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## 3.3: Research Publications and Awards

3.3.1: Number of research papers published per teacher in the Journals notified on UGC care list during the last five years

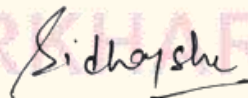
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01	05	07	Nil	Nil



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# Women Entrepreneurship: Problems & Prospects

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## LITERATURE REVIEW ON EFFECTS OF AIR POLLUTION ON HUMAN HEALTH (NCR REGION)

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### Abstract:

Hazardous chemicals escape to the environment by a number of natural and/or anthropogenic activities and may cause adverse effects on human health and the environment. Increased combustion of fossil fuels in the last century is responsible for the progressive change in the atmospheric composition. Air pollutants, such as carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOCs), ozone (O<sub>3</sub>), heavy metals, and respirable particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), differ in their chemical composition, reaction properties, emission, time of disintegration and ability to diffuse in long or short distances. Air pollution has both acute and chronic effects on human health, affecting a number of different systems and organs. It ranges from minor upper respiratory irritation to chronic respiratory and heart disease, lung cancer, acute respiratory infections.

### Introduction:

The World Health Organisation (WHO) has recognised ambient air pollution as a class one carcinogen and the fourth highest risk factor for premature death worldwide. In Asia, the situation is exacerbated by rapid urbanisation, industrialisation, and deficiencies in supporting infrastructure. Already in 2010 the Clean Air Initiative for Asian Cities indicated that 58% of Asian cities (out of 230) had annual PM<sub>10</sub> concentrations exceeding the WHO annual mean interim target-1 of 70 µg/m<sup>3</sup> for PM<sub>10</sub> and, moreover, Amann et al report that 40% of cities with the highest concentrations of PM<sub>2.5</sub> are in India. Previous studies across India have shown strong correlations between respiratory problems, mortality rate, premature death, and air pollution levels. Addressing this problem is now paramount.

Delhi, the capital city of India, is inhabited by approximately 16.7 million people. It is also the third largest urban agglomeration in the world. Delhi is ranked among the most polluted cities in the world. The primary contributors to air pollution in Delhi are both natural and anthropogenic like industrial units, vehicular emission, road dust, tire pads, construction activities etc. Control Board had noted many of the establishment had idle pollution control devices and short chimney. Transport sectors contribute around three fourth of pollutants in air of Delhi. Vehicular sources alone generate more than 3000 metric tons of pollutants per day. Delhi, with a little over 1% of India's population, is home to a 10% of the vehicular load of the country. The motor vehicle fleet was 9.6 million in the year 2015. The number of vehicles per kilometer of road in Delhi has gone up from 128 to 191 between 2003 and 2009. Moreover, ongoing large scale construction activities contribute dust in the air. The ever increasing sources and lack of sink potential due to Delhi has approximately nine lakh registered industrial establishments. Central pollution de-forestation have also led to high ambient air pollutant concentration within the city. Climate plays an important role in determining level of pollutants at Delhi. Delhi has cool dry air and inversion in air stratification with low wind velocity during winter. Such condition prevents dispersion of air pollutants. A crop residue burning of 500 million tons during winter in surroundings of Delhi causes smog formation because of inversion. In summer, air quality gets deteriorated due to dust storms originating from Thar desert and middle-east Asia. Dust in polluted environment become harmful because of coating of pollutants. Moreover, Delhi being a land locked city, is not able to dilute its pollutants by moderating effect of sea. Air pollution is a major environmental problem affecting the health of people in both developed and developing countries. The United Nations Environment Programme (UNEP) had estimated that globally 1.1 billion people breathe unhealthy air. In the past, several studies have highlighted the significant contribution of ambient air pollution in human morbidity and mortality. In the year 2012, World Health Organization (WHO) reported that around seven million people died and one in eight of total global deaths were attributable to air pollution. Air pollution has contributed to about two-thirds of cardiac mortalities and one-third of deaths due to Chronic Obstructive Pulmonary Diseases (COPD).



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Dr. Ram Niwas Sangwan

Subject: Publication of paper at International Journal of Creative Research Thoughts.

