



## RAIGANJ SURENDRANATH MAHAVIDYALAYA

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# CRITERION 3

## Research, Innovations and Extensions

### 3.3 Research Publications and Awards

**Documentation w.r.t. 3.3.2, books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years**

#### DOCUMENTS

**Link to the uploaded book chapters (detailing with author, affiliation, title page with ISBN & publisher name, content page, 1<sup>st</sup> page of chapter) on the institutional website**



<http://rsmraiganj.in/wp-content/uploads/2024/08/3.3.2-Book-Chapter-Published-in-Last-Five-Years.pdf>

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### 3.3.2: Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Calendar Year of publication	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Susmit Chatterjee, <b>Chandan Roy</b> , Pradip Banerjee	Evolution of Public Policies for Empowering the Women in Self Help Groups in West Bengal, India	NA	NA	NA	International	2023	978-981-99-3696-0	Raiganj Surendranath Mahavidyalaya	Spinger
2	<b>Sujit Ghosh</b> , Basudeb Basu	Recent approaches toward the synthesis of 1,2,3-triazoles using multicomponent technique	NA	NA	NA	International	2023	978-311-0-98611-2	Raiganj Surendranath Mahavidyalaya	De Gruyter
3	Sujit Ghosh	Ion Exchange Resin: A Versatile Heterogeneous Catalyst: Recent Update	NA	NA	NA	International	2023	978-620-6-16133-2	Raiganj Surendranath Mahavidyalaya	Lambert Publishers

  
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4	Priyanjalee Banerjee	Breaking New Ground: Leveraging Artificial Intelligence for Precision Medicine in Neurodegeneration.	NA	NA	NA	International	2023	978-93-91387-26-6	Raiganj Surendranath Mahavidyalaya	AGAR publishers
5	Debasmita Kanjilal	Approaching the end of Mendeleev's Periodic Table: Super Heavy Elements	NA	NA	NA	International	2023	978-1-387-57678-4	Raiganj Surendranath Mahavidyalaya	RED'SHINE PUBLICATION 232, Bilton road, Perivale, Greenford Passcode: UB67HL London, UK
6	Sujit Ghosh	Cross Dehydrogenative Coupling" (CDC) reaction: Mechanism and intermediates with recent reports	NA	NA	NA	National	2021	978-93-82623	Raiganj Surendranath Mahavidyalaya	Reader Service

  
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7	Sujit Ghosh	"Applications of Indole-based derivatives in Therapeutic/Medicinal Use: Recent development	NA	NA	NA	International	2022	978-93-5574-029-8	Raiganj Surendranath Mahavidyalaya	Walnut Publishers
8	Choden Yolmo	Educational Technology: Its Evolution and Effects	NA	NA	NA	National	2021	978-81-945869-0-6	Raiganj Surendranath Mahavidyalaya	New Academic Publishers
9	Dhritiman Chakraborty	Governance of the Society or Self? Postcolonial Politics and the Singur Movement in India	NA	NA	NA	International	2021	978-969-7340-16-3	Raiganj Surendranath Mahavidyalaya	Oxford University Press (OUP)
10	Sujit Ghosh	Application of Selective Carbon-Based Nano Material for Targeted Drug Delivery	NA	NA	NA	International	2020	978-9-390785-16-2	Raiganj Surendranath Mahavidyalaya	Walnut Publishers

  
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11	Dhritiman Chakraborty	What is left of Left in West Bengal? The New Left and the World of the Third	NA	NA	NA	International	2020	978-93-532-8677-4	Raiganj Surendranath Mahavidyalaya	Sage, New Delhi
12	Arindam Debnath	CONSTRUCTION OF BARRAGES ,DAMS AND DISPLACEMENTS ITS EFFECT ON TRIBAL LIFE:-EMMERGENCE OF MAOISM IN INDIA	NA	NA	NA	National	2020	978-93-90110-56-8	Raiganj Surendranath Mahavidyalaya	BHARTI PUBLICATIONS.
13	Arindam Debnath	THE RELATION BETWEEN INDIAN AND BANGLADESH- REGARDING WATER DISPUTES AND SOLUTIONS	NA	NA	NA	National	2020	978-93-89657-49-4	Raiganj Surendranath Mahavidyalaya	BHARTI PUBLICATIONS.

  
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14	Arindam Debnath	DEMOCRACY,AUTOCRACY NEEDS OF NEW THINKING AND PARTY IN INDIAN SOCIETY	NA	NA	NA	National	2020	978-93-7831-480-3	Raiganj Surendranath Mahavidyalaya	MANAK PUBLICATIONS PVT.LTD
15	Dhritiman Chakraborty	Who is Afraid of Postcolonial Theory? Development, Accumulation and the Specter of Outside	NA	NA	NA	International	2019	978-93-50025-86-4	Raiganj Surendranath Mahavidyalaya	Akar Publishers
16	Dhritiman Chakraborty	What is left of Left in Bengal?	NA	NA	NA	International	2019	978-1-387-57678-4	Raiganj Surendranath Mahavidyalaya	Sage Publishers
17	Shimul Chandra Sarkar	ওকাকুরা তেনশিন ও অবনীন্দ্রনাথ ঠাকুর : নন্দন শিল্প ও সাহিত্যের বৈচিত্র সন্ধান	NA	NA	NA	National	2019	978-93-83010-34-9	Raiganj Surendranath Mahavidyalaya	J.B. Books & Learnings, Berhampore

  
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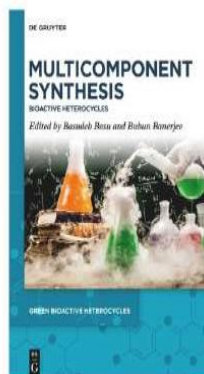
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## Multicomponent Synthesis

Bioactive Heterocycles

Edited by: Basudeb Basu and Bubun Banerjee

Volume 5 in the series Green Bioactive Heterocycles

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### List of contributing authors

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Sujit Ghosh, Basudeb Basu\*

## 7 Recent approaches toward the synthesis of 1,2,3-triazoles using multicomponent techniques

### 7.1 Introduction

Triazoles are the five-membered heterocyclic compounds with three nitrogen and two carbon atoms in the ring having molecular formula  $C_2N_3H_3$ . The atomic percentage of nitrogen in 1,2,3-triazole is about 60%, indicating the importance of hetero scaffold in the field of organic chemistry. Depending upon the position of nitrogen atoms in the ring they are divided into two isomers: (i) 1,2,3-triazole and (ii) 1,2,4-triazole [1]. When three N atoms placed in successive position then it is called 1,2,3-triazole or 1*H*-1,2,3-triazole. Again disubstituted 1,2,3-triazoles have three isomers (i) 1,4-, (ii) 1,5-, (iii) 4,5-; and trisubstituted triazoles have only one isomer, that is, 1,4,5 (Figure 7.1). In this chapter, we have discussed the recent literature on the synthetic approaches toward 1,2,3-triazoles using multicomponent techniques, their mechanistic insights, and outlook.

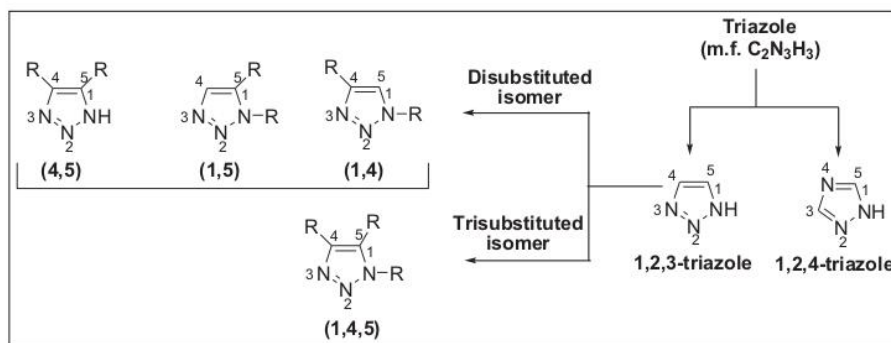


Figure 7.1: Triazole and its various isomers.

