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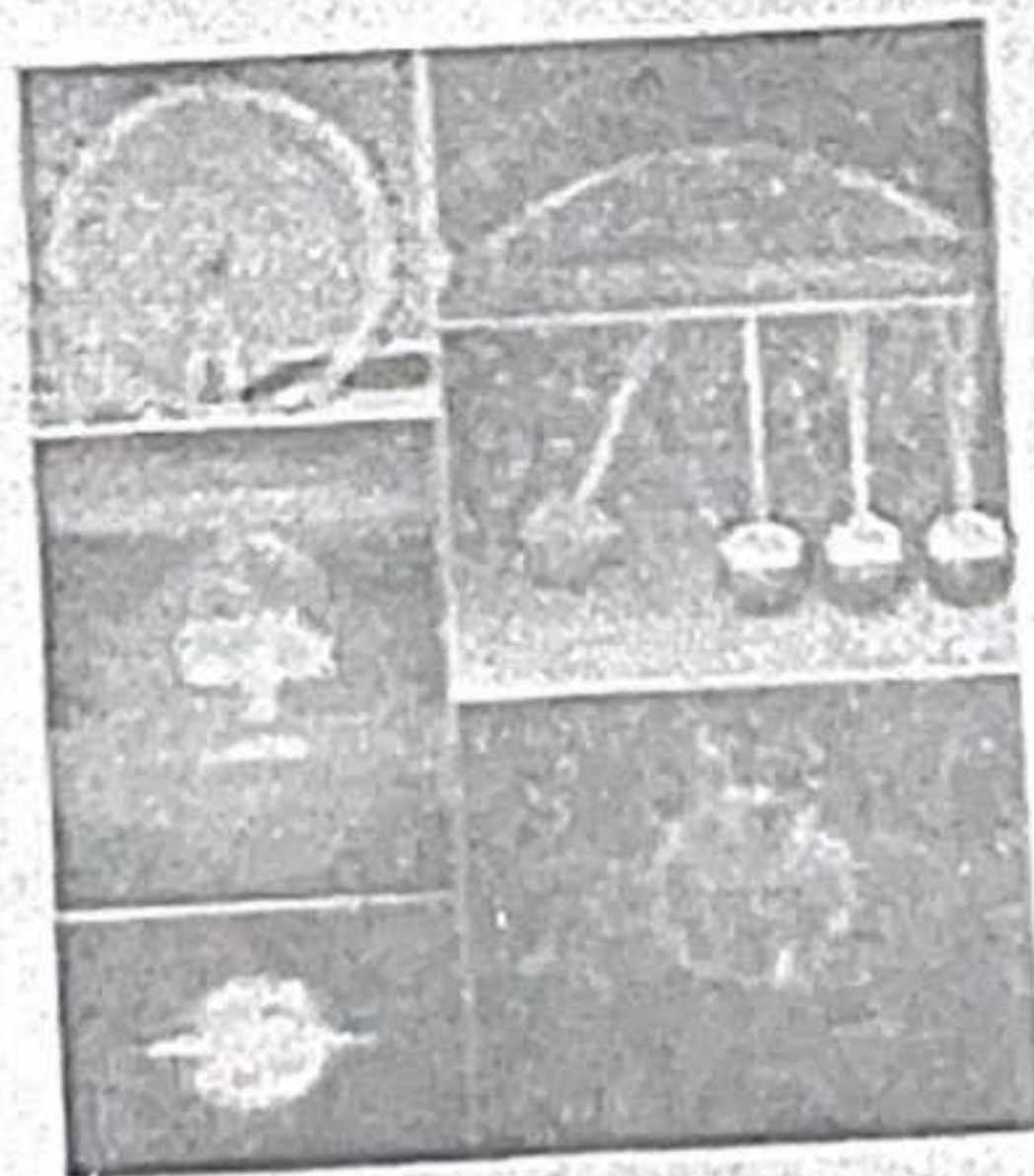
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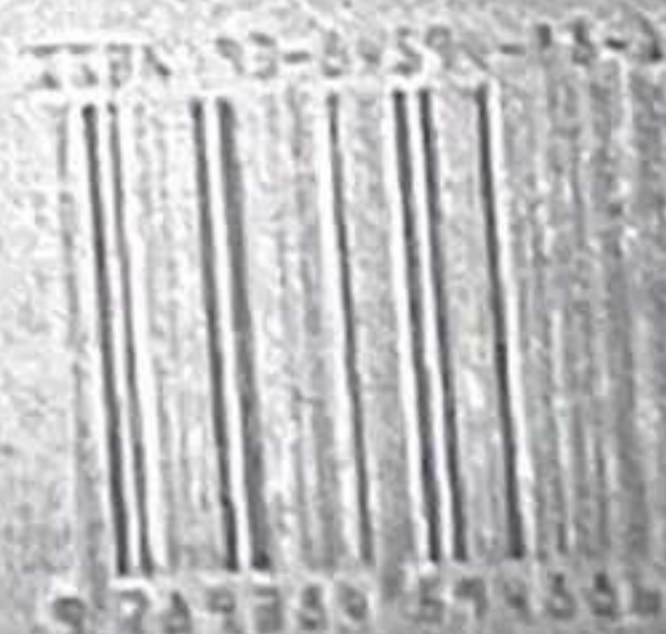
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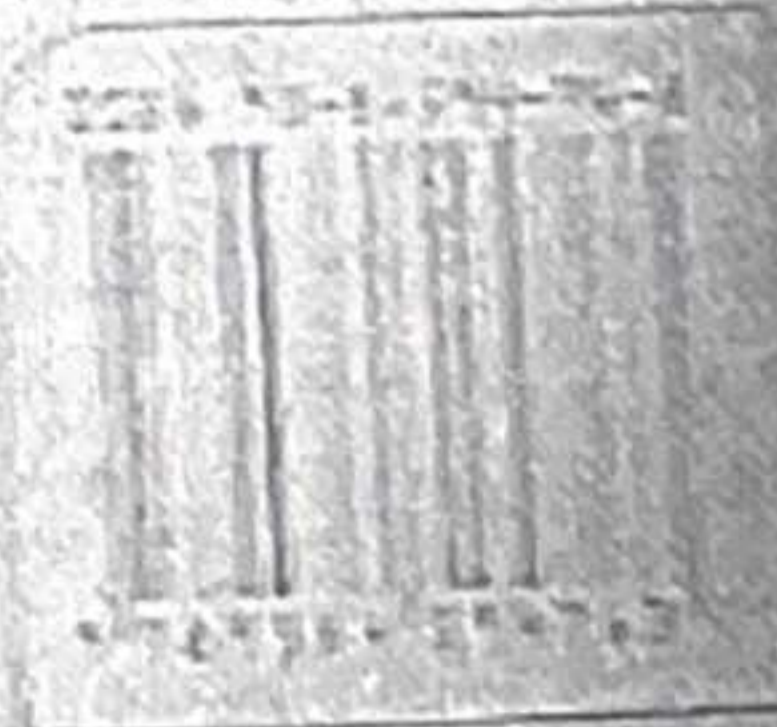
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Chapter 48 CHEMISTRY AND SUSTAINABLE DEVELOPMENT GOALS: A SYNERGISTIC EFFECT

