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This is to certify that

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Research Scholar, Department of Home Science, Govt. Dr. W.W. Patankar
Girls' P.G. College, Durg (C.G.)

for the paper entitled

**SIGNIFICANCE OF HINDI LANGUAGE AND INTERNET USAGE AMONG
ADOLESCENCE**

University Grants Commission

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Editor

To Study the Effect of Anemia on Premenopausal Women

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ABSTRACT

Menopause is a normal biological process; it is not a disease. Although it is a natural process, it Causes many physiological changes. A female remains in reproductive stage from puberty to menopause. Menopausal transition includes three stages (1) Perimenopause- which starts before menopause. It may be of 3 to 5 years duration. (2) Menopause -Is about 12 months period after the last menstrual cycle. (3) Post menopause- Period after menopause. During pre-menopausal (peri-menopausal) period body produces less estrogen and many symptoms are produced. This study is an attempt to find out the effect of Anemia on Menopausal symptoms of women in Premenopausal stage. 45 premenopausal women of Bhilai township were selected for the study. Out of them 9 were suffering from Anemia. A significant association was observed between lethargy, irritation, cold sweat, Nervousness, mood swings, muscles pain and anemia in perimenopausal women.

Key Words : Premenopause, Anemia

INTRODUCTION

Middle age is the turning point in one's life because it brings many physiological changes. Premenopause occurs many years before menopause. During this period women experience many common symptoms of Menopause. It is the time to prepare oneself for Menopause.

During Perimenopause women usually experience changes in their monthly cycles. Menstrual flow may become irregular either heavier or lighter, this transitional phase usually last for 7 years but can continue for more year also. Premenopausal women are those who still have menstrual cycle with slight changes in length of cycles.

Aim:

This study is an attempt to find out the effect of Anemia on menopausal symptoms of women in Premenopausal stage.

Hypothesis:

Premenopausal symptoms are directly associated with state of anemia.

Review and literature :

The world health organization define anemia as hemoglobin concentration below 12 g/dl in women.

Saydam *et al.* (2017) found that anemia is associated in women below 50 years of age who have not entered Menopause.

Bernardi *et al.* (2016) conducted study and found that anemia in pre-menopausal state is associated with heavy or very heavy menses.

Nayak *et al.* (2012) conducted study on 209 premenopausal women and found that physical and psychosocial symptoms were more prevalent than vasomotor and sexual symptoms.

Ahuja (2016) conducted study on age of menopause and found that age of Menopause in India is less than

SIGNIFICANCE OF HINDI LANGUAGE AND INTERNET USAGE AMONG ADOLESCENCE

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Abstract

This research article, deals with the fact that, this is a time of concern to look forward and make sincere efforts to popularise Hindi, not only in the country, but also around the world. The present national education policy has stressed the importance of mother tongue- Hindi and has suggested various steps for this with the increasing use of internet specially after COVID-19, where students have gone through a big change in the present education system, which has moved to online. Since maximum number of students belong to a group who are not English speaking. Thus, it has become essential to make Hindi language web information to a satisfactory level. The presence of Hindi on the world wide web is still limited and tentative because of attitudinal and technical factors. Besides the other technical setbacks, the Hindi language search engines face many problems. This article deals with the performance of internet usage supporting Hindi language, specially amongst adolescence.

Keywords: Popularise, Internet usage, Education system, Search engine, Hindi language, Adolescence.

1. Introduction

The present research article deals with the fact, this is a time of concern to look forward and make sincere efforts to popularize Hindi, not only in the country, but also around the world with the increasingly use of internet specially after COVID-19, where students have gone through a big change in the present education system, which has moved to online. Since maximum number of students belong to a group who are not English speaking. With the web content being written in different languages, English is on the top position, while Hindi on the fifth. [1]

Hindi language information retrieval on the web is still in its nascent stage. The number of users who want the information in Hindi language is increasing. This leads to the demand of the Hindi information retrieval on the web. Hindi is spoken about 30% of people of the country, [2] and is also a major language of many newspapers, magazines, radio and television and media and so it is essential to develop powerful tools for Hindi language information retrieval.[3].

Languages are a medium of communication and Hindi is that language which connect the whole country. As per data available nearly half a billion people worldwide speak this wonderful language. Hindi also has a good presence on the internet these days and even Google recognizes Hindi as the primary Indian language. Hindi is not only a language but it is our cultural heritage. Our young citizens are the carriers of the culture could vanish. It is important for the younger generation to understand that to know your language is the key way to keep and preserve our culture. [4]

The present national education policy has stressed the importance of mother-tongue-Hindi and has suggested various steps for this with the increasingly use of internet specially by the adolescence of age group (13-17 years) at higher secondary level.