The 1,3-dipolar cycloaddition [2], between alkyne and azide, is known as azide-alkyne cycloaddition, commonly called AAC reaction [3]. In 1910, the German chemists, Otto Dim-

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New Frontiers in Regional Science: Asian Perspectives 71

Mukunda Mishra  
Subrata Saha  
Madhabendra Sinha *Editors*

# Public Policies and Sustainable Development in Post-Reform India

Regional Responses and  
the Way Forward

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## Chapter 17

### Evolution of Public Policies for Empowering the Women in Self Help Groups in West Bengal, India



Susmita Chatterjee , Chandan Roy , and Pradip Banerjee 

#### 17.1 Introduction

Self Help Groups (SHGs) are the largest informal organizations of people who mutually help each other to improve their living conditions. These groups are piloted by NGOs in order to provide financial services to poor people. The origin of SHG was found in the form of the *Grameen (Rural) Bank of Bangladesh*, established by Muhammad Yunus in 1983. SHG movement in India was initiated by Mysore Resettlement And Development Agency (MYRADA) in the mid-1980s to provide financial assistance to economically backward sections of society. The SHG-Bank linkage program began later in 1992 when NABARD issued guidelines for a strategy on the basis of which banks were allowed to lend directly to SHGs in India. Though the SHG scheme was initially targeted as a mechanism of financial intermediation, gradually it became a catalyst of social empowerment along with achieving other developmental goals related to education, health, family planning, etc. (Sinha and Navin 2021). The root of this social empowerment can be traced back to the formation of the Self-Employed Women's Association (SEWA) in 1970. Later, the Government of India made a significant breakthrough in its public policy and introduced Swarnjayanti Gram Swarozgar Yojana (SGSY) in 1999. This particular policy tried to promote women empowerment in rural areas by creating employment and developing the skill of the SHG members. This policy program evolved as a movement in 2011 and named as National Rural Livelihood Mission (NRLM) which

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# **MULTIDISCIPLINARY**

**APPROACH**

**Volume-1**

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Emerging Trends in Science, Social Science, Engineering and Management - A Multidisciplinary Approach: Volume-1

## CHAPTER 39

### APPROACHING THE END OF MENDELEEV'S PERIODIC TABLE: SUPER HEAVY ELEMENTS

*Debasmita Bondyopadhaya (Kanjilal)*

#### Abstract:

The periodic table, based on classic electron shell structure, identifies the location and chemical properties of elements. This table is slowly getting bigger. At one time the periodic table contained only 83 naturally occurring elements, starting with hydrogen and ending with uranium. These elements have half-lives that are comparable to the age of the Earth-about 4.5 billion years old. Since 1940s, physicists have been able to produce unstable elements that decay to lighter elements with half-lives ranging from thousands of years to tiny fractions of a second. Scientists are hoping to stretch the periodic table even further. During the last decade, six new super-heavy elements (SHE) were added into the seventh period of the periodic table, with the approval of their names and symbols. This milestone was followed by proclaiming 2019 the International Year of the Periodic Table of Chemical Elements by the United Nations General Assembly. These nuclei completed the table's seventh row. Producing the next elements will require sophistication of new techniques with ultra powerful beams of ions, electrically charged atoms and modern accelerator and detectors. The synthesis and study of super-heavy elements is one of the challenging prospects in nuclear research. Apart from a scientific challenge, it is also an experimental one. These elements exist solely due to their nuclear shell stabilization. Hence, SHEs provide a unique laboratory to study nuclear structure and dynamics under the influence of large Coulomb forces and large mass by testing the validity of relativistic quantum models. In this review, evolution of the periodic table along with the production techniques of SHE and future challenges will be outlined.

**Key words:** *Super-heavy element, periodic table, fusion-evaporation, decay-chains, trans-actinides, limits of chemical elements*

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## CHAPTER-33

TRANSLATIONAL PERSPECTIVES: ADULT NEUROGENESIS IN TREATING

NEURODEGENERATIVE DISEASES

Dr. Priyanjalee Banerjee

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### Abstract:

The study of adult neurogenesis has gained significant attention, particularly in relation to the treatment of neurodegenerative disorders. Neurodegeneration refers to progressive deterioration in the structure and function of neurons in the brain, leading to cognitive dysfunction, memory loss, and motor impairment. Adult neurogenesis is the process by which new neurons are generated in the adult brain. A deeper understanding of adult neurogenesis could open up new therapeutic strategies to treat neurodegeneration and improve brain function. Preclinical studies have revealed that stem cell-based therapies that promote the growth and differentiation of new neurons

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## **BREAKING NEW GROUND: LEVERAGING ARTIFICIAL INTELLIGENCE FOR PRECISION MEDICINE IN NEURODEGENERATION RESEARCH**

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### Abstract:

The future of neurodegeneration research is being continuously driven towards greater precision and a better comprehension of the complex mechanisms of the disease. Artificial intelligence (AI) is a critical tool in achieving this, providing avenues for researchers to combine diverse data sources and integrating results to further understand the underlying disease process. Through this chapter, we hope to contribute to the current discussions on AI applications in neurodegeneration research, identify gaps in the field, and propose future directions for AI-enabled research that align with the goals of precision medicine.

### Keywords

Neurodegeneration, Artificial Intelligence, Precision medicine, Alzheimer's disease, Mild cognitive impairment

### Introduction:

The field of neurodegeneration is witnessing tremendous growth, as scientists strive to understand the many diseases that affect the nervous system, such as Alzheimer's, Parkinson's, Huntington's and ALS [1,2]. Despite the progress made in recent years, there remain significant challenges in identifying the underlying mechanisms of neurodegeneration [3,4,5], predicting the



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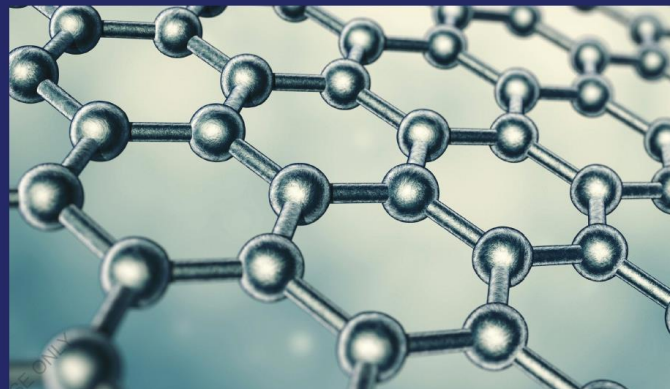
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From last two decades, the use of various carbonaceous materials attract immense attention in the field of material science and organic synthesis. The diverse use of carbon allotrope and its functionalized materials is also noteworthy. In this book, we discuss about the physical and chemical properties of some carbon rich materials. The use of graphene and G-based materials is discussed by the authors. Supercapacitors are also made from graphene based materials and which is discussed in this book. The catalytic applications of graphene oxide in various multicomponent reactions is clearly represented. Authors also describe the diverse use of fullerene based materials and carbon nanotubes. We hope the rich contents of this book may be beneficial for readers.



Abhik Chatterjee  
Kinkar Biswas

Dr. Abhik Chatterjee, Professor of Chemistry, Raiganj University, has been teaching since 2005. He has published several papers in prestigious journals. Dr. Kinkar Biswas received his M.Sc. degree in Chemistry (2007) from University of North Bengal. He has published 25 research articles in many prestigious scientific journals.

## Application of some Carbonaceous Materials: An Emerging Trend



Abhik Chatterjee, Kinkar Biswas

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Dr. Sanjoy Saha\*

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### Ion Exchange Resin: A Versatile Heterogeneous Catalyst: Recent Update

Dr. Sujit Ghosh\*

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## Chapter-10

### Ion Exchange Resin: A Versatile Heterogeneous Catalyst: Recent Update

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2.	Catalysis of the conversion of Glucose to 5-HMF	2022
3.	Catalysis the synthesis of Sulfonamide urea	2021
4.	Catalysis the synthesis of 1, 8-dioxanthene derivatives	2019
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6.	Azidation of phenol and ketone	2021
7.	Ion exchange resin as an efficient Pb(II) absorbing agent	2021
8.	Treatment of Acid Blue 113 from aqueous media	2021

#### 1. Introduction

Ion exchange resins (IER) are water insoluble cross-linking polymer contains acidic or basic ionizable groups which are available in desired size. IER is a polymer matrix made up of insoluble microbeads usually off-white in colour. When metal ion embedded over it, these may be converted to coloured bead depending upon the nature of metal ion in its various oxidation state. These beads are porous having large surface area and they trap the ions and also release them in solution. The most common type of resin used for the commercial purposes is polystyrene sulfonate-based ion exchange resin (**Figure 1**).<sup>1</sup> Polythiolstyrene is another type of ion exchange resin which was developed in 1957,<sup>2</sup> in 1972 McMaster and E. R. Gilliland prepared ion-exchange resin.<sup>3</sup> While focussing on the development of heterogeneous catalyst in the recent past and present years IER is one of the topmost supported systems for many metal catalysts. Whether in the embedding process of transition





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সহকারী অধ্যাপক, বাংলা বিভাগ

রায়গঞ্জ সুরেন্দ্রনাথ মহাবিদ্যালয়

**সারসংক্ষেপ :** বিশেষ হয়েও নির্বিশেষের অন্তর্ভুক্তির মগ্ন চৈতন্যের বিভিন্ন সত্তা ও প্রতিকূলতাকে যিনি সাহিত্যের কায়া রূপে নির্মাণ করলেন তিনি হলেন ঝড়েশ্বর চট্টোপাধ্যায়। দক্ষিণ ২৪ পরগনার সুন্দরবন, সমুদ্র, উপকূল, নোনাভূমি, বাদাবন, ঝাউবন, বালিয়াড়ি, বনভূমি, কাকড়া, চিংড়ি মাছ, মাছ ধরা, ঘূর্ণিঝড়, আড়ৎ, নোনা জল, কাঠ সংগ্রহ, চাষাবাদ, জীবিকা, পালা-পার্বণ, অত্যাচার, তেভাগা, যৌনতা, সংস্কার প্রভৃতি অনুষ্ণ নিয়ে বাংলা সাহিত্যে আবির্ভূত হয়েছেন এক ব্যতিক্রমী কথা সাহিত্যিক ঝড়েশ্বর চট্টোপাধ্যায়। বাংলা ছোট গল্পের চেনা আঙ্গিকে নিয়ে এসেছেন অচেনা সব গল্প গাথাকে। সুন্দরবনের ষেটে খাওয়া মেহনতি মানুষের স্বপ্ন, বিপন্নতা, শোষণ, বঞ্চন, লড়াই, কামনা-বাসনা, নিষ্ফলতা, প্রেম-প্রীতি প্রভৃতি অনুষ্ণ ছোট গল্পের আখ্যানভূমিকে নির্মাণ করেছে। ঝড়েশ্বর চট্টোপাধ্যায়ের ছোটগল্পে সমুদ্র যেন নিজেই একটি চরিত্র হয়ে উঠেছে। সিন্দুক, নোনা, কাঠকুটো, সমুদ্র গড়ি, জলের আয়না, সমুদ্র তীরে, জলকন্যা, ডান দিকের সঙ্গী, মে'র জোছনা, জাহাজঘাটা, সমুদ্র রমণী ও দলিলের ডেউ, জলঘড়ি, যমুনা টকিজ, চারমাস, আয়নার বীজ, তাতারসি প্রভৃতি ছোটগল্পে সুন্দরবনের জনজীবনের বিভিন্ন সত্তা ধরা পড়েছে।