Ravinder Dogra

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Abstract

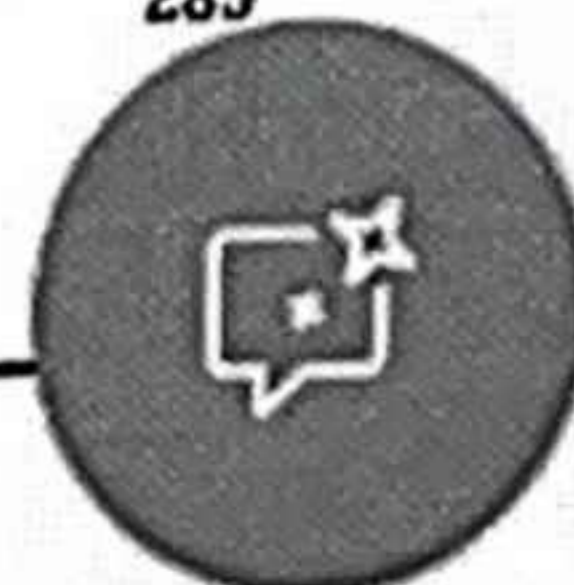
In the pursuit of global sustainable development, the intersection of chemistry and the United Nations Sustainable Development Goals (SDGs) emerges as a potent force for positive change. This abstract explores the multifaceted role of chemistry in advancing the SDGs, fostering a synergistic relationship between scientific innovation and sustainable development. Chemistry plays a pivotal role in achieving SDGs across various domains. From clean water and sanitation (SDG 6) to affordable and clean energy (SDG 7), chemistry underpins technologies that address the fundamental challenges of our time. The discovery and development of novel materials, catalysts, and processes contribute significantly to mitigating climate change (SDG 13), exemplifying the crucial role of chemistry in transitioning towards a more sustainable energy landscape. The abstract delves into the realm of health and well-being (SDG 3) where chemistry is indispensable in drug discovery, vaccine development, and diagnostic technologies. It examines how the principles of green chemistry are steering pharmaceutical practices toward sustainability, aligning with the broader goals of responsible consumption and production (SDG 12). Sustainable cities and communities (SDG 11) benefit from chemistry's involvement in urban planning, waste management, and pollution control. Chemistry-driven innovations in construction materials, renewable energy integration, and smart technologies contribute to the development

of resilient and sustainable urban environments. The abstract also underscores chemistry's critical role in life on land (SDG 15) and life below water (SDG 14). From sustainable forestry and soil conservation to the preservation of biodiversity, chemistry provides solutions that support ecosystems and promote conservation efforts. Furthermore, the abstract explores the ethical dimensions of chemistry in achieving goals related to equality, education, and partnerships (SDGs 4, 5, and 17). Chemistry education becomes a catalyst for empowering diverse communities and fostering inclusivity in scientific advancements. In essence, this abstract showcases the interconnectedness of chemistry with the SDGs, emphasizing how scientific advancements, responsible industrial practices, and educational initiatives collectively contribute to a sustainable and equitable future. By recognizing the synergistic effect of chemistry and the SDGs, stakeholders can harness this dynamic relationship to address complex global challenges and propel humanity towards a more sustainable and inclusive trajectory.