2. Hindi Language and Internet Searching

The spread of Internet in India is today constrained by the fact that mostly the English knowing have been benefited by Internet which is a disappointing situation as the real benefit of internet does not reach to the common man having less/no knowledge of English language. [5]

A recent survey by a Delhi based research organization – Juxt Consult - says that 44 % of existing Internet users in India prefer Hindi to English, if made available. Similarly, 25% existing Internet

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Acute toxicity and behavioural response of the food fish *Channa punctatus* (Bloch) to an Insecticide Trichlorfon

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ABSTRACT

Trichlorfon is an organophosphate insecticide and highly toxic pollutant, when enters in aquatic bodies through the rain water, it adversely affects the fauna of aquatic ecosystems. The aim of the present study was to assess the acute toxicity of Trichlorfon on food fish *Channa punctatus*. The fish were exposed to different concentrations of Trichlorfon to determine LC50 values for 96 h and study their behavioural effects on fish population. After the study we found that the test fishes exhibited erratic swimming, decreased rate of opercular movement, copious mucous secretion, increased surfacing and inability to balance on increasing exposure time.

Key words: Acute toxicity, *Channa punctatus*, Trichlorfon

Introduction

The term pesticide covers a wide range of compounds including insecticides, fungicides, herbicides, rodenticides, molluscicides, nematocides, plant growth regulators and others. They are used in agriculture to protect crop but it also influenced the environment through surface runoff and affects aquatic fauna and flora. Trichlorfon is a synthetic organic chemical used as an insecticide to protect the crops and animals from insect weeds and diseases. It is dense, colourless liquid that evaporates easily into air and dissolves slightly in water. It can enter in body through lungs if it is in the air and it enters through stomach when present in drinking water and react with an important enzyme in brain and nerves called acetyl cholinesterase and stop them working properly and muscles are disrupted. Many studies have been conducted to assess toxic

effects of Trichlorfon on an organism in the environment using indices including mortality, inhibition and growth inhibition.

Materials and Methods

The fresh water fish (*Channa punctatus*) collected from local fish market (average length and weighed ± 160.25 g) and washed with KMnO₄ Solution and kept it in aquarium capacity is 20 l. During this period fish were fed with rice brain mix mustard oil cake. Water was changed on alternate days.

After two weeks of acclimatization fish were exposed to different concentrations of Trichlorfon solution of 1 mg/ml. Solution of Trichlorfon was prepared in absolute alcohol. Fishes were divided into 5 groups of 20 fish each, and treated with 0.5, 0.1, 0.15 and 0.2 mg/l of Trichlorfon

TO CONSERVE MEDICINAL PLANTS OF CHHATTISGARH WITH SPECIAL REFERENCE TO BASTAR SAMBHAG WHICH ARE ECONOMICALLY IMPORTANT

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Abstract - This study was conducted to conserve the economically important medicinal plants in Chhattisgarh with special reference to basatar sambhag for this work identification of species with economic medicinal value & preparation of protocols for their conservation & sustainable utilizations done. The studies further show that the Family *Santalinaeae* (*Santalum Album*), *Apocynaceae* (*Ranwolfia Serpentina*, *Vinca rosea* / *Catharanthus roseus*) *Liliaceae* (*Casia augustifolia*, *Aloe verra*) has the highest number of plant species of economic value. Some of the economically important medicinal plant species yet to be collected & conserved, so as to receive attention from conservation scientists in Chhattisgarh.

Keywords:- Conservation, Medicinal plants, Chhattisgarh, Bastar Sambhag.

INTRODUCTION:- All the system of medicine including the Indian systems of medicine "Ayurveda", "Sidha", "Unani" entirely & homeopathy to some extent, depend on plant materials or their derivatives for the treatment of human ailments.

Medicinal plants grow naturally around us. Over centuries, cultures around the world have learned how to use plants to fight illness & maintain health. These readily available & culturally important medicines from the basis of an accessible & affordable health care regime & are an important source of livelihood for indigenous & rural populations.

As medicinal plants receive increased scientific & commercial attention, there is increasing pressure on the wild plant populations from which most medicinal plants are harvested. Over harvesting has placed many medicinal plants at risk of extinction.