**সূচক/মূল শব্দ :** সুন্দরবন, নোনাভূমি, কাঁকড়া, বিপন্নতা, মৎস্য শিকার, কাঠ সংগ্রহ, ঘূর্ণিঝড়, পালা-পার্বণ, যৌনতা, বঞ্চনা, তেভাগা, সংস্কার প্রভৃতি।

ঝড়েশ্বর চট্টোপাধ্যায়ের প্রথম গল্প 'মগ্নচর' প্রকাশিত হয় ১৯৭২ খ্রিস্টাব্দে 'প্রতিশ্রুতি' পত্রিকায়। তার প্রথম উপন্যাস 'রমাপদর অশন-ব্যসন' 'পরিচয়' পত্রিকার শারদ সংখ্যায় প্রকাশ পায় ১৯৮২ খ্রিস্টাব্দে। "ডায়মন্ড হারবার, কুলপি, কাকদ্বীপ, মন্দির বাজার, মথুরাপুর, রায়দিঘি, পাথরপ্রতিমা, সীতারামপুর, নামখানা, সাগর, জম্বুদ্বীপ, ঘোড়ামারা দ্বীপবাসি মানুষদের প্রতিদিনের বেঁচে থাকা বিশ্বাস-অবিশ্বাস, পালা-পার্বণ, যাত্রা-পাঁচালী, মজ-তন্ত্র, চাষ-আবাদ - এসব কিছুর মধ্যে বিস্তীর্ণ হয়ে আছে দক্ষিণবঙ্গের যে সামাজিক ইতিহাস - ঝড়েশ্বর চট্টোপাধ্যায় সেই সামাজিক ইতিহাসের আলেখ্য নির্মাণ করেছেন তার আখ্যান ভুবন জুড়ে।" ১ বিগত চার বছর ধরে তার কথা সাহিত্যের বিশাল ব্যাপ্তি। ১৯৯২ থেকে ২০১০ সালের মধ্যে তিনি রচনা করেছেন প্রায় ১১ টি উপন্যাস। রমাপদর অশন-ব্যসন, বন্দর, বিনোদনের বিপণন, স্বজনভূমি, চরপূর্ণিমা, পুবের মেঘ দক্ষিণের আকাশ, ফুলের মানুষ, সহিস, জোড় কলম, নভেলেট,

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Book Chapter Published by Dr. Sujit Ghosh (Chemistry) (Page 1 of 6)


# Recent Development of Chemical Research being Implemented in Biology and Medicine

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Fascinating Science

*Recent Development of Chemical Research being Implemented in Biology and Medicine*

### Chapter - 10

## Applications of Indole-based derivatives in Therapeutic/Medicinal Use: Recent development

### Abstract

The monitoring of therapeutic drugs involves measuring drug concentrations in plasma, serum or blood. Any drug should be delivered in prescribed doses to get its best therapeutic value. As some excess dosage may result toxic effect indicating a drug or any therapeutic agent has a narrow therapeutic range. By therapeutic drug monitoring (TDM) system this range can be known and this is very important to know the lethal dose (LD), effective dose (ED) and toxic dose (TD) for a specific drug. Clinically a medicine has also been applied after careful study of these values. In organic chemistry, biggest groups of organic compounds belong to Heterocyclic compounds. Heterocyclic compounds are the class of cyclic compounds which contain at least one distinct hetero atom (N, O, S e.t.c.) other than carbon in a ring structure. It is the building block of nucleic acids found in nature as pyrimidine and purine-based ring in DNA, RNA. The importance of heterocyclic compounds as therapeutic agents is owing to its ability in a wide variety of intermolecular interactions. Besides hydrogen bonding, metal coordination bonds these compounds show good donor/acceptor capability,  $\pi$ - $\pi$  stacking non covalent interaction, van der Waals as well as hydrophobic forces of interaction, which provide multiple mode of access to bind with enzymes. In addition, their wide range of ring sizes and structural variations meet the required tuning while needed for enzyme binding. From the use in our everyday life Heterocyclic compounds exhibit thrilling medicinal properties including anticancer agents. Indole based alkaloid derivatives have utmost importance among those in drug discovery study. Use of indole derivatives as bioactive molecules against various kinds of cancer cell, microbes and abnormalities in the human body are increasingly interesting now a days. Some important examples of Indole derivatives having medicinal and therapeutic values are alkylindoles, tryptophan, melatonin, serotonin, tryptamine, heteroauxin, pindolol, amedaline e.t.c.





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**Dr. Pranab Barman • Dr. Swapan Kumar Maity**

### About the Editors



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Dr. Barman has published more than 30 research articles in various reputed National & International Journals and Edited Books. He has presented many research papers in National and International Seminars and Conferences. He has edited two books entitled "Higher Education in India: An Overview" and "Social Media: Leisure, Health & Education". Dr. Barman has also published many text and reference books for different level students. "Uchhamadhyamik Shikshabigyamer Ruparekha" and "Shikhan Sampad O Sreni Byabasthapan" (Learning Resource and Classroom Management) are the few books authored by Dr. Barman.



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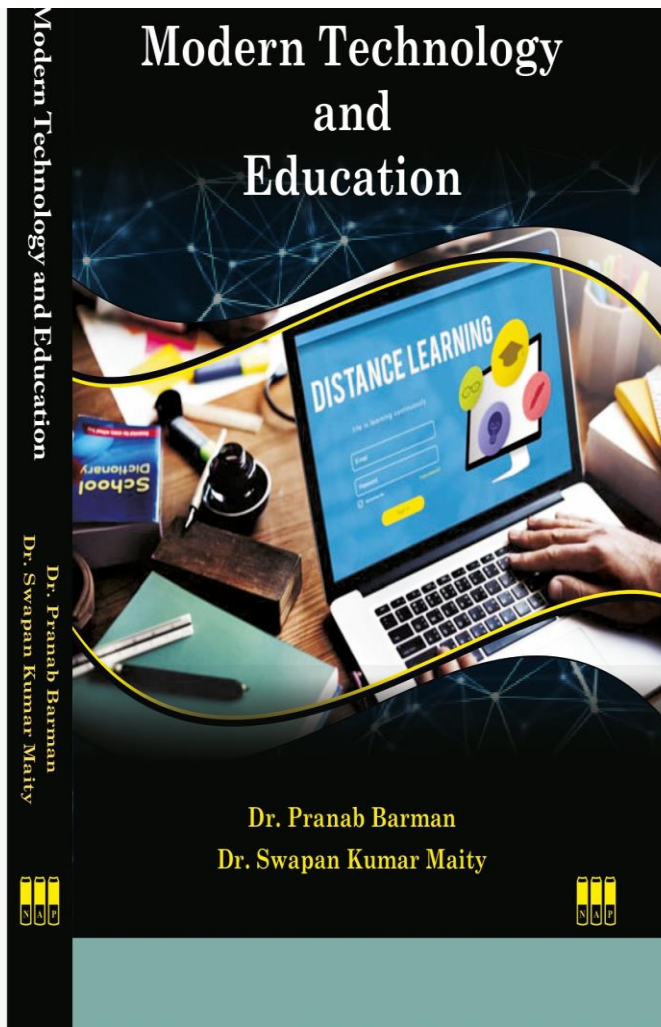
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### About the Book

This book covers almost all the trending issues in the field of application of technology in education. The present concerns in the realm of modern technology and education like learners' attitude towards digital learning, challenges and prospects of online education at different level, evolution in pedagogy in pandemic situation, scope and concerns of technology based education have been discussed comprehensively in this book. It will cater to the needs of the educationists, researchers, teachers and the policy makers in our country. The book will be serving as a text book for the researchers and the students in the field of educational research.

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## CHAPTER - 5

# EDUCATIONAL TECHNOLOGY: ITS EVOLUTION AND EFFECTS

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Assistant Professor, Department of Education, Raiganj Surendranath Mahavidyalaya,  
Raiganj, Uttar Dinajpur, West Bengal, India

### Abstract

Life without the technological help and its up gradation is something people cannot imagine of at the present time. It has not only brought about major changes in our day to day activities but also has benefitted in many other fields. Education being one of the most important factors of human life, technology has had a crucial role in this regard too. Education is no longer imparted via textbook learning, teacher using the black-board to explain n students writing the notes in their notebooks. Technology has become an important element of our daily life. Taking into consideration the increasing change in the world caused by technology, the students must therefore be accordingly prepared for better achievement of their aims n goals. This paper shall focus on the major changes brought about by technology in the field of Education.