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## पन्त कृत 'लोकायतन' में आध्यात्मिकता

डॉ. सुशीला लान्ना  
सहायक प्राध्यापिका, हिन्दी  
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मेवाड़ी (हरियाणा)

शोध आलेख सार

'लोकायतन' चिन्तन-प्रधान महाकाव्य है। यहां महाकाव्यकार का उद्देश्य समतल पर दिव्य जीवन के आविर्भाव के विकास को प्रस्तुत करना है। कवि ने इस सन्दर्भ में जिन आध्यात्मिक विचारों को यहां प्रस्तुत किया है, वे सब किसी ने किसी रूप में भावी युग से संबंधित है। भावी युग के दर्शन में जैसे कवि की सम्पूर्ण विचारधारा सिमट कर आ गई है। कवि की चिन्तनधारा में सर्वोपरि स्थान मानव-हित का है। कवि ने अपनी मौलिक कल्पनाशक्ति द्वारा आध्यात्मिक विचारों में चुन-चुन कर केवल उन्हीं तत्वों का समावेश किया है जो व्यावहारिक जीवन में मानव के लिए कल्याणकारी सि हो सके। इसी कारण उनकी विचारधारा नाना विचारधाराओं का समन्वय होते हुए भी अपने आप में नवीन दृष्टिगत होती है और भविष्यत् कल्पना के माध्यम से भावी मानव को एक नया दिशा बोध देती है।

मुख्य शब्द : जगत, जड़-चेतन, अन्तरचेतना, राग-चेतन, भौतिकता-आध्यात्मिकता।

अध्यात्म भारतीय साहित्य और जीवन की रीढ़ है। जीवन के शुभ-अशुभ, राग-द्वेष सभी का पर्यवसान अध्यात्म में होता है। सुख-दुख की सारी भावनाएँ निमज्जित होकर अध्यात्म में परिणामित की अवस्था तक पहुँचती है। जीवन के सारे झंझावात अध्यात्म रूपी महासागर में परिशामित होते हैं। साहित्यकार भी अपनी भावनाओं को इसी महासमुद्र में निमज्जित कर अपना गंतव्य निर्धारित करता है।

किसी भी कवि की भावधारा विभिन्न स्रोतों से प्रवाहित होकर बहती है। उसका मूल्यांकन विभिन्न सन्दर्भों में करते हुए उसके गंतव्य तक पहुँची हुई भावधारा को देख लेना आवश्यक प्रतीत होता है। सन् 1942 के आन्दोलन के पश्चात् पंत जी की विचारधारा में एक बड़ा परिवर्तन हुआ। उनका मन साहित्य, समाजशास्त्र तथा दर्शन ग्रन्थों में अधिक रमने लगा था। उनकी कविता प्रकृति, जीवन और सौन्दर्य की पगडण्डियों में लौड़कर अध्यात्म और चिन्तन के विस्तृत पथ से भावी समाज की और प्रस्थान करती है और आगे बढ़ने हेतु आध्यात्मिक चेतना का संबल ग्रहण करती है। यह जीवन की स्वाभाविक विकासधारा है जो युग-सापेक्ष होकर लक्ष्य संधान में सर्वदारात है।

'लोकायतन' चिन्तन-प्रधान महाकाव्य है। यहां महाकाव्यकार का उद्देश्य समतल पर दिव्य जीवन के आविर्भाव के विकास को प्रस्तुत करना है। कवि ने इस सन्दर्भ में जिन आध्यात्मिक विचारों को यहां प्रस्तुत किया है, वे सब किसी ने किसी रूप में भावी युग से संबंधित है। भावी युग के दर्शन में जैसे कवि की सम्पूर्ण विचारधारा सिमट कर आ गई है। कवि की चिन्तनधारा में सर्वोपरि स्थान मानव-हित का है। कवि ने अपनी मौलिक कल्पनाशक्ति द्वारा आध्यात्मिक विचारों में चुन-चुन कर केवल उन्हीं तत्वों का समावेश किया है जो व्यावहारिक जीवन में मानव के लिए कल्याणकारी सिद्ध हो सके। इसी कारण उनकी विचारधारा नाना

## शोध-आलेखानुक्रम

- सम्पादकीय  
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पन्त कृत लोकायतन में संस्कृति का सामाजिक पक्ष