For all these reasons, the study and conservation of economically medicinal plants in Chhattisgarh has become increasingly urgent. Conservation is the planned management of natural resources (medicinal plants), to retain the natural balance, to save a species becoming extinct. There is a strong fear that some of these plant species might be actually facing a serious threat of extinction. However, due to rapid spread of urbanization, increasing cost of land, random & careless harvesting of plant species for commercial gains, fragmentation of habitat are causing serious threat to existence of many of these plants species having economically medicinal values.

MATERIALS & METHODS:- This study involves intensive survey & several visits to the villages & forest for the economically important medicinal plants in Chhattisgarh (Jashpur, Raigarh Distt.). The study has adopted a comprehensive methodology which was explorative & diagnostic in nature providing justification & guidelines towards the preparation of Chhattisgarh Medicinal Plants Export Policy.

The study did capture the information about collection, marketing & processing of medicinal plants, through an intensive investigation probing exercise & socio-economic parameters for assessing the ground realities. Information about various Medicinal Plants availability, collection, processing, & conservation has been gathered from various officials at the Block, Distt. & Division levels.

RESULT & DISCUSSION:- In a study use & conservation of medicines by tribes of Jashpur & Raigarh Distt. Of Chhattisgarh, it was found that economically & medicinally important plants of the



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For the paper entitled

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दीपक कश्यप
अतिथि व्याख्याता अर्थशास्त्र
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स्नातकोत्तर महाविद्यालय दुर्ग (छ.ग.)

शोध सारांश

छत्तीसगढ़ राज्य अक्षय उर्जा विकास अभिकरण क़डा द्वारा अपारंपरिक उर्जा स्रोतों को बढ़ावा देने के उद्देश्य से सौर संयंत्र के माध्यम से विभिन्न परियोजनाओं का संचालन किया जा रहा है। राज्य में अविद्युतिकृत क्षेत्रों में कृषि का सिंचित रकबा बढ़ाने के उद्देश्य से 1 नवंबर 2016 को सौर सुजला योजना को लागू कर 3 एच. पी. एवं 5 एच. पी. क्षमता के सोलर पंपों की स्थापना रियायती दरों पर कि जा रही है। इस योजना का अध्ययन का उद्देश्य योजना के लाभान्वित हितग्राही की संख्या में वृद्धि, चुनौतियों एवं समस्या का अध्ययन है। अध्ययन द्वितीयक संमकों पर आधारित है तथा विश्लेषण के लिए प्रतिपगमन विधि का प्रयोग किया गया है। शासन की महत्वपूर्ण योजना अंतर्गत विद्युत पहुँच विहिन क्षेत्रों के कृषकों/गौठानों/चारागाहों में सोलर पंपों के माध्यम से जल उपलब्ध कराया जाता है। अब तक कुल 1369 नग सोलर पंप की स्थापना का कार्य किया गया है जिसमें कुल लाभान्वित हितग्राही की संख्या 1369 है। कृषकों को इस योजना का लाभ पहुंचाने के लिए ग्राम स्तर पर प्रशिक्षण शिविर लगाना आवश्यक है।