**Keywords:** Education, Technology, Teaching-Learning, Students.

### INTRODUCTION

It is usually observed that it is neither capital investment nor increased workforce but technology which holds the key to development and growth-economic and educational. Technology is not only the 'Tool' for the development of science but also the 'Change' in the social process. Educational technology is a system in education in which machines, materials, media, men and methods are interrelated and work together for the fulfillment of specific educational objectives. It is an applied or practical study which aims at maximizing educational purposes, educational content, teaching materials, educational environment, conduct of students, behaviour of instructors and interrelations between students and instructors. It is a branch of study in which the results of engineering techniques, information science, natural sciences, behavioural sciences and human technology are to be used to promote the efficiency of education.

In this technological; era the evolution of terms like chemical technology, printing technology, leather technology, bio-technology etc, has affected the field of education to give wide currency to the concept of educational technology. The term at the outset can be taken to mean two things- introducing technological

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## A Book on "Fascinating Science"

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Fascinating Science

validation in that we now set the bifurcation parameter to values that have never been trained before: these parameter values are completely "new" to the reservoir machine. This generalizability of the reservoir computing scheme is key to predicting transient chaos and system collapse. Specifically, the dynamical evolution of the reservoir machine is still governed by Eq. (A3), but with a different value of the bifurcation parameter  $b$ . To set the initial condition for the reservoir machine, we use a short period of the real time series from the target system (e.g., several oscillation cycles), taking from an arbitrary value of the bifurcation parameter in the sustained chaos regime as the input to "warm up" the neural network. After this "warmup," we set the hidden states at the last time step  $t_{\text{last}}$  as the initial condition for testing.

Taken together, there are eight hyperparameters:  $k$ ,  $n$ ,  $d$ ,  $\rho$ ,  $k_b$ ,  $b_0$ ,  $\alpha$ , and  $\beta$ . Their values for the three examples in this paper are listed in Sec. III in the main text, with the optimization process behind explained in Appendix B below.

### Appendix B: Sensitivity to Hyperparameters

A well-trained reservoir machine is key to its ability to predict transient chaos and system collapse. Here by "well trained" we mean that the reservoir, after training, is able to accurately predict the dynamical evolution of the target system for several Lyapunov times with relative error less than 5% for all the selected values of the bifurcation parameter (validation process). As is known [13–28], the dependence of the prediction results on the hyperparameters can be quite sensitive. This is especially so in our study because of the necessity for the reservoir machine to possess the predictive power for several values of the bifurcation parameter. To equip the reservoir machine with the power to predict the behavior of the target system at bifurcation parameter values other than those used in training, it is necessary to optimize the hyperparameters. We have used the Bayesian optimization method [25] that is contained in the PYTHON package "skopt" [49]. An issue is that the optimization algorithm typically gives multiple sets of hyperparameter values. Our solution is to use these hyperparameter values to train multiple

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## "Cross Dehydrogenative Coupling" (CDC) reaction: Mechanism and intermediates with recent reports

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### Abstract:

Cross dehydrogenative coupling (CDC) reaction is the coupling reaction between two different unmodified C–H bonded compounds either by metal catalyzed or uncatalyzed or in presence of an oxidant. The role of oxidant is to remove two hydrogen atoms from two different C–H bonded species. This coupling is not only limited for C–C bond formation but also C–O and C–N bonds can be conveniently formed by this method. Both intermolecular and intramolecular CDC reactions have received much attention over the last two decades. The step and atom economy of CDC reaction makes it highly popularized in the perspective of green chemistry. The present review will briefly discuss about the various type intermediate and mechanistic pathways of CDC reaction with recent literature reports.

Keywords: Cross dehydrogenative coupling, reaction mechanism, intermediate, C-C coupling, HAT.

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# Recent Advancement in Therapeutic Use of Chemical Compounds and Drug Delivery

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### 7. Intramolecular Palladium-Catalyzed Cyclization and Subsequent $\beta$ -H Elimination or C-H Activation: A General Method for the Synthesis of Pyran Rings as Anticancer Capabilities in Medicinal Chemistry

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*Recent Advancement in Therapeutic Use of Chemical Compounds and Drug Delivery*

### Chapter – 10

## Application of Selective Carbon-Based Nano Material for Targeted Drug Delivery

### Abstract

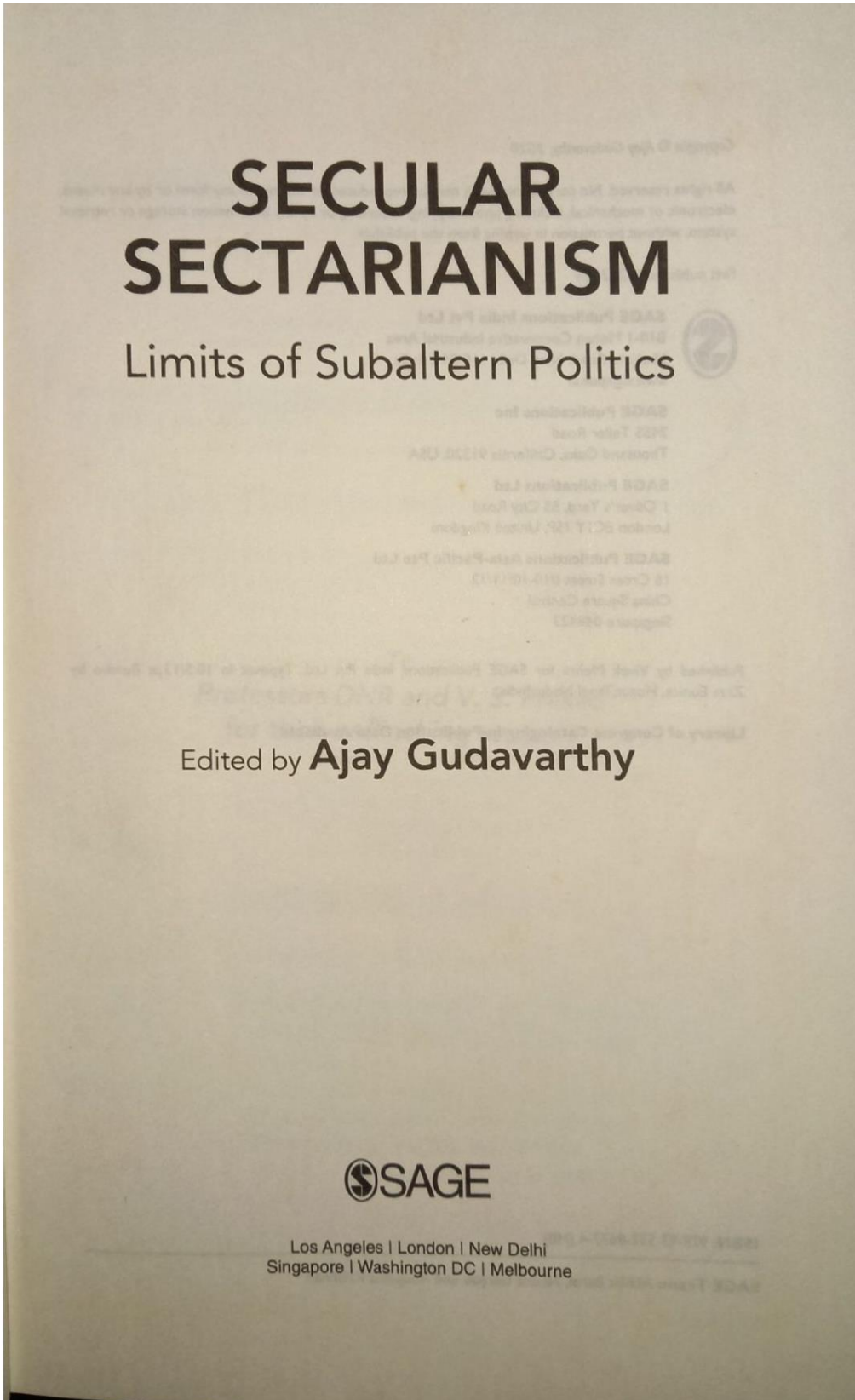
Targeted drug delivery also called smart drug delivery, is a method of transporting medication to a patient in such a specific way that increases the concentration of the medication in the selective parts of the body leaving other parts. Types of various normal drug delivery include oral drug delivery, injection drug delivery, topical drug delivery, drug delivery for carcinoma (tumors) therapy, gene delivery, vaccine delivery. But targeted drug delivery is a very specific system that has been developed to optimize regenerative techniques. Various metal matrix and metal-free nanocomposite have been discovered for targeted drug delivery. A few of them are ceramic-metal nanocomposite, polymer-metal nanocomposite, metal organic frame work, carbon nanotube-metal nanocomposite, graphene-metal nanocomposite etc. Carbon-based nanomaterials such as carbon nanotubes (CNTs), fullerenes, carbon nanofibers, carbon black etc. are produced in many industrial sectors have been explored for targeted drug delivery. Some polymeric nanomaterials such as dendrimer, chitosan can also be utilized for same purpose using nanotechnology, nanoengineering and sometimes by preparing nanomedicine. Drug molecules can be selectively injected by using nanocarrier, nanocomplex or by nanoconjugates.