Keywords: Chemistry; Sustainable Development; SDGs; Green Chemistry

1. Introduction

We all are surrounded with chemicals in the modern world. They're used to make the chair you're sitting in, the cleaning solutions in your home, and even the many components in the vehicle you're driving. Because chemicals are shaping our lives every new day, we are innovating ways to meet the needs of our



Chapter 5. Upadhyaya Transform for Solving Steady Heat Transfer Problems

Dinesh Thakur¹, PhD and Sunil Kumar², MSc

¹Department of Mathematics, Bahra University, Wagnaghat, District Solan, H.P., India

²Department of Mathematics, Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab, India

Chapter 6. Effect of Suspended Particles on the Thermal Convection in Jeffrey Fluid in a Darcy-Brinkman Porous Medium

Pushap Lata Sharma¹, PhD, Vinod Kumar¹, MSc, Deepak Bains¹, MSc, Praveen Lata¹, MPhil, Ajit Kumar¹, MSc, and Pankaj Thakur², PhD,

¹Department of Mathematics and Statistics, Himachal Pradesh University, Shimla, India

²Faculty of Science and Technology, ICFAI University Baddi, District Solan, India

Chapter 7. Double Diffusive Convection in a Rotating Compressible Walters' (model B') Viscoelastic Fluid Saturating a Porous Medium

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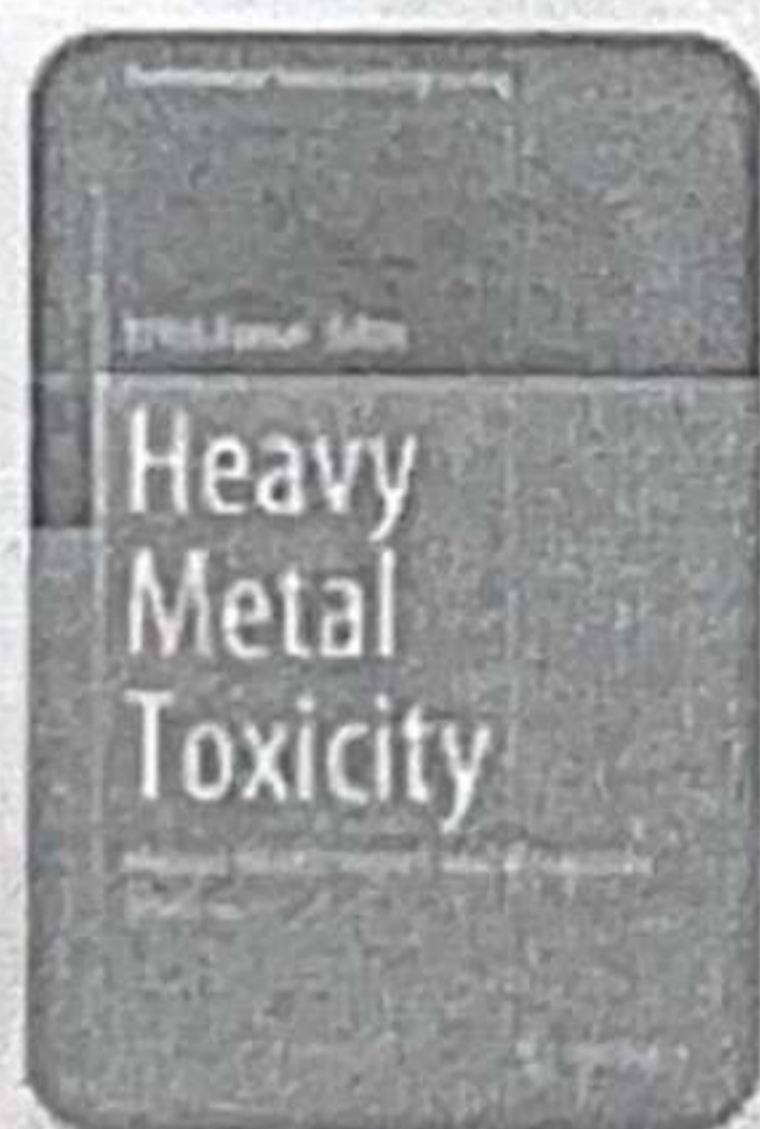
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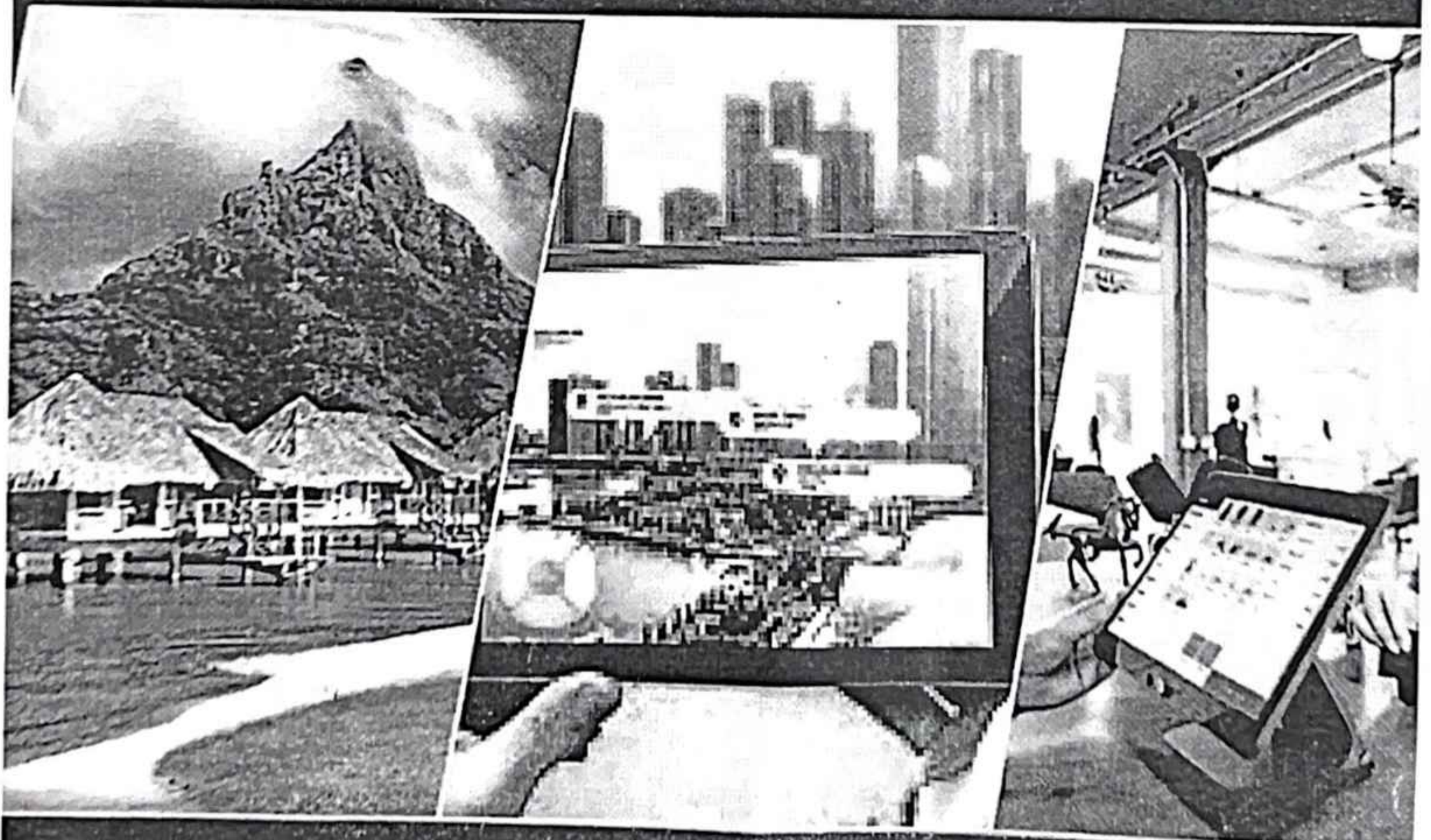
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Role of Technology on Religious Tourism: An Indian Perspective