प्रस्तावना –

सौर उर्जा के प्रयोग से सतत विकास संभव है जिससे भावी पीढ़ी की उर्जा संबंधी आवश्यकताएँ पूर्ण हो सकेंगी। साथ ही गैर-नविकरण उर्जा संसाधनों की बचत हो सकेगी। इन साधनों की लगातार कमी का प्रभाव औद्योगिक उत्पादन लागत पर पड़ने से कीमतें लगातार बढ़ी हैं। आज ताप उर्जा के कई क्षेत्रों में व्यापारिक तौर पर सौर उर्जा का उपयोग किया जा रहा है। इसके माध्यम से ग्रामीण क्षेत्र में पम्प सेट चलाने एवं सड़कों की बलियाँ जलाने का कार्य किया जा रहा है। जिससे बड़ी मात्रा में उर्जा के व्यापारिक स्रोतों की बचत की जा सकती है। उर्जा संकट से कवल मात्रात्मक ही नहीं वरन् मूल्यात्मक एवं वितरणात्मक समस्याएँ भी उत्पन्न हो गयी हैं। वर्तमान समय में बिना उर्जा के उपयोग के वैज्ञानिक एवं तकनीकी लाभों को प्राप्त करना संभव नहीं है इसलिए अब यह आवश्यक हो गया है कि उर्जा खपत की मांग की पूरा करने के लिए वैकल्पिक उर्जा स्रोतों का उपयोग किया जाए। सूर्य असीमित उर्जा का स्रोत है। जब तक सौर मण्डल रहेगा तब तक उसके समाप्त होने की संभावना नहीं है। भारत में प्रतिवर्ष 5000 ट्रिलियन किलोवाट घंटा के बराबर सौर उर्जा प्रकृति से मिलती है। यदि इस उर्जा को विद्युत उर्जा में परिवर्तित कर दिया जाए तो बहुत बड़ी मात्रा में उर्जा संबंधी समस्या को हल किया जा सकता है। आर्थिक विकास के साथ-साथ उर्जा की मांग में भी वृद्धि हुई है किन्तु मांग के अनुरूप उत्पादन नहीं हो रहा है। हाइडोजन विजन 2025 में यह अनुमान लगाया गया है कि वर्ष 2024-25 तक देश में 240 मिलियन टन पेट्रोलियम उत्पाद को वार्षिक मांग होगी जबकि वर्तमान में यह 146.5 मिलियन टन है। भारत में 90% उर्जा संबंधी आवश्यकताओं की पूर्ति कोयला खनिज तेल तथा प्राकृतिक गैस जैसे परम्परागत उर्जा स्रोत से हो रही है किन्तु परम्परागत स्रोतों का भण्डार अत्यधिक सीमित है। यही कारण है कि भावी उर्जा आवश्यकताओं को ध्यान में रख कर ताप उर्जा के कई क्षेत्रों में व्यापारिक तौर पर सौर उर्जा का उपयोग बढ़ रहा है।

Optical Properties of Fine Mode Aerosols over High-Altitude Himalayan Glacier Regions

Sushant Ranjan Verma, Shamsh Pervez,* Judith C. Chow, John G. Watson, Syed Muzaffarali Andrabi, Papiya Mandal, Noor Afshan Khan, Suresh Tiwari, Umesh Chandra Dumka, Rajan K. Chakrabarty, Madhuri Verma, Yasmeen Fatima Pervez, Archi Mishra, Aishwaryashri Tamrakar, Hulivahana Nagaraju Sowmya, Manas Kanti Deb, Kallol K. Ghosh, Vikas Kumar Jain, Indrapal Karbhal, Kamlesh Shrivastava, and Manmohan Lal Satnam



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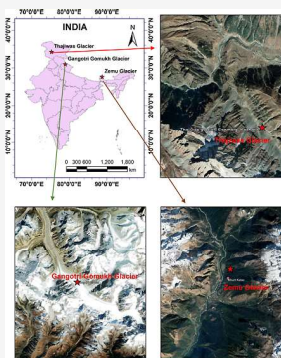
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Supporting Information

ABSTRACT: During the summer and winter periods of 2019–2020, we conducted sampling of fine mode ambient aerosols in the western Himalayan glacial region (WHR; Thajiwas glacier, 2799 m asl), central Himalayan glacial region (CHR; Gomukh glacier, 3415 m asl), and eastern Himalayan glacial region (EHR; Zemu glacier, 2700 m asl). We evaluated the aerosol optical properties, which included the mass absorption coefficient, mass absorption efficiency, mass scattering efficiency, absorption angstrom exponent, single scattering albedo, as well as their simple radiative forcing efficiencies. We observed the highest absorption in the near ultraviolet–visible wavelength range (200–400 nm), with CHR showing the highest absorption compared to the other two sites, WHR and EHR, respectively. Across the wavelength range of 200–1100 nm, the overall contribution of black carbon to light attenuation was greater than that of brown carbon. However, brown carbon dominated the absorption in the near UV–visible wavelengths, providing evidence of its non-trivial presence over the Himalayan region. Additionally, we observed a positive radiative forcing (W/g), which leads to net warming at these sites. The findings of this ground-based study contribute to our understanding of the light-absorbing nature of carbonaceous aerosols and their impact on the Himalayan glacier regions.