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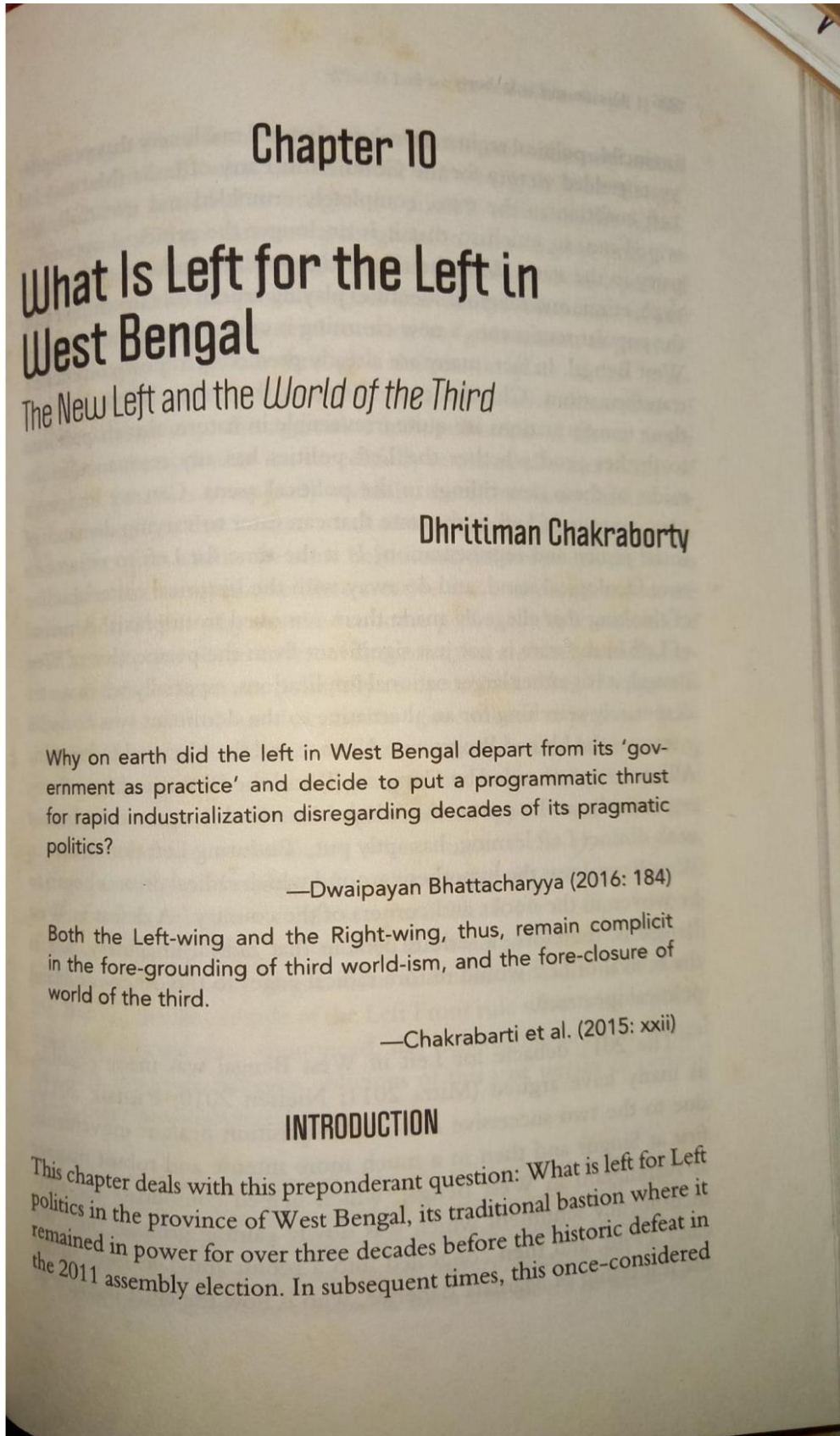




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(English) (Page 3 of 3)



### Chapter 10

## What Is Left for the Left in West Bengal

The New Left and the *World of the Third*

Dhritiman Chakraborty

Why on earth did the left in West Bengal depart from its 'government as practice' and decide to put a programmatic thrust for rapid industrialization disregarding decades of its pragmatic politics?

—Dwaipayan Bhattacharyya (2016: 184)

Both the Left-wing and the Right-wing, thus, remain complicit in the fore-grounding of third world-ism, and the fore-closure of world of the third.

—Chakrabarti et al. (2015: xxii)

### INTRODUCTION

This chapter deals with this preponderant question: What is left for Left politics in the province of West Bengal, its traditional bastion where it remained in power for over three decades before the historic defeat in the 2011 assembly election. In subsequent times, this once-considered

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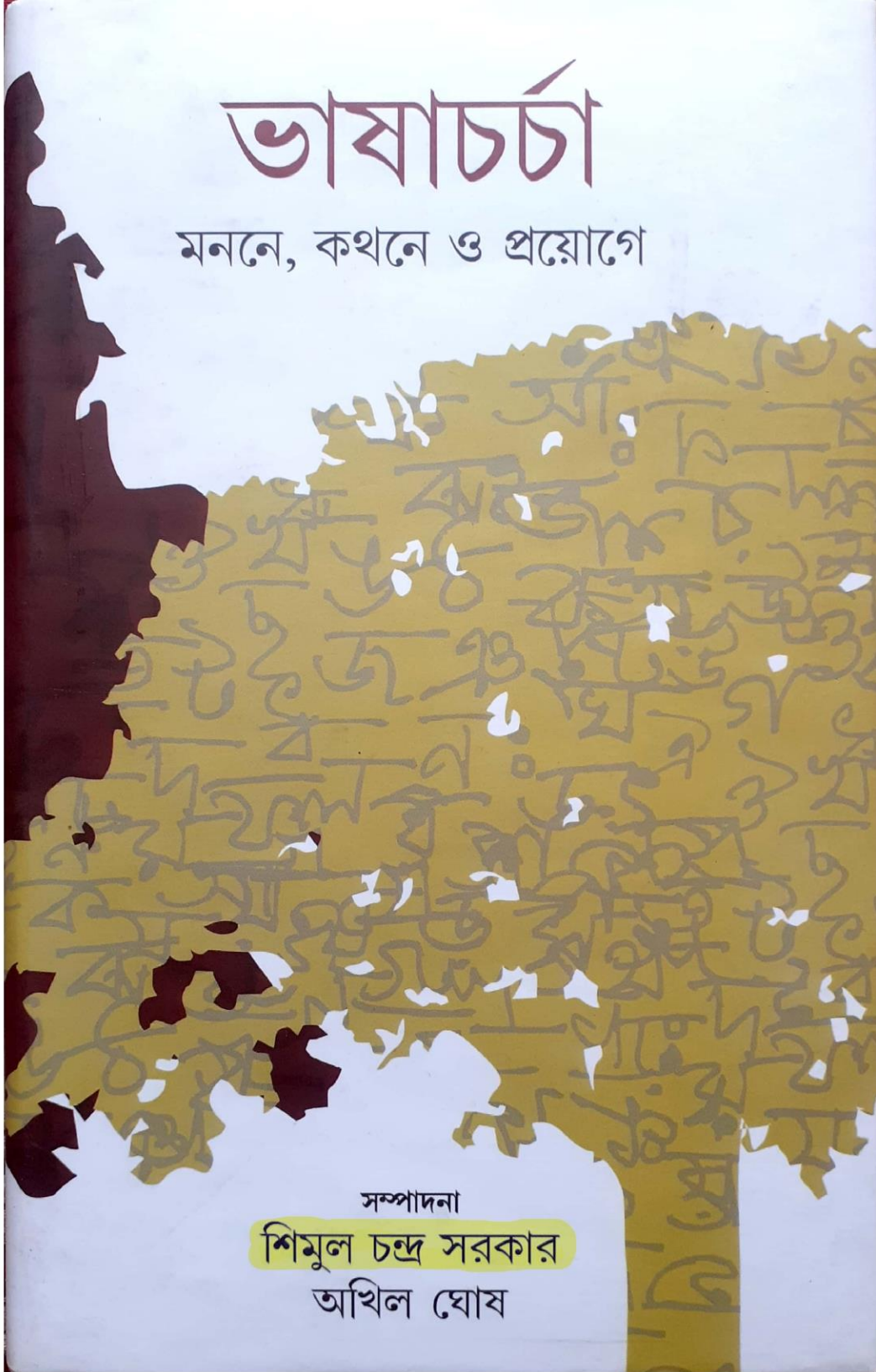
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প্রকাশক ও স্বত্বাধিকারীর লিখিত অনুমতি ছাড়া কোনো উপায়েই এই গ্রন্থের  
কোনো অংশের কোনোরূপ পুনরুৎপাদন বা প্রতিলিপি করা যাবে না। এই শর্ত  
লঙ্ঘিত হলে উপযুক্ত আইনি ব্যবস্থা গ্রহণ করা হবে।