Santosh Kumar*, Vipul Kumar Gautam **,
Jaya Gautam*** & Ankush****

ABSTRACT

Religious tourism is an age-old tradition deeply rooted in India and around the world. India, with its rich diversity of religions, such as Hinduism, Buddhism, Jainism, Sikhism, Islam, Christianity, and more, boasts an abundance of sacred sites that offer profound insights into the spiritual essence of each faith. Technology, a transformative force in the realm of tourism, has revolutionized the way travelers plan, experience, and engage with their chosen destinations. In the modern age, technological advancements have seamlessly woven into the fabric of tourism, enhancing everything from understanding and accessibility through mobile apps and virtual reality experiences to the optimization of events and safety with data analytics and crowd management tools. This chapter delves into the intricate role of technology in shaping religious tourism in India, unlocking new dimensions of exploration and fostering more efficient and informed pilgrimages.

Keywords: Religious Tourism, Digital Tourism, Virtual Reality, Chatbot for Pilgrimage, Indian Pilgrimage, Technology in Tourism.

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Chapter: 13

Qualitative Research Approaches in Social Sciences

Vipul Kumar Gautam¹ and Jaya Gautam²¹Assistant Professor, Department of Tour & Travels, Government College Una (HP)²Ph.D. Scholar, Department of Education, University of Lucknow

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Abstract: This article presents a comprehensive exploration of commonly utilized qualitative research methods in the social sciences. Covering essential methodologies such as ethnography, phenomenology, grounded theory, case study, content analysis, and ethnomethodology, the article delves into their ontological and epistemological foundations, objectives, applications, and specific approaches to sampling, data collection, and analysis. The discussion navigates the constructivist and interpretive paradigms that underlie these methods, emphasizing the subjective understanding of human behaviour within socially constructed realities. Each method's unique objectives are delineated, from unravelling social order construction in ethnography to exploring individual lived experiences in phenomenology and developing theories grounded in qualitative data in grounded theory. The article highlights the practical application of these methods in social science. Emphasizing the flexibility and purposive nature of sampling, coupled with iterative data analysis techniques, the article underscores the common thread uniting these approaches. It emphasizes the profound significance of these qualitative methods in unravelling intricate social phenomena that defy easy quantification, ultimately contributing to a nuanced understanding of the dynamic facets of the human condition in the field of social research.

