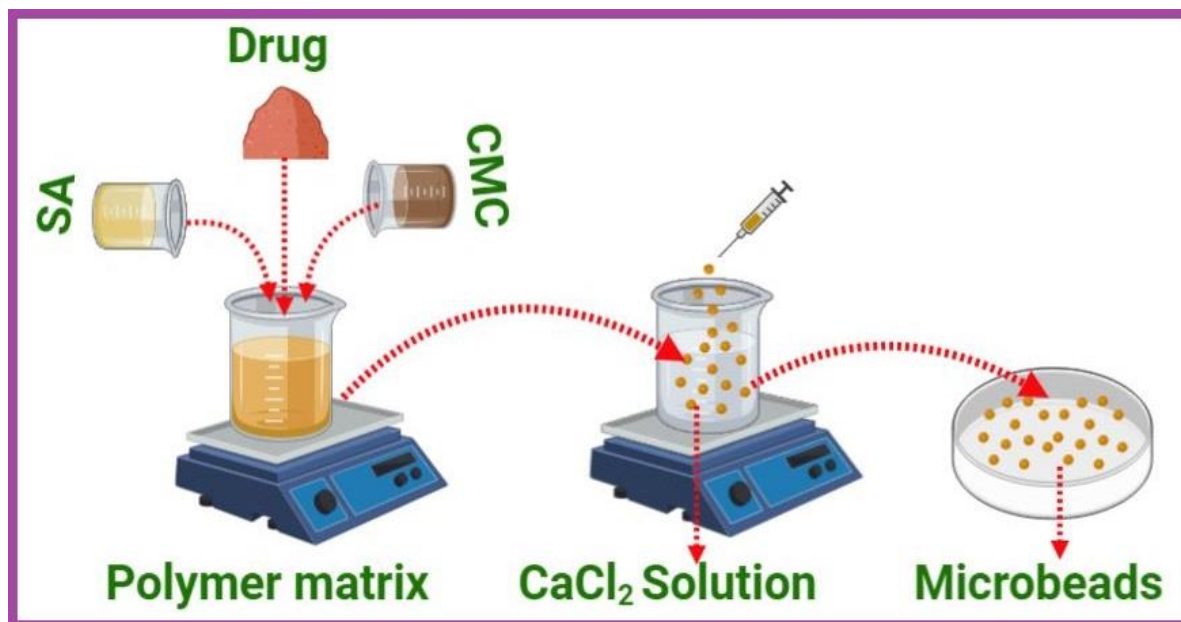
<sup>2</sup>Department of Polymer Science and Technology, Sri Krishnadevaraya University, Ananthapuramu-515003, India

### Abstract

This paper reports the fabrication of Carboxymethylchitosan (CMC)/Sodium alginate (SA) microbeads by emulsion crosslinking method for controlled release of Valganciclovir Hydrochloride (VCV) an antiviral drug. These microbeads were crosslinked with the help of glutaraldehyde/  $\text{CaCl}_2$ , and were characterized using Fourier transform infrared spectroscopy (FTIR), Differential scanning calorimetry (DSC), X-ray diffraction (X-RD) and scanning electron microscopy (SEM) techniques. Drug release kinetics of the microbeads is investigated *in vitro* simulated gastric fluid pH 1.2 and intestinal fluid pH 7.4 at 37°C. Results illustrated that these microbeads are influenced by the pH of test medium, Hence the microbeads are potential choice for intestinal drug delivery. The drug release kinetics were analyzed by evaluating the release data using different kinetic models. The results revealed a non-Fickian trend for the release of VCV up to 14 hr.

**Keywords:** Carboxymethylchitosan, Sodium alginate, microbeads, drug delivery.

### Graphical Abstract



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# FABRICATION OF DRUG DELIVERY SYSTEM FOR CONTROLLED RELEASE OF CURCUMIN, INTERCALATED WITH MAGNETITE NANOPARTICLES THROUGH SODIUM ALGINATE/POLYVINYLPIRROLIDONE-CO-VINYL ACETATE SEMI IPN MICROBEADS

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## ABSTRACT

**Objective:** The aim of the present work is to fabricate curcumin (CUR) encapsulated microbeads in the polymer matrix of sodium alginate (SA)/poly(vinylpyrrolidone)-co-vinyl acetate (PVP-co-VAc) intercalated with magnetite nanoparticles (MNPs) using glutaraldehyde (GA)/calcium chloride  $\text{CaCl}_2$  as the crosslinker.