প্রচ্ছদ দেবশিস সাহা

দি সী বুক এজেন্সী-র পক্ষে ২০১৭, মুক্তারামবাবু স্ট্রিট, কলকাতা ৭০০০০৭ থেকে  
জয়ন্ত সী (৯৮৭৪১৬৮৪৭০) কর্তৃক প্রকাশিত এবং কমলা প্রেস, ২০৯এ, বিধান সরণী,  
কলকাতা ৭০০০০৬ থেকে মুদ্রিত।

মূল্য : পাঁচশো টাকা (৫০০.০০)

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Principal  
Raiganj Surendranath Mahavidyalaya  
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	১৫৭	বিজন মন্ডল

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## বিহার সংলগ্ন উত্তর দিনাজপুরের বাংলা কথ্যভাষার 'শব্দার্থতত্ত্ব' : একটি ভাষাতাত্ত্বিক পর্যালোচনা

শিমুল চন্দ্র সরকার

১৯৪৭ সালের ১৫ই আগস্ট ভারতবর্ষ যখন দ্বিখণ্ডিত হয়ে স্বাধীন ভারতবর্ষ ও পাকিস্তান রাষ্ট্রে পরিণত হল তখন দিনাজপুর জেলাও দ্বিখণ্ডিত হল। দিনাজপুর জেলার পূর্বাংশ পড়ল তৎকালীন নবজাত পূর্বপাকিস্তানে (অধুনা বাংলাদেশ), যার নাম 'পূর্বদিনাজপুর' আর পশ্চিমাংশ ভারত রাষ্ট্রভুক্ত হয়ে পশ্চিমবঙ্গের অধীন একটি নতুন জেলা 'পশ্চিম দিনাজপুর' নামে চিহ্নিত হল। পরবর্তীকালে প্রশাসনিক সুবিধার কারণে ১৯৯২ সালের ১লা এপ্রিল 'পশ্চিম দিনাজপুর' বিভক্ত হয়ে 'উত্তর দিনাজপুর' ও 'দক্ষিণ দিনাজপুর' জেলা দুটির উৎপত্তি হয়। ১৯৫৯ সালে বিহার থেকে বিভক্ত করে পশ্চিম দিনাজপুরের অন্তর্ভুক্ত করা হয় ইসলামপুর মহকুমাটিকে। এই মহকুমার বিশেষ কিছু অঞ্চলে বিহারের সাংস্কৃতিক ও ভাষাতাত্ত্বিক নিদর্শন আজও বর্তমান রয়েছে।

উত্তরদিনাজপুর জেলার ভৌগোলিক পরিসীমা ৩১৪২ বর্গ কিমি। এই জেলার অবস্থান অক্ষাংশ ২৫° ১০' ৩০" উত্তর থেকে ২৬° ৩৫' ১৫" উত্তর-এর মধ্যে এবং দ্রাঘিমাংশ ৮৮° ৩৫' পূর্বের মধ্যে। এই জেলার পূর্বে ২২৭ কিমি দূরবর্তী আন্তর্জাতিক বাংলাদেশ বর্ডার, পশ্চিমে ২০৬ কিমি দূরবর্তী বিহার রাজ্যের সীমারেখা, উত্তরে দার্জিলিং এবং জলপাইগুড়ি জেলার সীমানা ও দক্ষিণে মালদা ও দক্ষিণ দিনাজপুর জেলা অবস্থিত। এই জেলার উপর দিয়ে ৩১ ও ৩৪ নং জাতীয় সড়ক বহমান তাই যোগাযোগ ব্যবস্থা উন্নত। এই জেলার প্রধান নদ-নদীগুলি হল কুলিক, নাগর ও মহানন্দা। উত্তর দিনাজপুর জেলার স্বাভাবিক বৃষ্টিপাত (বাৎসরিক) ১৬৫-২০০ সেমি। তাপমাত্রার চারিত্রিক বৈশিষ্ট্য উষ্ণ গ্রীষ্মকাল সঙ্গে প্রচুর উচ্চ আর্দ্রতায়ুক্ত বৃষ্টিপাত এবং শীতকাল দ্বারা নিয়ন্ত্রিত। গ্রীষ্মকাল শুরু হয় এপ্রিল মাস থেকে। বর্ষাকাল জুন মাস থেকে শুরু হয়ে সেপ্টেম্বর মাস পর্যন্ত স্থায়ী হয়। ডিসেম্বর এবং জানুয়ারী হল উচ্চ শীতযুক্ত মাস। গ্রীষ্মকালে ৪২° সেঃ বা তার বেশি এবং শীতকালে ৪° সেঃ বা তার কম তাপমাত্রা লক্ষ্য করা যায়।

উত্তর দিনাজপুর জেলা প্রধানত হিন্দু, মুসলিম ও খ্রিস্টান সমাজ দ্বারা গঠিত। প্রভৃতি ধর্মাবলম্বী মানুষ জন সমাজে পাশাপাশি অবস্থান করেন কিন্তু আলাদা আলাদা পাড়া বা

৪৫

Chandan S

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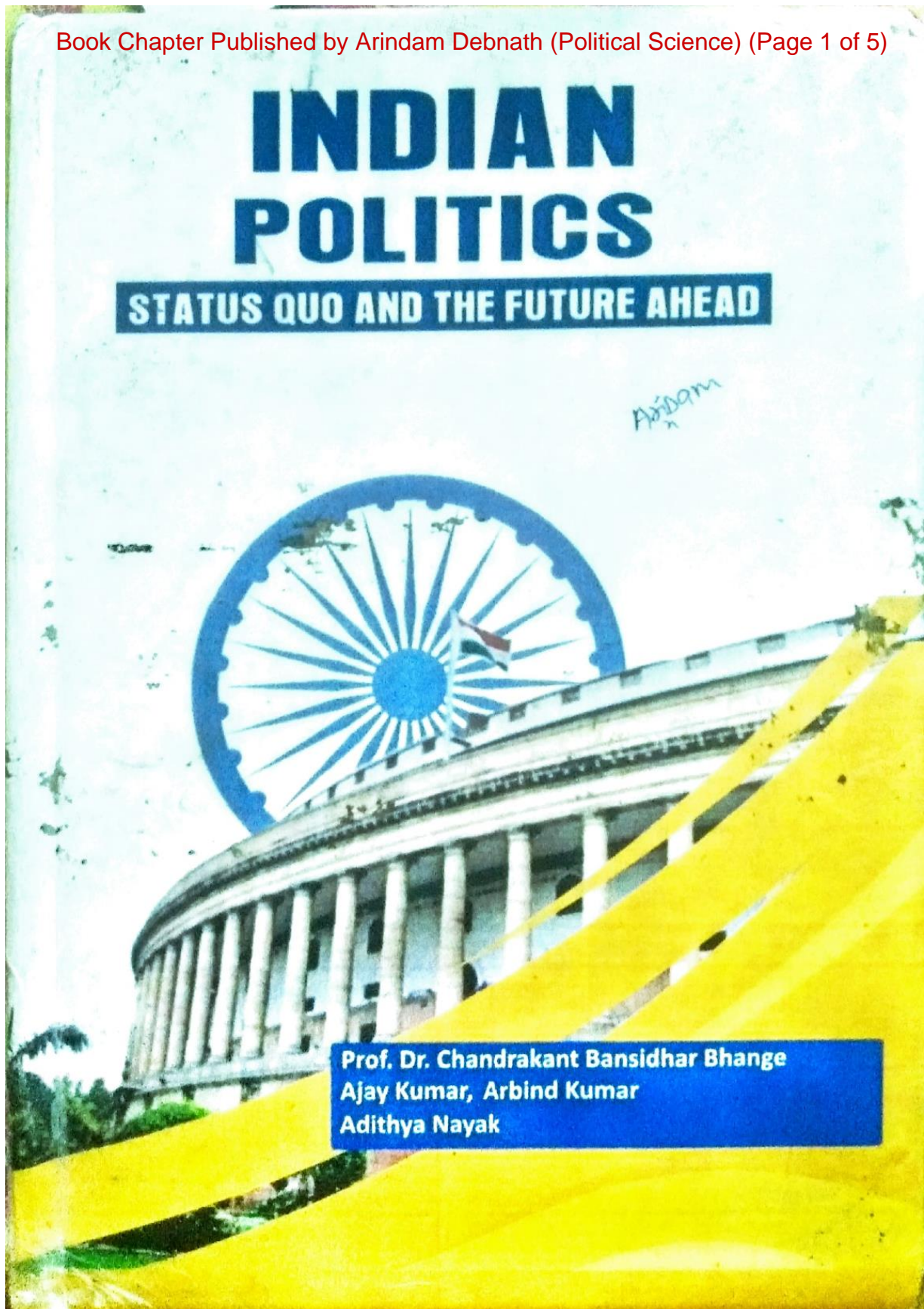
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**Adithya Nayak**

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# "Indian Politics: Status Quo and the Future Ahead"

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State Conference	04
Chapter in an edited book: National	51
International	01

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National Conference/Seminar	45

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Shri Jagdish Prasad Jhabarmal University in Jhunjhuna, Rajasthan. Currently 2 Research Scholar working under his supervision.

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Late Maj. Gen. Y.S. Paranjape Paritoshak



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is currently completing his Post Graduation from Department of Political Science, DAV College, Abohar (Punjab). He has graduated from Guru Nanak Khalsa College Abohar in the year 2018 and has passed the National Eligibility Test (UGC-NET) in the year 2019. He has also participated and presented papers at many National and International Seminars & multiple Webinars, Conferences, FDP and workshops. He has published many Research papers. At the same time, he is very interested in studying International relations, Indian Politics and Marxism.