Keywords: Qualitative research, Ethnography, Phenomenology, Grounded Theory, Case Study, Content Analysis, Ethno-methodology, Narrative Research.

Introduction

Qualitative research methodology in the social sciences is firmly grounded in a philosophical perspective that embraces hermeneutic, constructivist, and interpretive philosophies. It diverges from the reductionist approach of quantifying human experiences, beliefs, and behaviours, recognizing their nuanced and multifaceted nature. This methodology aligns with an ontological and epistemological understanding that acknowledges the richness of subjective meanings and interpretations in the human world. It emphasizes that the subjective realm of individuals and communities cannot be reduced to mere quantifiable data. Qualitative research, at its core, seeks to reveal the essence of human existence by delving into the intricacies of culture, society, and individual lives.



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Chapter 8 - Pesticides-mediated ROS generation in plants

Ashutosh Sharma^a, Sanjay Kumar Sharma^b, Narayan Singh^{a c}, Vasudha Maurya^{a c}, Sukhwinder Kaur^b, Rahul Kumar^a, Indu Sharma^b

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Abstract

In order to ensure food security for the increasing human population, different types of agrochemicals are now in use which either increase crop productivity by improving nutrition or protects plants from competing organisms. These two important groups of agrochemicals are now being referred to as fertilizers and pesticides, respectively. With the increased use of pesticides for increasing crop productivity the effect of pesticide toxicity on plants is also emerging as a major concern. The pesticide-induced negative changes in the plant's physiology are mostly dose-dependent and are generally mediated by the enhanced production of reactive oxygen species (ROS). The delicate balance between the ROS-producing and ROS-scavenging systems is disrupted under pesticide toxicity leading to an enhanced accumulation of ROS called as the oxidative burst. This increase in ROS accumulation then leads to other deteriorative changes in plants like membrane damage, lipid peroxidation, cell death, etc. However different methods have been used to reduce the oxidative damage caused by pesticide toxicity in plants like the application of different PGRs, different adjuvants, biopesticides, nano-engineered pesticides, integrated pest management, etc. The present chapter is, therefore, an attempt to discuss the magnitude of oxidative toxicity caused by different classes of pesticides and their management by antioxidant defense systems and strategies to overcome the harmful effects of pesticide toxicity in plants.