**Methods:** Magnetite nanoparticles (MNPs) were synthesized by a modified co-precipitation method. Curcumin encapsulated SA/PVP-co-VAc microbeads, intercalated with MNPs were prepared by simple ionotropic gelation technique. The formation of microbeads and uniform distribution of curcumin were characterized using spectroscopic methods. In addition, swelling and drug release kinetic studies of the microbeads were performed in simulated intestinal fluid (pH 7.4) and simulated gastric fluid (pH 1.2) at 37 °C.

**Results:** Microbeads formation was confirmed by Fourier Transform Infrared (FTIR). Differential Scanning Calorimetry (DSC) studies reveal that the peak at 181 °C of CUR was not observed in CUR loaded microbeads, which confirms that CUR was encapsulated at the molecular level in the polymer matrix. The X-Ray diffraction (X-RD) diffractograms of CUR shows 2 $\theta$  peaks between 12-28 °, which indicated the crystalline nature of CUR, these peaks are not found in CUR loaded microbeads, suggesting that the drug has been molecularly dispersed in the polymer matrix. The X-RD 2 $\theta$  peaks of MNPs are observed in the MNPs loaded microbeads, which confirms that MNPs are successfully loaded in the microbeads. The swelling studies and *in vitro* release studies were performed at pH 1.2 and 7.4. The results reveal that at pH 7.4 highest swelling and release was observed, which confirms that the developed microbeads are pH sensitive and are suitable for intestinal drug delivery. The drug release kinetics fit into the Korsmeyer-Peppas equation, indicating non-Fickian diffusion.

**Conclusion:** The results concluded that the present system as dependent on pH of the test medium and hence suggest suitability for intestinal drug delivery.

**Keywords:** Sodium alginate, Poly(vinylpyrrolidone)-co-vinyl acetate, Magnetite nanoparticles, Curcumin, Microbeads

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## INTRODUCTION

The best acceptable route for drug administration is an oral route, due to ease of administration and gastrointestinal physiology provides additional flexibility in the design of dosage form compared to other routes [1]. Normally, conventional oral drug administration does not provide a controlled release or target specificity [2]. Further, it has several drawbacks such as poor patient compliance, frequent dosing, poor bioavailability etc. To overcome these problems novel drug delivery systems (NDDS) such as controlled/sustained drug release systems with IPNs (Interpenetrating polymer networks) have been evolved [3, 6]. Polymers play a vital role in the development of controlled drug delivery systems because of their favourable and flexible features such as biocompatibility, non-toxic, biodegradability and also it can be easily produced at industrial scale [4].

Sodium alginate (SA) is anionic polysaccharide, composed of two different kinds of hexuronic acid residues such as  $\beta$ -D-mannuronic acid (M) and  $\alpha$ -L-guluronic acid (G) arranged as random or in an alternating manner [5, 7]. It has several biomedical and biotechnological applications due to its specific properties such as hydrophilicity, biodegradability, biocompatibility and non-toxicity [8-10]

Poly(vinylpyrrolidone)-co-vinyl acetate (PVP-co-VAc) is a water soluble block copolymer consisting of both hydrophobic and hydrophilic components in its structure, which facilitates the increased solubilisation of drugs [11]. The presence of hydrophobic part in PVP-co-VAc, acts as a good drug carrier for hydrophobic or less water-soluble drugs. The applications of PVP-co-VAc in biomedical applications are scanty. Previously Bailly *et al.*, [12] reported that Poly(N Vinylpyrrolidone)-block-poly(vinyl acetate) (PVP-b-PVAc) is a good interesting candidate for the delivery of hydrophobic drug (clofazimine).

Curcumin (CUR), a polyphenol of turmeric (diferuloylmethane), a natural bioactive compound, is obtained from *Curcuma longa* [13]. It has anti-inflammatory, anti-oxidant, antimicrobial, antispasmodic and antiproliferative activity against different cancer cells [14-16]. However, its biomedical applications are very scanty due to low aqueous solubility, limited bioavailability and potentially lipophilic characteristics [17], which have limited *in vivo* efficacy of curcumin [18]. To overcome this problem, various types of micro and nanocarriers have been proposed, such as micelles, nanoparticles, and iron oxide particles [19].