### Arbind Kumar

has worked as a Assistant Professor (Political Science) and Research Associate (Gandhian Study Center) at DAV College Abohar, Punjab. He received his bachelor's and master's degrees in Political Science. He obtained his B.Ed degree in the year 2015. He has passed National Level Examination U.G.C. NET in July 2018 in Political Science. He has also passed CTET (2016) at central level and Punjab Teacher Eligibility Test (2017, 2018) at the Punjab level. He started working as Assistant Professor (Political Science) in July 2019. He has also participated in many National and International Seminars & Webinars, conferences and workshops. He is also interested in writing articles and journals.



### Adithya Nayak

is pursuing his undergraduation in law from KLES LC, Bengaluru. He is the founder and director of Farak, a youth organisation that strives towards civil and social action. He is an avid debator and has attended about 40+ MUN conferences in all; both in the capacity of a delegate and an executive board member across the country with MunSophical 2020 and BITS MUN Goa 2020 along with many state and national level debates like Difficult Dialogues 2020. Adithya has also participated in various moot courts at the national level on laws on medical negligence to the Insolvency and Bankruptcy Code (IBC). He was one of the 60 fellows short listed out of thousands for the "Yuva Bhagidari" fellowship by IYC where he went on to be selected as an intern. In addition to these accolades, he is active in the field of social and environmental action and currently works on formulating policies and bylaws for municipal corporations in the paradigm of waste management.

the paradigm of waste management.



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### Chapter -18

## Construction of Barrages and Dams and Displacements its Effect on Tribal Life :- Emergence of Maoism in India.

**Arindam Debnath**

**Assistant Professor**

**Raiganj Surendranath Mahavidyalaya**

**North Sudarshanpur, Raiganj, Uttar Dinajpur, 733134, West Bengal.**

### Introduction :

The Indian state is becoming an economic powerhouse, but the Maoist movement is threatening it continuously. Delhi's so praised economic globalization and its importance on the mini-malist state interference has much to do with the Maoist further gathering of strength. Today these leftist extremist are stretching their –activity area from the Nepalese border to northern parts of Kerala (an Indian province). The Indian ministry of home affairs declared states and districts are highly affected (sahani/singh 2010); seven of them are quite dangerous. Some pockets and interior jungles where downtrodden poverty exploited people and untouched from Indian mainstream civilization are attracted to Maoist politics. They mobilize them against the state.

### Objective:-

The main objective of this synopsis is to review this problem and find a solution. Barrage and dams are required for irrigation and hydroelectric power. It covers a vast area as a result the tribal people, as well as nature, are deeply affected. The tribal people have to shift from their homeland,





**RAIGANJ SURENDRANATH MAHAVIDYALAYA**

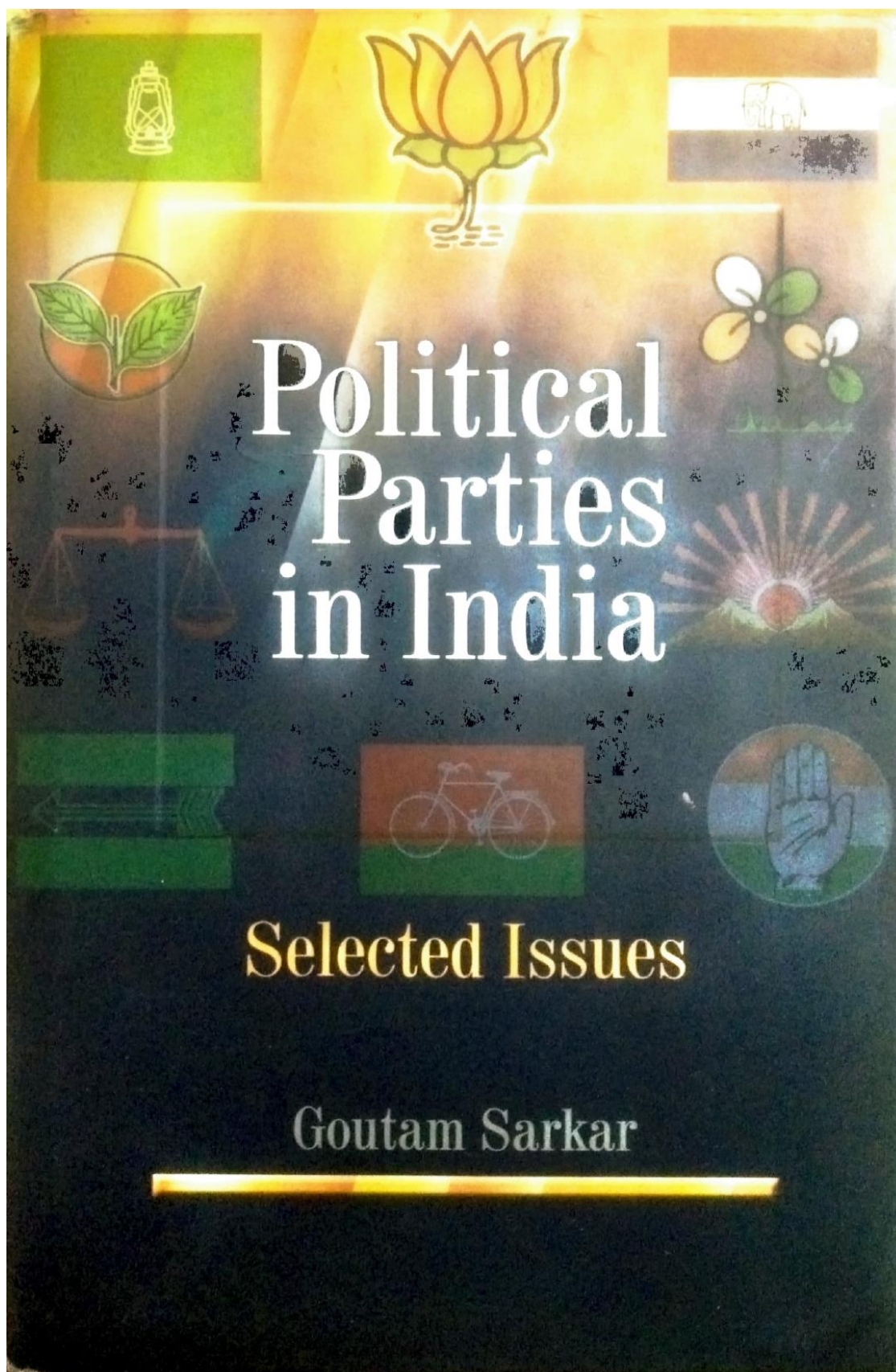
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# POLITICAL PARTIES IN INDIA

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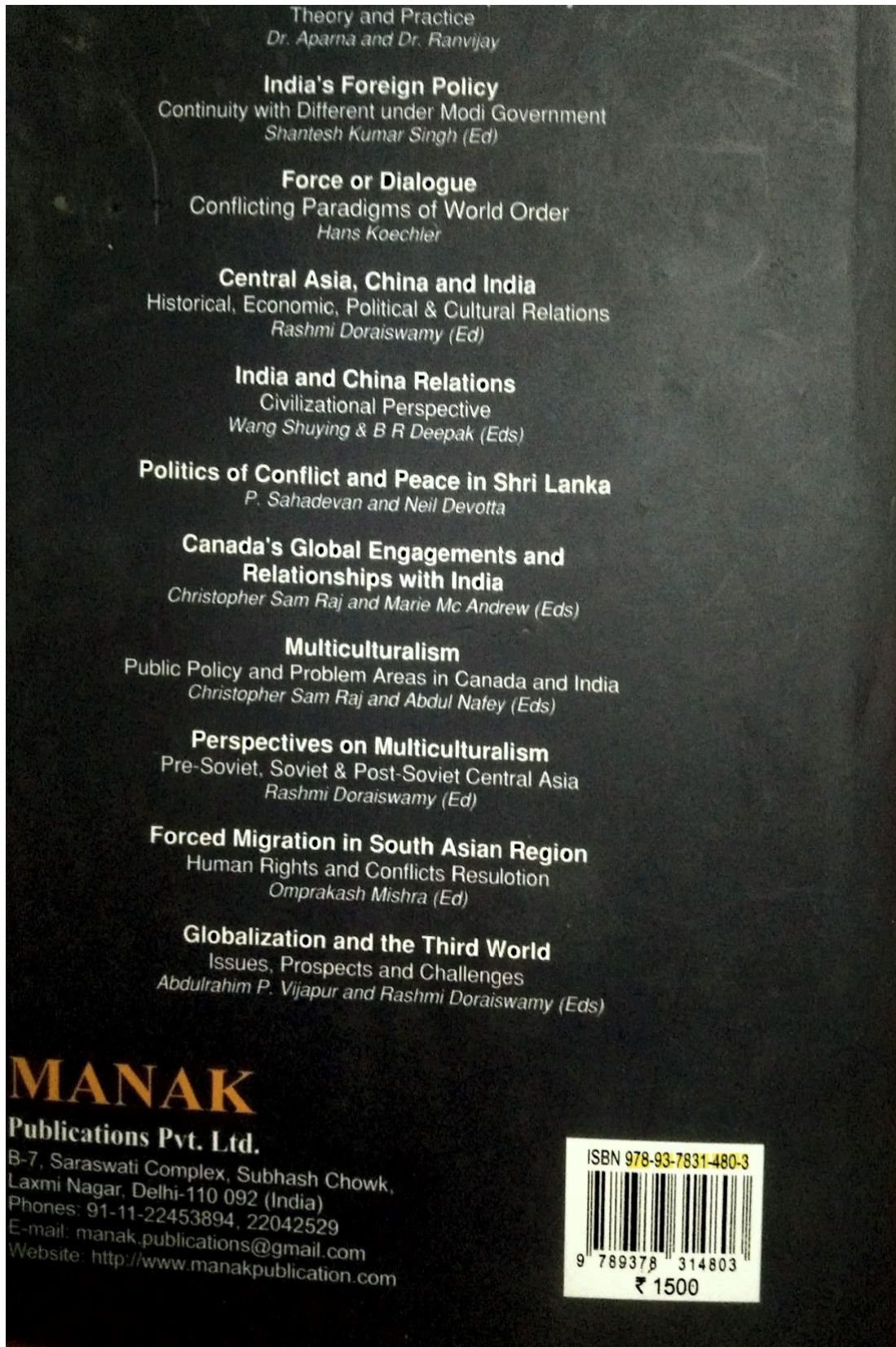
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## Democracy, Autocracy Needs of New Thinking and Party in Indian Society