KEYWORDS: light-absorbing aerosols, carbonaceous matters, radiative forcing, Himalayan glacier, brown and black carbon



1. INTRODUCTION

The Himalayas, often called the “Third Pole” or the “Asian water tower,” have witnessed excessive glacier melting in recent decades.¹ Carbonaceous aerosols of anthropogenic origin significantly contribute to glacier melting.² Aerosols deposited on the glacier surface reduce its albedo (reflectivity) and accelerate the melting process. Glacier melting has far-reaching implications, including climate change, water resource availability for downstream communities, and alterations in river flow patterns. Carbonaceous aerosols are primarily generated by natural sources like volcanic eruptions and sea spray, as well as human activities such as fossil fuel combustion and biomass burning. During the pre-monsoon period, the primary driver of carbonaceous aerosol abundance over the Himalayas is the long-range transport from the Indo-Gangetic plains.^{3,4} In addition to long-range transport, local sources such as cooking and heating activities also contribute a significant amount of carbonaceous aerosols to the nearby atmosphere.

The major components of carbonaceous aerosols include organic carbon (OC), elemental carbon (EC), sulfate, mineral dust, and nitrate. OC and EC, also known as brown carbon (BrC) and black carbon (BC), respectively, due to their light-absorbing nature toward solar radiation, play a crucial role in

climate forcing by influencing the radiative balance and cloud formation.⁵ BC is known to warm the atmosphere by absorption of solar radiation, whereas OC shows strong scattering behavior across the broad range of the solar spectrum.^{6,7} However, recent studies have observed that OC exhibits strong absorption in the near ultraviolet wavelengths of the shortwave spectrum.^{8–11} Smoldering or low-temperature combustion of biomass burning is a major source of BrC.^{8,9,12–14} Previous studies examining light absorption by OC and EC have shown that OC has lower absorption than BC in the ambient atmosphere, from the near infrared to UV–visible spectrum.¹⁵ However, OC can have mass emissions that is 3–12 times larger than that of BC, making it important to study the light absorption properties of BC and OC component wise.^{16,17}

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Chemical fractionation of particulate-bound metal(loid)s to evaluate their bioavailability, sources and associated cancer risk in India

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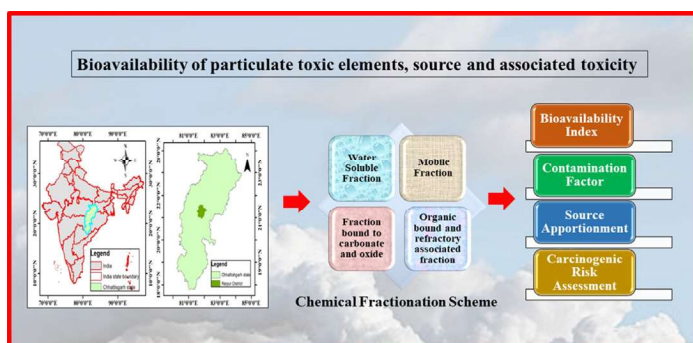
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HIGHLIGHTS

- Chemical fractionation of 11 metal(loid)s in Indian ambient fine and coarse particulates
- PM_{2.5} metal(loid)s bioavailable fractions are 2.4-fold higher than those for coarse mode.
- Mn has shown highest bioavailable fraction in both fine and coarse particulate mode.
- Source apportionment of fine and coarse particulate metal(loid)s bioavailable fractions
- Bioavailable index, contamination factors and Carcinogenic risks were estimated.

GRAPHICAL ABSTRACT



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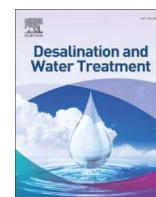
Chemical fractionation
Bioavailable fraction
Source apportionment
Cancer risk
Health risk index
Source markers

ABSTRACT

Eleven potentially toxic metal(loid)s (Al, As, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, and Zn), proven source markers of mineral based coal-fired industrial emissions and vehicular exhausts, were analysed using the four steps sequential extraction method to evaluate metal(loid)s concentration, in total and fractions of bioavailable and non-bioavailable for fine (PM_{2.5}) and coarse (PM_{10-2.5}) particulate modes. A total of 26-day-wise samples with three replications (total number of samples = 78) were collected in January–December 2019 for each PM₁₀ and PM_{2.5} at an urban-residential site in India. In both the coarse and fine particulate modes, Pb and Cr have respectively shown the highest and lowest total concentrations of the measured metal(loid)s, indicating the presence of coal-fired power plants and heavy vehicular activities near to study area. In addition, Mn has shown highest bioavailable fraction for both coarse and fine particulate modes. More than 50 % of metal(loid)s concentration, in total to a bioavailable fraction (BAF) were observed in case of As, Cd, Cr, Co, Mn, Ni, and Pb of PM_{2.5}. Mn and Zn have shown similar behaviour in the case of coarse particulate mode. Source apportionment of metal(loid)s bioavailable fractions using positive matrix factorization (PMF 5.0) has found three significant sources: crustal and natural dust (30.04 and 39 %), road traffic (49.57 and 20 %), and industrial emission (20.39 and 41 %) for coarse and fine particulate mode, respectively. Cancer risk through the inhalation pathway was high in total concentration but lower in BAF concentration in both age groups (children and adults).