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कवि पंत जी को द्रष्टा और स्रष्टा की संज्ञा दी गई है। वे अतीत के प्रेमी हैं और युगीन परिस्थितियों के आधार पर उदात्त सामाजिकता का स्वप्न देखते हैं। एक कलाकार के रूप में सतत प्रगतिशील रहने वाले पंत जी ने ऐसे भावी समाज की कल्पना की है जो वर्तमान समाज से अधिक सुन्दर, सुसंस्कृत तथा प्रगतिशील होगा, जिसमें मानव रूढ़िबद्ध मानव-मूल्यों का त्याग करके, नवीन जीवन-मूल्यों को ग्रहण कर नव संस्कृति का निर्माण कर सकेगा।

**मुख्य शब्द :** चेतना, समाज, राजनीतिक हलचल, धार्मिक संकीर्णता, आदर्श मानव।

साहित्यकार सामाजिक युग चेतना से प्रभाव ग्रहण करने वाला प्राणी है, उसका समस्त व्यक्तित्व युगीन परिस्थितियों की देन होता है।<sup>1</sup> साहित्यकार केवल अपनी जिन्दगी नहीं जीता, अपने समाज और अपने समय की जिन्दगी को भी प्रतिबिम्बित करता है। एक ओर वह समय की मूल ध्वनि को व्यक्त करता है तथा दूसरी ओर अपने, समय और परिवेश में से उस तत्व को भी उपलब्ध और अभिव्यक्त करता चलता है जो शाश्वत है।<sup>2</sup>

कोई भी कवि अपने समाज और अपनी परिस्थितियों से व्यक्तिगत रूप से जुड़ा होता है क्योंकि वह एक कवि होने के साथ-साथ एक व्यक्ति भी होता है, समाज की उन्नति की ओर अग्रसर होती हुई एक शक्ति भी होता है। अतः समाज की एक स्पन्दनशील इकाई होने के नाते उसका कर्तव्य हो जाता है कि वह समाज को अपने भीतर दर्पण की भाँति प्रतिबिम्बित करे। जिन परिस्थितियों और जिस समाज में वह जन्म लेकर बड़ा हुआ है, उसका आभास उसकी रचनाओं में मिलना ही चाहिए। क्योंकि उसका समस्त व्यक्तित्व उन परिस्थितियों और समाज की ही देन होता है।

पंत जी पर अपने समय की स्पष्ट छाप परिलक्षित होती है। जिन परिस्थितियों में और जिन तत्वों से प्रेरणा ग्रहण कर उन्होंने काव्य-सर्जन किया है, उसका स्पष्ट आभास उनके कर्तित्व में मिलता है। बचपन से ही एकान्तप्रिय होने पर भी अपने चारों ओर की सामाजिक चेतना के प्रति वे हमेशा जागरूक रहें। उन्होंने समाज की प्रत्येक धडकन को बड़े ध्यान से सुना और महसूस किया, उन्होंने अपने जीवन में जो कुछ भी देखा, सुना अथवा पढ़ा है, उसको आत्मसात् करके बड़े मनोहर ढंग से वर्णित किया है।

पंत जी का महाकाव्य 'लोकायतन' युगबोध की सफल अभिव्यक्ति है। राजनीतिक हलचल, धार्मिक संकीर्णताओं, सामाजिक वैषम्यों, रूढ़ियों को तोड़ देने की क्रान्ति-प्रवृत्ति, दलितों-शोषितों के प्रति सहानुभूति, मानवविहित चिंतन आदि युगीन सारी सामाजिक भावनाओं को इसमें अभिव्यक्ति दी गई है, इसमें सन्देह नहीं। 'लोकायतन' में पंत जी ने वर्तमान की सभी समस्याओं का अंकन करते हुए भावी समाज की विराट झँकी प्रस्तुत की है। समाज और संस्कृति दोनों के नव-निर्माण में मानव-संस्कार और युगीन जीवन-मूल्यों का विशेष हाथ होता है। इन्हीं तत्वों के आधार पर युगानुरूप संस्कृति का उन्नयन और विघटन होता है। 'लोकायतन' में अभिव्यक्त