Arindam Debnath

### Introduction

This is the time long discussed subject, in which path, autocracy or democracy, the economic and social development can be flourished successfully and which party system will take leading part in this development work. Most of the scholar who supported democracy democratic party system but there area small cell of scholars who support autocracy and a single party for economic and social development of the country. Democracy means rule of the people without judging their capabilities whereas autocracy is directed by one individual or by a small core group. In democracy, decision is taken by consensus, whereas in autocracy, decision can be made by one individual or one

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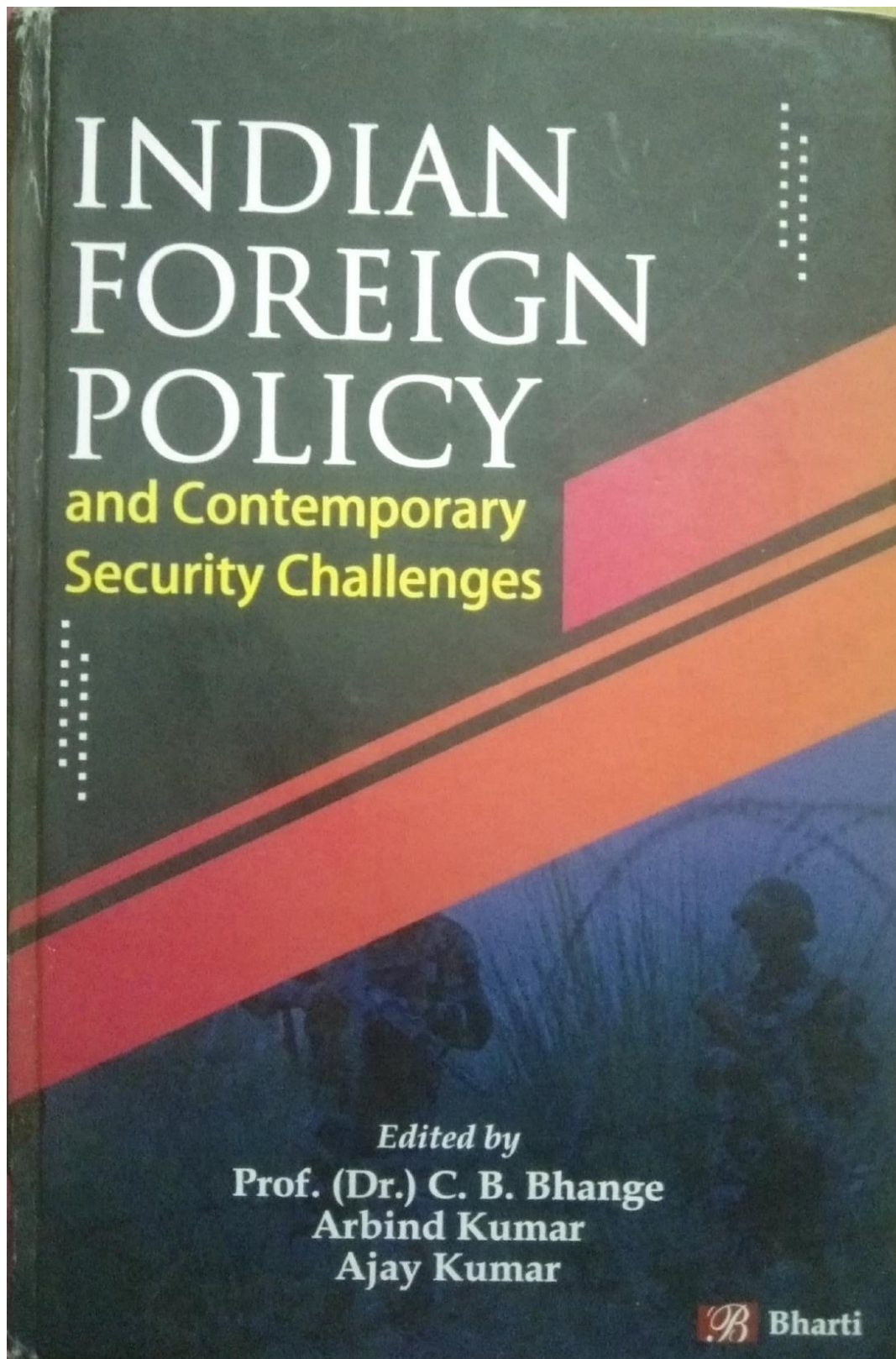
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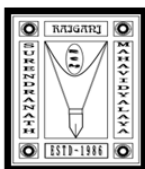
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# INDIAN FOREIGN POLICY AND CONTEMPORARY SECURITY CHALLENGES

*Edited by*

Prof. (Dr.) C. B. Bhangе      Arbind Kumar  
Ajay Kumar



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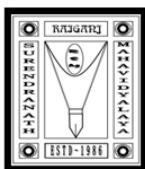
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### The Relation between India and Bangladesh-Regarding Water Disputes and Solutions

Arindam Debnath\* & Sanat Kumar Singha\*\*

The relation between India and Bangladesh like the relation between two children of a mother. This relation has been changed in many ways during 21<sup>st</sup> century. India had taken an important role in the creation and independence of Bangladesh. India always extended their friendly hand for the independence and financial development of Bangladesh. Bangladesh, which at one time was a part of Pakistan (East Pakistan) is now an independent sovereign country..We know that every country whatever small it is has a self-respect. We also knew that, the people of Bangladesh was annoyed about the behaviour of Pakistan. Their language and culture were suppressed by the then Pakistan government. Even after the massive victory of Mujibar Rahaman in 1970 , the then Pakistan's President Yahiya khan had first refused to transfer power to Sk..Mujibar Rahaman. Then the people of East Pakistan announced a total boycott and non-cooperation with the Pakistan government and started all out agitation .A large number of people taken shelter in India as a refugee. After that when India raises that the conditions to be normalized immediately, Pakistan blame India that India were intervening in the internal matter of Pakistan. India then raised the matter to UNO and started propogandas in different forum of the world and made known them the actual condition and torture of Pakistani soldiers on the people of East-Pakistan. .India formed a joint forum with the Mukti-Fauj of East Pakistan(Bangladesh) and at last the two ways attacks of Mukti-Bahini and Indian army, on 16<sup>th</sup> December 1971 Bangladesh came in World Map as a free country. India not only provided them military help but also helped 125 crore rupees financial Help and five million tons of food grains.

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## Left Politics in South Asia Reframing the Agenda

*Edited by*  
Ravi Kumar



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### Who is Afraid of Postcolonial Theory? Development, Accumulation and the Spectre of *Outside*

*Dhritiman Chakraborty*

*Postcolonial theorists have spilled a great deal of ink tilting against windmills of their own creation. In so doing they have also given license to a massive resurgence of nativism and Orientalism.*

—Vivek Chibber, 2013: 77

*Postcolonial societies require such a theory of the outside so as not to remain altogether outside Theory any more. It is the theory of foreclosure (in Lacan) that offers postcolonial theories a way of not remaining foreclosed in Theory any longer.*

—Anup Dhar, unpublished working paper, 2016

This chapter wants to argue why we need the theoretical rubric called 'postcolonialism' while talking of politics of resistance in India in particular and South Asia in general. In doing that it is guided by two kinds of critico-theoretical impulses: first the question of 'difference' which will be defined as an inalienable constitutive element of the political in a field overdetermined by heterogeneous socio-economic forces in relation to the global circuit of capital qua developmentalist regime in India, secondly this emphasis on 'difference' does not necessarily determine the object of its study as 'heavily oriented towards culturalism' (Chibber 2011), therefore placing political (as understood in the Marxian dialectic of class analysis) in a virtual cul de sac. On the contrary, this paper tries to re-engage with the question of class and surplus labour in the capitalist drive for accumulation in the South Asian context without

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