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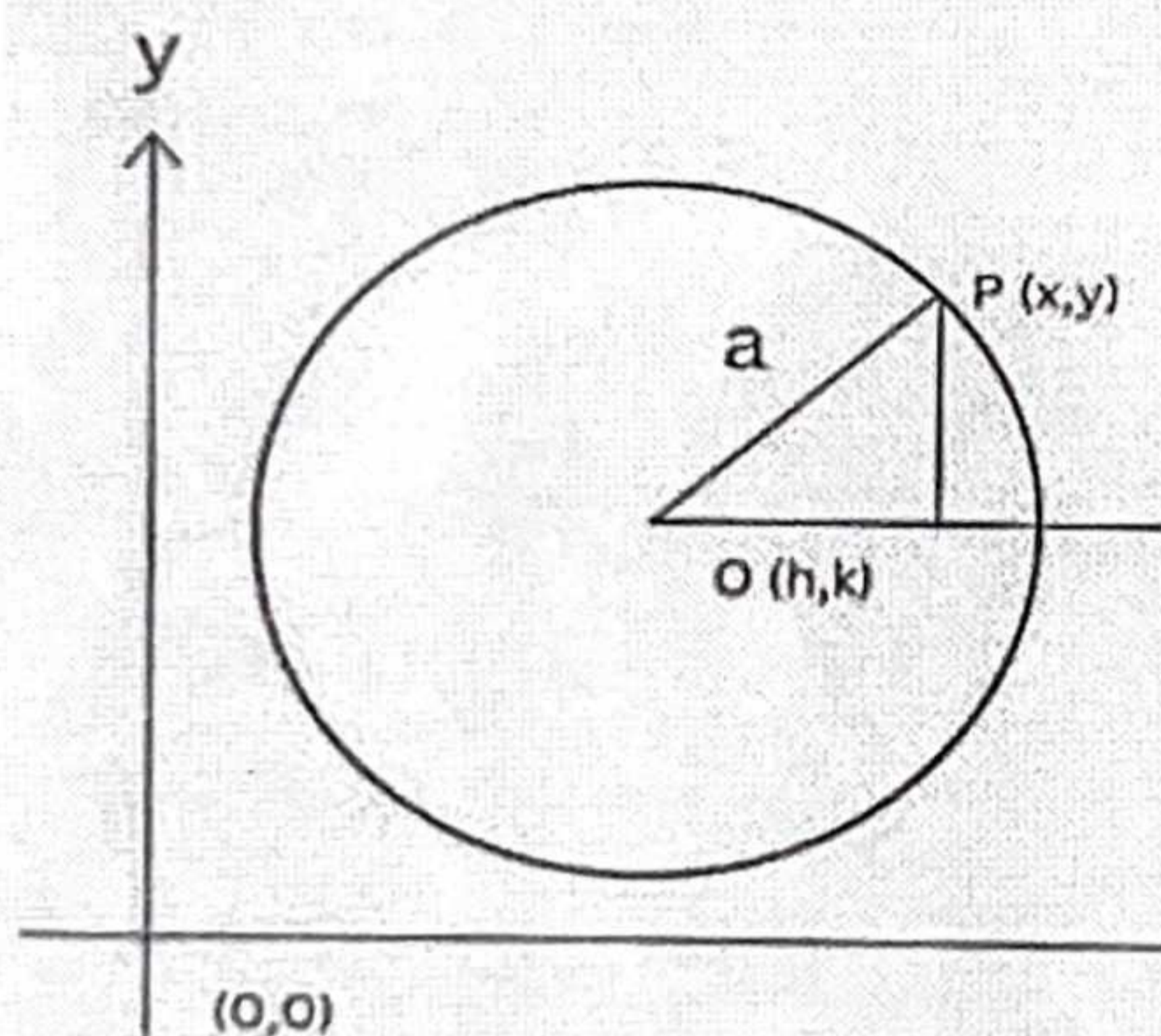
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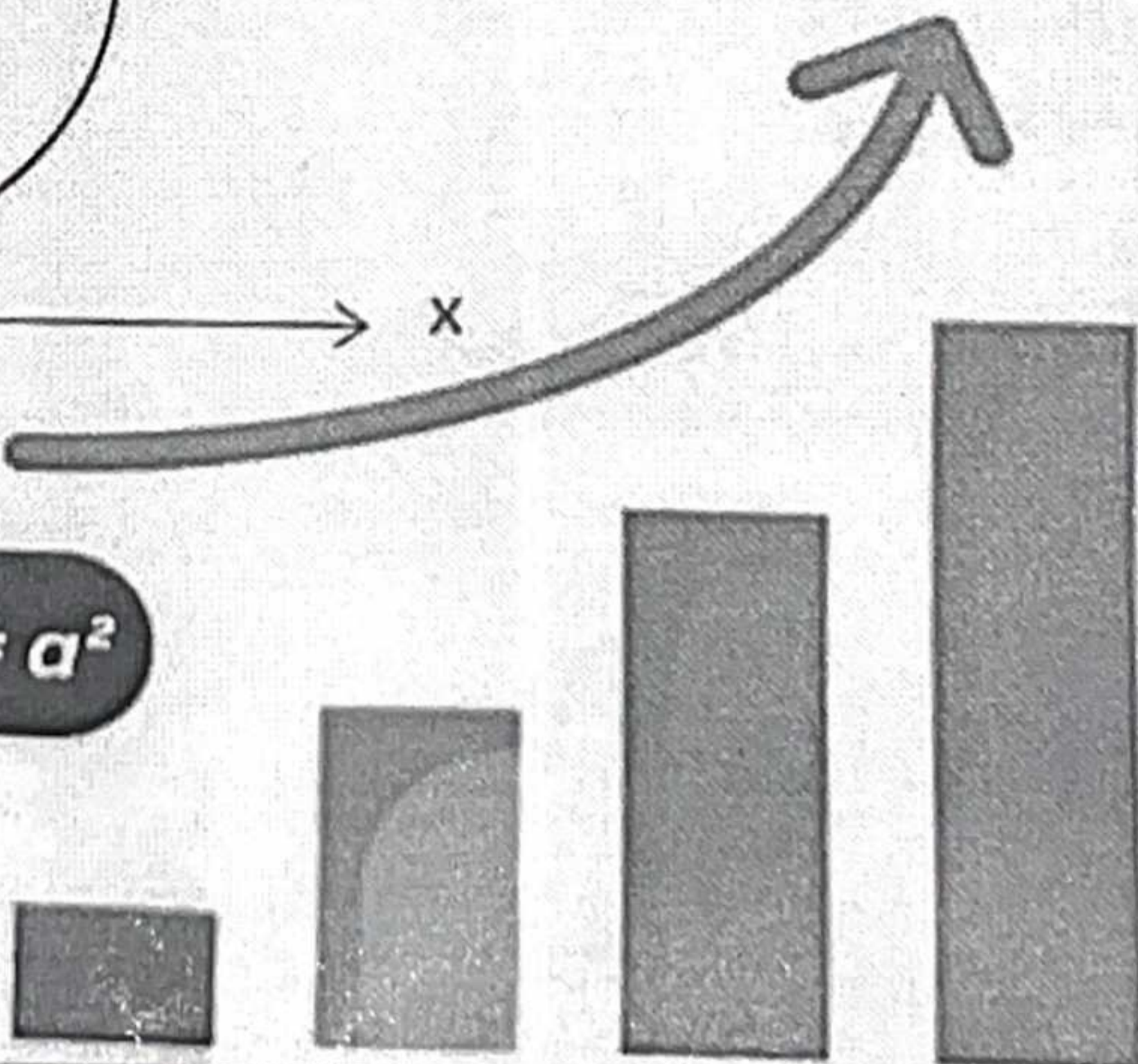