Magnetite nanoparticles (MNPs) are increasingly being considered for a number of biomedical applications due to their inherent superparamagnetic properties, ultra-fine size and biocompatibility [20-22]. The functional properties of the MNPs can be tailored for specific biological functions, such as drug delivery [23], hyperthermia or magnetic targeting [24-26], magnetic resonance imaging (MRI) [27-29]. Among the MNPs, iron oxide nanoparticles (magnetite  $\text{Fe}_3\text{O}_4$  or magnetite  $\text{Fe}_2\text{O}_3$ ) are the most popular formulations. The large surface to volume ratio of MNPs renders relative high loading in biocompatible materials [28]. Owing to nanosize, MNPs can accumulate in tumor cells by the enhanced permeability and retention (EPR) effect [30]. Further malignant tumors have high heat sensitivity than normal tissues in the temperature range of 41-47 °C and the property is exploited for chemotherapeutic applications [31]. MNP drug delivery systems have incorporated small traditional molecules like paclitaxel, doxorubicin and methotrexate [22]. Natural macromolecules like curcumin have not been researched earlier with MNP combination for cancer therapy.

In the current work, SA/PVP-co-VAc microbeads were prepared by a simple gelation technique. The microbeads were characterized using fourier transform infrared spectroscopy, differential scanning





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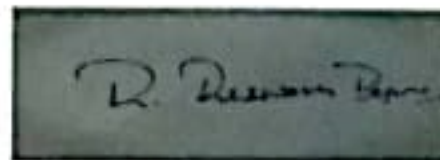
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# JG Ballard's Cocaine Nights: A Time-Space Configured Society

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## Abstract:

J. G Ballard is a name that changed the direction of science fiction from outer space to inner space. He says the true alien planet is the Earth. A novelist, short story writer, and an essayist Ballard associated himself with the New Wave movement in science fiction. He writes about bleak man-made landscapes, the effects of technology on the human psyche as well as apocalyptic and post-apocalyptic novels. His works tend to focus on themes like dystopic, social decay, and dehumanization. He keeps time and space at the center of the fictional world of his novels and due to his literary distinctiveness his kind of fictional works have earned the epithet: "Ballardian". His novels bring up ecological imbalanced landscapes caused by the technological advances while also dealing with the constructed Spatio-temporalities in the contemporary western world and present how they affect the lives of people in the post-modern world regulated by capitalist economy. In the present paper, a study is made on J.G Ballard's novel *Cocaine Nights* (1996) that explores the construction of a time-space configured society (Beckman 273) in the contemporary western urban. It speaks about how time and space are designed for comfort of man while bringing about the dark realities behind the veneer of such comforts and luxuries. It is a visionary work about realities, kinds of which are organized and regulated by the contemporary western capitalists. The novel fictionalizes the complexities of the social setup. It is contextual and relevant in the light of the increasing technologization and construction of time and space and man's yielding to this design. Through this novel, J.G. Ballard projects the future which is going to take place on this earth soon and shows how man's activities are overtly and covertly constructed, regulated, and managed by the capitalists.

**Keywords:** Time, Space, Boredom, Leisure, Capitalism, and Crime

In the history of science fiction (New Wave movement) and British literature, J. G Ballard occupies a significant place. J. G. Ballard has changed the direction of science fiction from outer space to inner space. He writes about the bleakness of man-made landscapes and the effects of technology on the human psyche. His works deal with the contemporary western landscapes. Regarding the place of eminence

of the writer in the history of contemporary literature, Iain Sinclair says, "In the pantheon of writers of the late 20th century I think he'd be right at the top." *The Wind from Nowhere* (1961), *The Drowned World* (1962), *The Burning World* (1964), and *The Crystal World* (1966): his initial works have dealt with natural disasters as their subject while his works written in his mid-career deal with the effects of technology on man - as in *Crash* (1973), *Concrete Island* (1974), and *High Rise* (1975). Novels written by him later are concerned with urbanization, gated communities and constructed realities - as in *Cocaine Nights* (1996), *Super-Creaks* (2005), *Millennium People* (2005) and *Kingdom Come* (2006).

David Harvey delivering a lecture on the concept of space states that "it is very difficult to speak without invoking the concept time" (Harvey 127). According to him "different societies produce qualitatively different conceptions of space and time [therefore] ... each social formation constructs objective conceptions of space and time sufficient unto its own needs and purposes of material social reproduction and organizes its material practices in accordance with these conceptions" (qtd. in Zieleniec Ch. 4). So there are multiple Spatio-temporalities existed in the world. Then, how does a particular Spatio-temporality get determined? Harvey explains that "it is very closely bound up with the power structures and social relations, particular modes of production and consumption, existing in a given society. Therefore the determination of what is space and what is time is not politically neutral but is politically embedded in a certain structure of power relations" (127). Thus we can say that the particular time-space is determined by the political and economic system of that society.