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# Chemical Contamination of Water Bodies: A Comprehensive Review of Industrial Contributions

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## **Abstract :**

Water bodies are essential for supporting life and ecosystems, yet they face an increasing threat of chemical contamination resulting from various human activities, with industrial processes being a significant contributor. In this comprehensive review, we delve into the complex issue of chemical contamination in aquatic environments, with a specific focus on the far-reaching impacts of industrial activities. The primary aim of this review is to provide a thorough comprehension of how industries contribute to chemical pollution in aquatic settings. We explore the origins, varieties, and pathways of chemical pollutants released into water bodies, as well as their consequences for both the environment and human health. Utilizing an extensive body of scientific literature, this paper categorizes industrial contributions by sectors, including manufacturing, agriculture, mining, and energy production. It also delves into the mechanisms behind contamination, encompassing point source and non-point source pollution, accidental spills, and inadequate waste management practices. Furthermore, we assess the regulatory frameworks and environmental policies designed to mitigate industrial impacts on water quality. We also offer insights into potential strategies for enhancing the protection of our water resources. By synthesizing current knowledge and pinpointing research gaps, this review seeks to inform policymakers, industry stakeholders, and environmental advocates about the pressing need for sustainable industrial practices and effective regulatory measures. Ultimately, it underscores the importance of taking a holistic approach to address chemical contamination, highlighting the pivotal role of industries in safeguarding the health and well-being of our aquatic ecosystems and communities.

**IndexTerms - Chemical Contamination , Water Bodies , Industrial Activities, Pollution Sources ,Environmental Impact, Water Quality, Ecological Consequences.**

## **I. INTRODUCTION**

Water is the life force of our planet, and this is especially true in India, a nation graced with an intricate network of rivers, lakes, ponds, and coastal ecosystems that together weave a vibrant mosaic of aquatic wonders. These aquatic realms have been integral to India's historical narrative, cultural fabric, and everyday existence for countless generations. From the majestic Ganges and Brahmaputra rivers to the tranquil backwaters of Kerala, India's waterways are more than geographical features; they are the vital conduits of sustenance and civilization [1].