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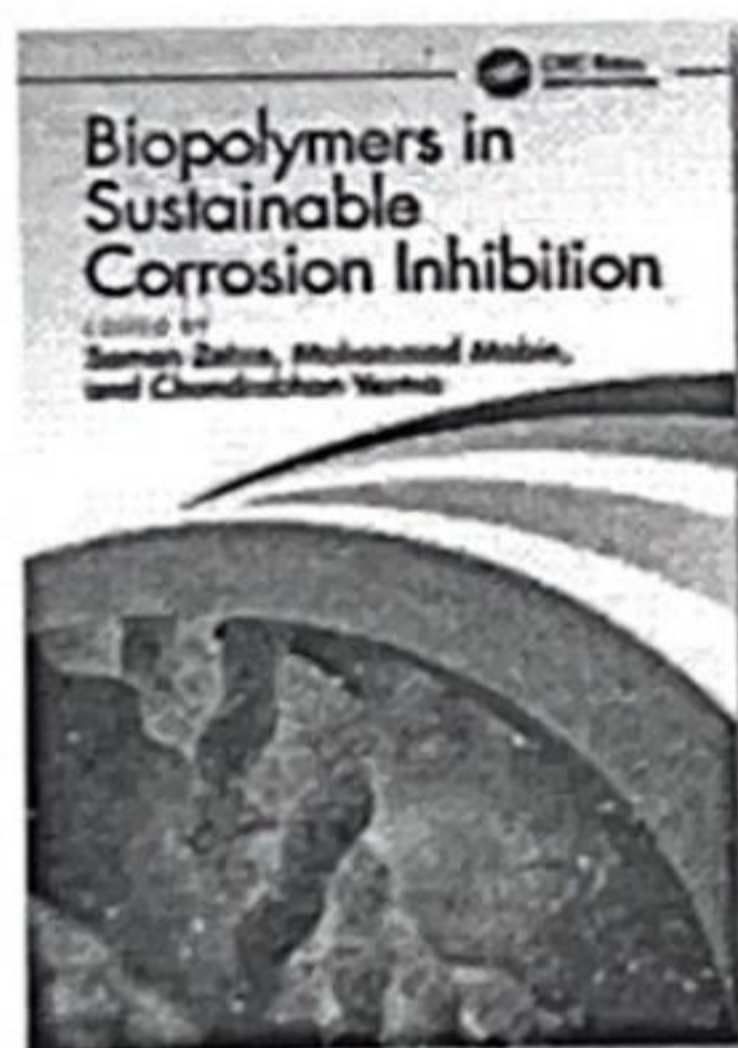
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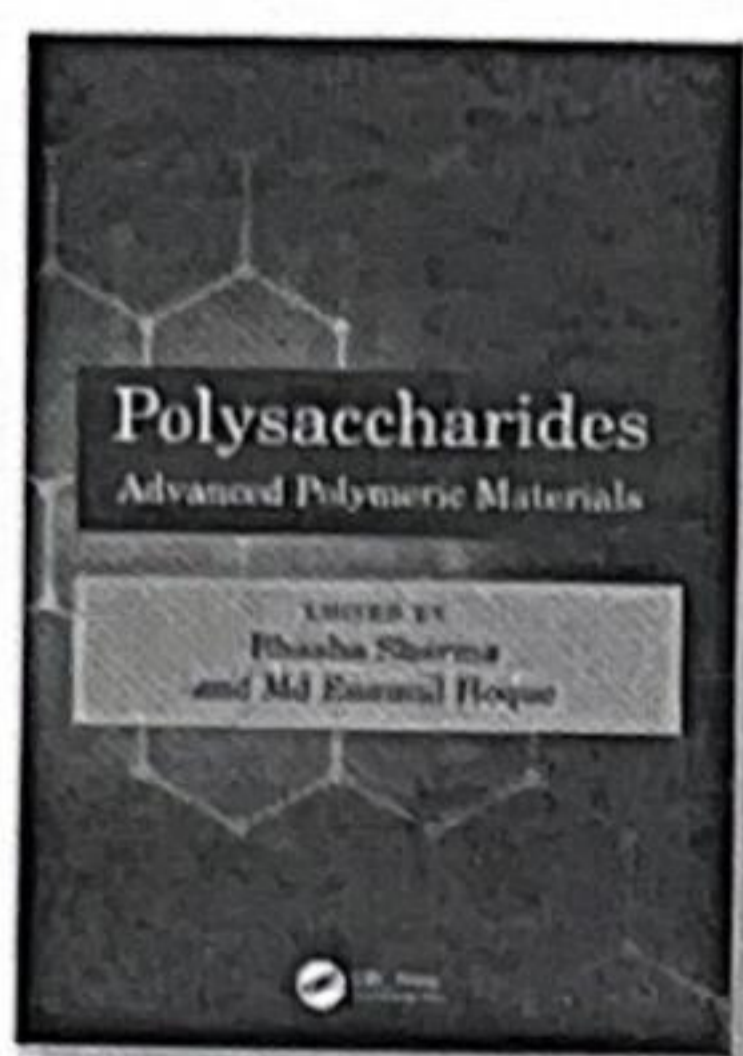
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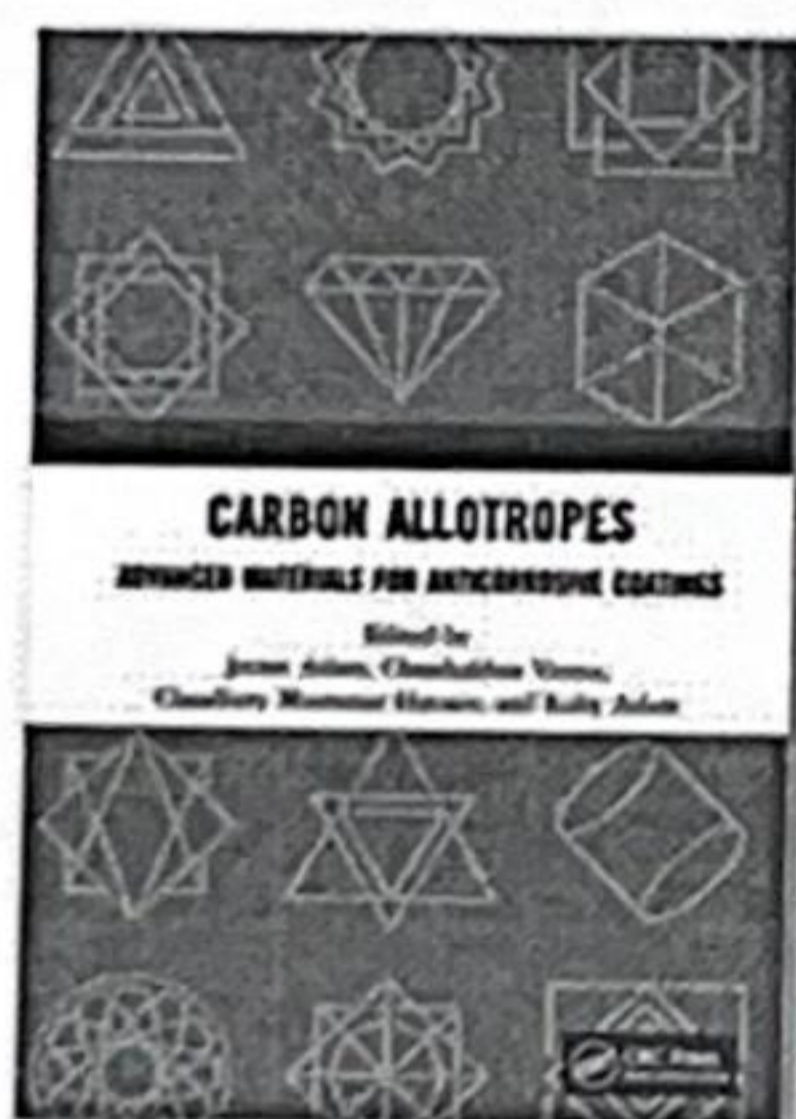