## **A COMPARITIVE STUDY OF INDIAN GENERAL ELECTIONS 2014 AND 2019-A STUDY**

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The Constitution of India established a federal structure to the Indian Government, declaring it to be a Union of States. Federalism in India describes the distribution of legal authority across National, State and Local Governments. Federalism in India is embedded from the Canadian model of Federalism. Part-XI of the Indian Constitution specifies the distribution of Legislative, Administrative and Executive powers between the Central government and State governments. The Legislative powers are categorized under a Union List, State List and a Concurrent List, representing respectively, the powers conferred upon the Union government, those conferred upon the State governments and powers shared among them. The Election Commission of India (ECI) has been established in 1950 to conduct free and fair elections. ECI is an autonomous constitutional authority responsible for administering election process in India at national, state and district level. The body administers elections to the Lok Sabha, Rajya Sabha, State Legislative Assemblies, State Legislative Councils and the offices of the President and Vice President of the country. Elections are usually conducted for every five years and if required are conducted from time to time.

### **Indian General Election-2014**

The Indian General Election, 2014 was held to constitute the 16<sup>th</sup> Lok Sabha, electing members of Parliament for all 543 Parliamentary Constituencies, running in the nine phases from 7 April, 2014 to 12 May, 2014. The results were declared on 16 May, 2014. The Bharatiya Janata Party (BJP) succeeded in securing a majority of 282 Parliamentary seats out of 543 Parliamentary seats and the BJP led National Democratic Alliance (NDA) won by 336 Parliamentary seats. The Indian National Congress (INC) alone won 44 Parliamentary seats and the INC led United Progressive Alliance (UPA) won 60 Parliamentary seats. Other parties and their Alliances won 147 Parliamentary Seats. The NDA in Indian General Elections 2014 include BJP, SS, TDP, LTP, SAD, RLSP, AD, PMK, SWP, AINRC, NPP & NPF. The UPA in Indian General Elections 2014 include INC, NCP, RJD, IUML, JMM, KC (M & RSP). The other



## **MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT ACT (MGNREGA)**

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India being a democratic country provides equality to all the people in the country which is important for preserving the dignity of an individual. Food for livelihood program has been the initiative taken by the Government of India for decent standard of living. Later on NREGA (National Rural Employment Guarantee Act) has been introduced in the year 2005, which was later renamed with the renowned leader Mahatma Gandhi as MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) which was passed in September 2005. This meant for the Indian labour law and social security measure that aims to guarantee the right to work and livelihood sustenance. It aims to enhance livelihood security in rural areas by providing at least 100 days of wage employment in the beginning of a financial year to every household whose adult members volunteer to do unskilled manual work. MGNREGA is to be implemented mainly by Gram Panchayats through rural people and the involvement of contractors are banned. The objectives of MGNREGA are as follows

### **Objectives of MGNREGA**

- Enhancing livelihood security by guaranteed wage employment. Employment under MGNREGA is a legal entitlement. Employment is to be provided within 5 kms of an applicant's residence and minimum wages are to be paid. If work is not provided within 15 days of applying, applicants are entitled to an unemployment allowance.
- To create durable assets such as roads, canals, ponds and wells etc.,
- The motive behind is to reduce rural-urban migration.
- Protecting the environment and nature.
- Proactively include the lower section into the society and development of social equity.
- To remove poverty through this Act.





## POLITICAL GLOBALIZATION

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Globalization is the process of growing exchange, interaction and integration between people, governments and private organizations across the world. Political Globalization refers to the amount of political cooperation that exists between different countries. It refers to the growth of the world wide political system both in the size and complexity. That system includes national governments, their governmental and inter-governmental organizations as well as government-independent elements of global civil society such as international non-governmental organizations and social movement organizations.

The key aspects of Political Globalization is declining importance of the nation-state and the rise of other actors in the political scene. Political Globalization is one of the three main dimensions of globalization other two being Economic Globalization and Cultural Globalization. The rise in the influence and power of international and regional institutions such as European Union (EU), Organization for Economic Cooperation and Development (OECD), United Nations (UN), World Trade Organizations (WTO), and Association for South-East Asian Nations (ASEAN) represent the examples of Political Globalization. These international and supranational actors increasingly shape domestic politics.