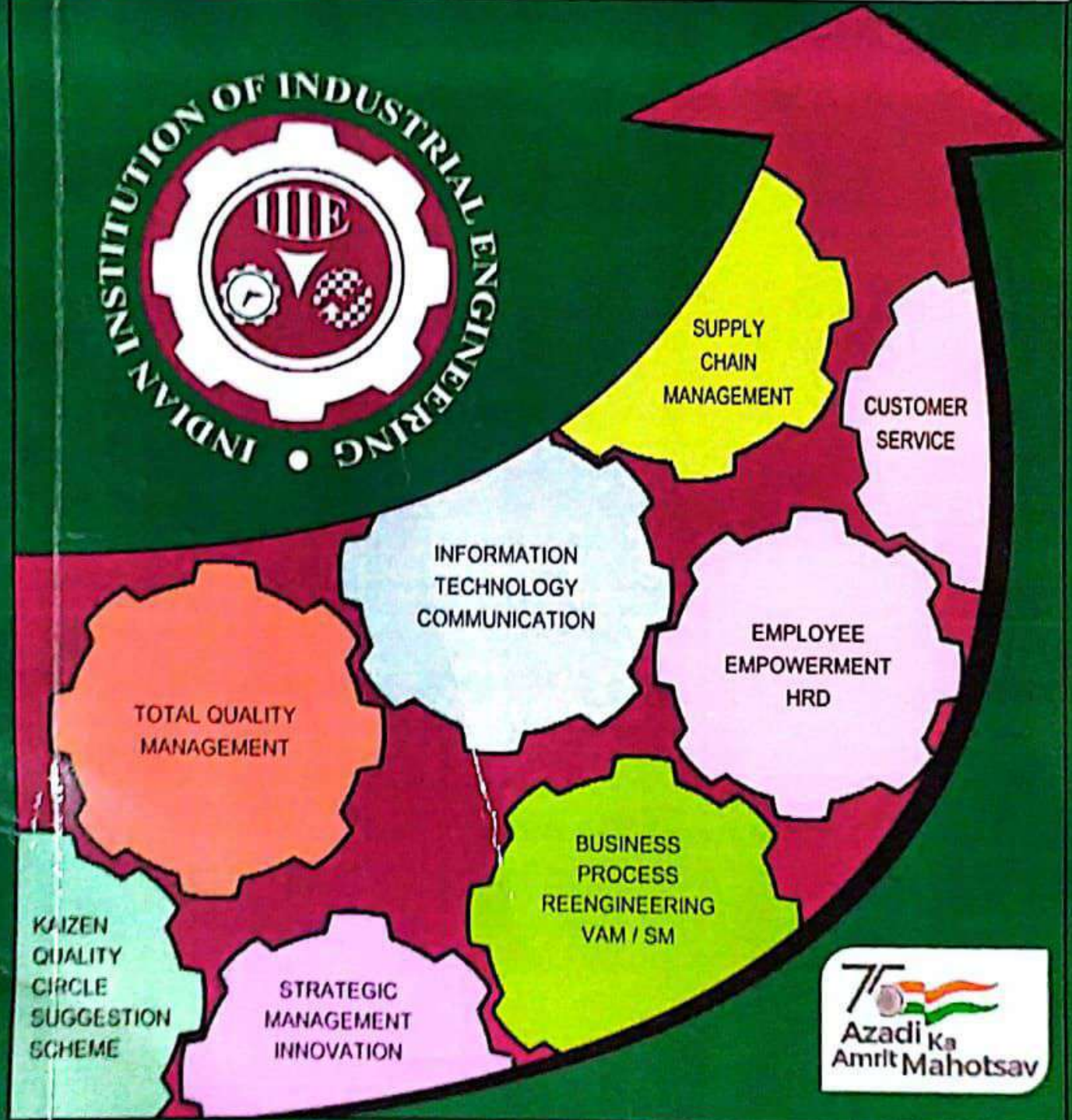
However, beneath the placid surfaces of these waters lies a burgeoning crisis, one that presents a significant peril to both the environment and human well-being. This crisis is none other than the pervasive contamination of India's water bodies, wrought by a complex mixture of chemicals, pollutants, and toxins. This issue extends beyond India's borders, representing a global predicament in the face of rapid industrialization and urban expansion that challenges the maintenance of water quality and safety [1].

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## NUMERICAL METHODS FOR SOLVING STIFF ORDINARY DIFFERENTIAL EQUATIONS IN SCIENTIFIC COMPUTING

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### Abstract

The present paper aims to comprehensively examine the numerical approaches utilized in the field of scientific computing to solve stiff ordinary differential equations (ODEs). The theoretical concepts of stiffness, implicit numerical methods, and adaptive time-stepping algorithms, as well as their importance in simulating complicated dynamical systems, are all examined in this paper. The essay also shows how numerical methods may be used to cope with problems in the real world, including chemical kinetics, circuit modeling, structural dynamics, and epidemiological modeling. This makes a substantial contribution to the industry. This article focuses on the use of numerical methods to get a deeper comprehension of dynamic processes in the context of scientific computing as a means of advancing that field's research. The study specifically looks at how numerical approaches could support scientific computer research. It will prove to be a priceless tool for individuals involved in scientific research, technological advancement, and the practical application of theory. Step size and order selection strategies for a complex methodology based on the block backward differentiation formula (BBDF) are provided. Specifically, the VSVO-BBDF method of doing numerical calculations with steps of varying sizes and orders is used. Numerous graphs are used to analyze the VSVO-BBDF approach's stability regions. The superior accuracy and computational speed are shown by mathematical outcomes with many test issue sets.

**Key words:** Stiff Ordinary Differential Equations, Numerical Methods, Scientific Computing.

### 1. INTRODUCTION

Ordinary differential equations (ODEs) that are particularly difficult to solve have been the focus of a great deal of study and mathematical analysis. Extensive studies have been conducted to reveal the comparison between the numerical approaches in the literature about their pace of convergence, amount of calculations, correctness, and capacity to answer certain types of test problems. BDFs, also known as Gear's Method, are the class from which the most popular numerical techniques originate. Stiff ODEs appear in many areas of applied research, but many