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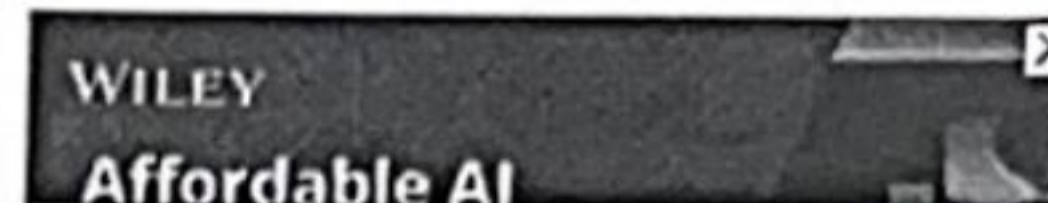
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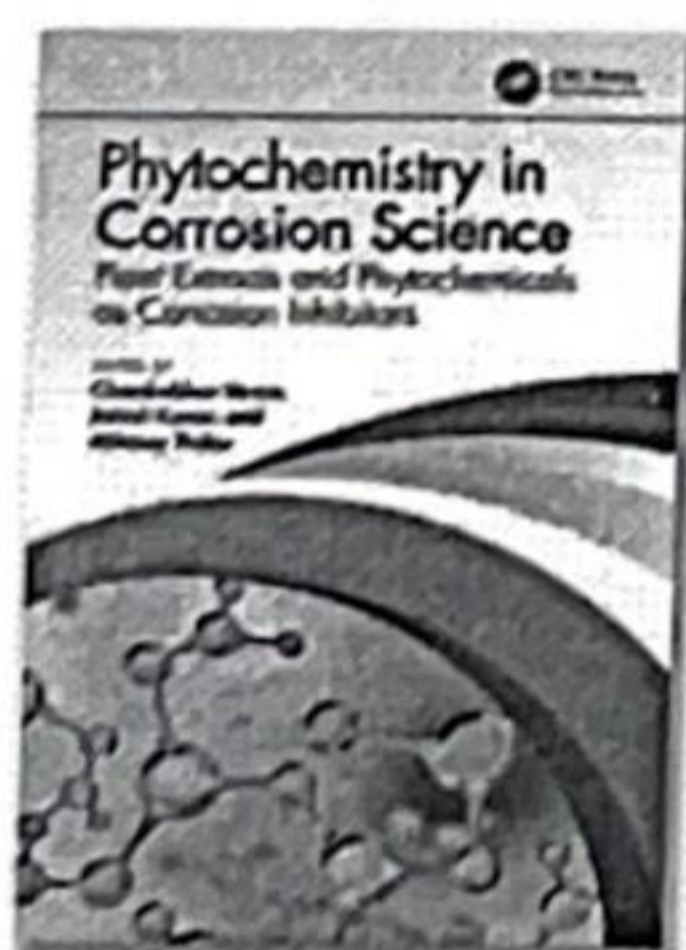
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