Political Globalization can be measured by aggregating and weighting data on the number of embassies and high commissioners in a country, the number of country's membership in international organization, its participation in the UN peacekeeping missions, and the number of international treaties signed by said country. The advantages and disadvantages of the Political Globalization are as follows:

### ADVANTAGES AND DISADVANTAGES OF POLITICAL GLOBALIZATION

The below Table-I shows the advantages and disadvantages of Political Globalization.

**TABLE-I**

S.NO	ADVANTAGES	DISADVANTAGES
1	It provides access to international aid and financial support.	Deprivation of state sovereignty is seen.
2	International Organizations are committed to spread values like freedom and to fight abuses within countries.	Big countries can shape decisions in supranational organizations.
	Governments learn from each other.	Coordination is difficult and expensive as many





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## PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY)

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Pradhan Mantri Gram Sadak Yojana (PMGSY) is a nation wide plan in India to provide good all weather road connectivity to unconnected villages. PMGSY Phase-I was launched in December 25, 2000 by the then Prime Minister Atal Bihari Vajpayee. It was initially a centrally sponsored scheme. Initially the objective of PMGSY was to provide single all weather road connectivity to eligible unconnected habitation of designated population size. Under this scheme 1,35,436 habitations were targeted for providing road connectivity and 3.68 lakh km for upgradation of existing roads including 40% renewal of roads funded by state governments. PMGSY Phase-II was approved in May, 2013. Under this Phase-II the roads already built was to be upgraded. The funding for plain areas is 75:25 by center and states respectively and 90:10 by center and states for hill states, desert areas, Schedule V areas and naxal affected districts. For LWE affected areas government launched road connectivity in 2016 and the fund sharing is 60:40 between center and states except North –East and three Himalayan states (J&K, Himachal Pradesh and Uttarakhand). PMGSY Phase –III was approved in July, 2019. This involves the consolidation of through routes and major rural links connecting habitations to Gramin Agricultural Markets, Hospitals and Higher Secondary Schools.

Under PMGSY, all unconnected habitations under 2001 censuses are

- More than 500 population in plain areas,
- More than 250 population in North-East, hill, tribal and desert areas,
- For Left Wing Extremism (LWE) affected areas additional relaxation has been given To connect habitations with population of 100 persons and above.

### PRINCIPLES OF PMGSY

The principles of PMGSY to be implemented in villages are

- \* A habitation which already have all weather road connectivity is not eligible even though the present condition of the road is bad.
- \* The population of all the habitations within a radius of 500 meters and 1.5 kms in case of hill areas may be clubbed together for the purpose of determining the size of a population.
- \* PMGSY provides only single road connectivity.
- \* The unconnected habitations are connected to the near by habitations already connected to a all weather road.
- \* Converting the dry season road to all weather road is treated as upgradation and Upgradations if permitted involves building existing road to desired specifications.

The below Table-I shows the funds releases under PMGSY State Wise data from 2014-15 to 2018-19



## RURAL DEVELOPMENT SCHEMES IN INDIA (2014-19) - A STUDY

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### INTRODUCTION

India is a country of villages and about 50% of the villages have very poor socio-economic conditions. Since the dawn of independence, concerted efforts have been made to improve the living standard of rural masses. The current population of India is approximately 1.33 billion people. India accounts for 17.7% of the World population which is second largest populated country in the World. Of the 1.33 billion population 65% people live in rural areas and 35% people live in urban areas. India has overall growth but rural areas still lack in development. So, rural development is an integrated concept of growth and poverty eradication has been of paramount concern in all the consequent Five Year Plans. The main focus of implementing the Rural Development Schemes is to curb urbanization and sustainable development of rural areas. "If the village perishes India will perish", according to Mahatma Gandhi.