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Applications of different adsorbent materials for the removal of organic and inorganic contaminants from water and wastewater – A review

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ABSTRACT

Increasing wastewater production is posing a threat to the safety and cleanliness of the water. Adsorbents have been used in various industries to remove contaminants from wastewater. In this review, naturally occurring and laboratory-synthesized adsorbents, their past and recent advancements, and future wastewater treatment strategies are comprehensively described. Nanomaterials (NMs) have been extensively used as adsorbents due to their high surface area, porosity, low density, and chemical stability. For effective implementation, the adsorption capacity of NMs is optimized. Compared to larger counterparts, nanomaterials have been found to have higher adsorption rate constants, making them more effective adsorbents. The adverse effects associated with the synthesis and application of these adsorbents are discussed. This review also addresses some significant issues concerning these adsorbents, which could impact future research and practical applications of nano adsorbents for water safety.

1. Introduction

The scarcity of clean water and the contamination of existing water sources has become a global issue, necessitating the development of new technologies for water and wastewater treatment in order to prevent adverse impacts on human health and the environment [1]. Population and industrial growth across the world have caused a major crisis of clean water availability for potable use [2]. Out of the Earth's entire freshwater supply, only a small fraction (1%) is easily accessible for human use. The majority of this vital resource is trapped in glaciers and polar ice caps (69%) or lies underground (30%) (Fig. 1). According to

WRI (2023) [3], India is one of the countries that are experiencing high levels of water stress. Approximately 75 million population in India lack access to clean drinking water, representing the highest percentage of any Asian nation [4]. Groundwater and surface water are in high demand for domestic, industrial, and agricultural purposes. However, the rate of groundwater pumping is much higher than its replenishment capacity [5,6]. Surface water is also polluted by anthropogenic activities and natural processes [7]. These surface water pollutants leach into groundwater, creating a serious problem of safe water usage [8,63]. Wastewater contains pollutants such as heavy metal ions, non-metallic salts, acids, bases, dyes, aromatic phenols, pesticides, pharmaceuticals,

Abbreviations: AC, Activated Carbon; AgNP, Silver Nanoparticle; BMTTPA, 2,5-Bis (Methylthio) Terephthalaldehyde; BOD, Biochemical Oxygen Demand; BPA, Bisphenol-A; BP-AC, Banana Peel-Activated Carbon; BTEX, Benzene, Toluene, Ethylene, and Xylene; C-AC, Commercial Activated Carbon; CaFu, Calcium Fumarate; CBZ, Carbamazepine; CH, Chitosan; CMC, Carboxymethyl Cellulose; CMX, Chloroxylene; CNT, Carbon Nanotube; COD, Chemical Oxygen Demand; COF, Covalent-Organic Frameworks; CTF, Covalent Triazine Framework; DMTP, Dimethoxyterephthaldehyde; DWCNT, Double-walled carbon nanotube; G, Graphene; GO, Graphene Oxide; HAP-Al, Hydroxyapatite/Alginate; IC, Indigo Carmine; IL, Ionic Liquid; KMS, $K_{2x}Mn_xSn_{3-x}S_6$; MB, Methylene Blue; MLD, Million Liter Per Day; MNP, Magnetic Nanoparticle; MOF, Metal-Organic Framework; MOP, Mercapto Orange Peel; M-RGO, Magnetic- Reduced Graphene Oxide; MWCNT, Multi-walled carbon nanotube; NMs, Nanomaterials; NPs, Nanoparticles; NPT, N-Phenylthiourea; PAH, Poly Aromatic Hydrocarbon; Ppy, Polypyrrole; rGO/RGO, Reduced Graphene Oxide; RHA, Rice husk activated; RhB, Rhodamine B; ROS, Reactive oxygen species; SNF, Silica Nano fiber; SNP, Silica Nanoparticle Single-walled carbon nanotube; TAPB, Tris (4-Aminophenyl) Benzene; THF, Tetrahydrofuran; TOC, Total Organic Carbon; TPB, Triphenyl Benzene; VOC, Volatile Organic Compound; β -CDP, β -Cyclodextrin Polymer

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