Rural Development comprises of the following programmes in order to develop the rural areas. They are as follows





**SYNTHESIS OF (R)-METHYL 2-(2-(2-(4-(3-METHYL-5-OXO-4-(2-PHENYLHYDRAZONO)-4, 5-DIHYDRO-1H-PYRAZOL-1-YL) (PHENOXY) (ACETAMIDO) (ACETAMIDO) PROPANOATE**

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**ABSTRACT**

Methyl (2R)-2-(2-amino acetamido) propionate hydrochloride(**46**) was dissolved in chloroform and cooled to 0°C then add NMM and stirred for 15 min. then add 2-(4-(3-methyl-5-oxo-4-(2-phenylhydrazono)-4,5-dihydro-1H-pyrazol-1-yl)phenoxy)acetic acid (**45a**) in CHCl<sub>3</sub>, DCC and stirred for 24h, the reaction was monitored by TLC . After completion of the reaction, washed with CHCl<sub>3</sub>, the filtrate was washed with 5% sodium bicarbonate and saturated sodium chloride solution. Further the solvent was distilled under reduced pressure to give crude product, it was stirred with hexane to give (R)-methyl 2-(2-(2-(4-(3-methyl-5-oxo-4-(2-phenylhydrazono)-4, 5-dihydro-1H-pyrazol-1-yl) (phenoxy) (acetamido) (acetamido) propanoate **47**. The Yield was 60%.

**KEYWORDS:** Hydrazine hydrate, Pyrazole, Elemental Analysis, I.R. and <sup>1</sup>HNMR.

**INTRODUCTION**

Heterocyclic compounds represents an important class of biologically active molecules specifically, those containing the pyrazole nucleus have been shown to possess high biological activities such as tranquillizing, muscle relaxant, psycho analeptic, anticonvulsant, antihypertensive, antidepressant activities. The derivatives of pyrazole are important class of antipyretic and analgesic compounds.

**MATERIALS AND METHODS**

**Experimental**

All the chemicals were used as received without further purification. Melting points were measured on a gallenkamp electro thermal melting point apparatus and are uncorrected.





# An alternative route to the synthesis of N-(2-chloro-6-methylphenyl)-2-((6-(4-(2-hydroxyethyl)piperazin-1-yl)-2-methylpyrimidin-4-yl)amino)thiazole-5-carboxamide

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2-(4-(6-amino-2-methylpyrimidin-4-yl)piperazin-1-yl)ethan-1-ol

N-(2-chloro-6-methylphenyl)

-2-((6-(4-(2-hydroxyethyl)piperazin-1-yl)-2-methylpyrimidin-4-yl)amino)thiazole-5-carboxamide

## ABSTRACT

The target compound, N-(2-chloro-6-methylphenyl)-2-((6-(4-(2-hydroxyethyl) piperazin-1-yl)-2-methylpyrimidin-4-yl)amino)thiazole-5-carboxamide can be achieved by coupling between 2-bromo-N-(2-chloro-6-methylphenyl)thiazole-5-carboxamide and 2-(4-(6-amino-2-methylpyrimidin-4-yl)piperazin-1-yl)ethan-1-ol.

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## Specifications Table

Subject area	Organic Chemistry, Spectroscopy
Compounds	N-(2-chloro-6-methylphenyl)-2-((6-(4-(2-hydroxy ethyl)piperazin-1-yl)-2-methyl pyrimidin-4-yl)amino)thiazole-5-carboxamide
Data category	Spectral
Data acquisition format	NMR, IR, MS(ESI)
Data type	Analysed
Procedure	An alternative route to the synthesis of N-(2-chloro-6-methylphenyl)-2-((6-(4-(2-hydroxy ethyl)piperazin-1-yl)-2-methyl pyrimidin-4-yl)amino)thiazole-5-carboxamide
Data accessibility	Manuscript and supplementary data enclosed with this article

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## FABRICATION OF NANO CLAY INTERCALATED POLYMERIC MICROBEADS FOR CONTROLLED RELEASE OF CURCUMIN

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### ABSTRACT

**Objective:** The objective of this study was to formulate and evaluate the Curcumin (CUR) encapsulated sodium alginate (SA)/badam gum (BG)/kaolin (KA) microbeads for controlled drug release studies.

**Methods:** The fabricated microbeads were characterized by fourier transform infrared spectroscopy (FTIR), differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), X-ray diffraction (X-RD), and scanning electron microscopy (SEM). Dynamic swelling studies and *in vitro* release kinetics were performed in simulated intestinal fluid (pH 7.4) and simulated gastric fluid (pH 1.2) at 37 °C.

**Results:** FTIR confirms the formation of microbeads. DSC studies confirm the polymorphism of CUR in drug loaded microbeads which indicate the molecular level dispersion of the drug in the microbeads. SEM studies confirmed the microbeads are spherical in shape with wrinkled and rough surfaces. XRD studies reveal the molecular dispersion of CUR and the presence of KA in the developed microbeads. *In vitro* release studies and swelling studies depend on the pH of test media, which might be suitable for intestinal drug delivery. The % of drug release values fit into the Korsmeyer-Peppas equation and n values are obtained in the range of 0.577-0.664, which indicates that the developed microbeads follow the non-Fickian diffusion drug release mechanism.

**Conclusion:** The results concluded that the CUR encapsulated microbeads are potentially good carriers for controlled drug release studies.

**Keywords:** Sodium alginate, Badam Gum, Kaolin, Curcumin, Microbeads, Drug delivery

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### INTRODUCTION

A drug delivery system is designed to allow a therapeutic agent to be introduced into the biological organism and to enhance its effectiveness and safety by controlling the release rate, time and place of drug release in the body [1]. The development of effective therapeutic drug delivery systems is essential for medicine and health care in order to increase the safety, efficacy, and bioavailability of the drugs. Over the past few decades, polymeric matrices are used in many pharmaceutical applications because it offers various advantages like efficiency in administering the drug to the specific target at a proper time thereby improving the overall therapeutic response of a dosage form, high water absorption tendency and capable of swelling under physiological conditions [2-4]. Hence, the utility of polymeric materials is increasing day by day as the pharmaceutical industry expands globally. Now-a-days, Polymeric interpenetrating polymer network hydrogels have been widely used in biomedical applications such as drug delivery and tissue engineering due to their water intake capacity, biocompatibility, and biodegradability [5]. However, IPN hydrogels dosage forms have few drawbacks like uncontrolled swelling and release rate, which leads to several side effects. The polymeric networks are crosslinked with several crosslinking agents, coated with other polymers and intercalated with clay minerals, which control the release and swelling rates. Presence of clay minerals in polymeric matrices, minimizing side effects and maintaining the effective drug concentration in plasma over a period of time [6].

From the last few decades, clay minerals are used in solid and semisolid pharmaceutical preparations for topical and oral administration, as well as cosmetic formulations [7, 8]. Kaolin is a hydrated two-dimensional (2D) aluminosilicate clay mineral, used as active ingredients, due to their uninjured bioactivity and therapeutic effects. They are developed as a hemostatic agent, dermatological protector, anti-inflammatory agent and pelotherapy, or oral products as a gastrointestinal protector, antimicrobial, detoxifying or anti-diarrheal agent in health-care topical items [9-13]. Moreover, kaolin and its modified derivatives have recently been considered a

promising material in many areas of biomedical research, such as drug, protein and gene delivery, based on the high capacity of interaction with organic and biochemical molecules, bio-adhesion and cellular uptake. It can acts as an active ingredient or as adjuvant component in pharmaceutical dosage forms by controlling the efficiency and consistency in the dosage formulations and improving the drug bioavailability [14-16].

Sodium alginate (SA) is a linear polymer that has D-mannuronic acid and L-guluronic acid residues in the polymer chain, obtained from brown seaweed [17]. SA is one of the most adaptable, versatile polymers, widely used in the food, cosmetic, and pharmaceutical industries because of its properties like biocompatible, biodegradable, inherent hydrophilicity, non-toxic and good potentiality in drug delivery applications [18]. In recent decades, it is used as a potential tool for developing a different type of controlled, sustained, and targeted drug delivery systems. In addition, it is also used in the semisolid formulation and wound dressing applications [19]. Badam gum (BG) is a natural gum obtained from *Terminalia catappa* LINN, belongs to the family Combretaceae [20]. It can be used in pharmaceutical applications because of its abundant availability, reliability, efficiency, eco-friendly, and economical features. Previously Srikanth *et al.* [21] has reported that BG was used in controlled drug delivery systems as a retarding polymer for a highly soluble drug like propranolol HCl.

Curcumin is a natural bioactive compound derived from the *Curcuma longa* species and possesses a wide range of pharmacological properties such as antifungal, antiviral, antibacterial, anti-inflammatory, anti-malarial, antioxidant, anti-mutagenic agent, wound healing properties as well as it enhances anti-tumour activity against different types of cancer cells [22-24]. However, due to its poor water-solubility, short life and low bioavailability, the therapeutic use of CUR are limited [25, 26]. Generally, simple ionotropic gelation techniques are used to encapsulate hydrophilic drugs in hydrogel beads, but because of its poor water solubility, this technique gives low CUR encapsulation efficiency. Thus, in the present study, KA clay material was used to increase the drug encapsulation efficiency of CUR, the