



# TECHNO INDIA NJR INSTITUTE OF TECHNOLOGY

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<b>Metric ID</b> 3.3.3	<b>Number of extension and outreach programs conducted by the institution through NSS/NCC/Red cross/YRC etc., during the last five years ( including Government initiated programs such as Swachh Bharat, Aids Awareness, Gender Issue, etc. and those organised in collaboration with industry, community and NGOs)</b>
<b>DVV Clarification</b>	<b>Please provide as per SOP (a) the data in the data template the list of number of books or chapters or papers published in refereed Journals with title, author, name of Journal and year of publication  (b) upload scanned images of cover page, first page and last page of the books, research paper countersigned by the head of the institution in the website of the institution with link in the DVV portal</b>

For Techno India NJR Institute of Technology  
पंकज पौरवाल  
Dr. Pankaj Kumar Perwal  
(Principal)

**3.2.2 Number of books and chapters in edited volumes/books published and papers published in national/**

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Year of publication	ISBN/ISSN number of the proceeding	Whether at the time of publication Affiliating Institution Was same Yes/NO	Name of the publisher
1	Dr Nitin Kothari	Analog Electronics			2010	ISBN: 9788179062159	Yes	Himanshu Publications
2	Dr Nitin Kothari	Electronics Circuits			2010	ISBN: 9878179062708	Yes	Himanshu Publications
3	Dr Nitin Kothari	Linear Integrated Circuits			2010	ISBN: TB9788179061954	Yes	Himanshu Publications
4	Prof P Chakrabarti	Investigations towards realizing Human Thought Process Quantification			2016	ISBN : 978-3-659-95689- 8	No	LAP Singapore
5	Prof P Chakrabarti	Optimization of Security Issues vis-à-vis Mobile IP			2016	ISBN : 978-3-659-96284- 4	No	LAP Singapore
6	Prof P Chakrabarti	Underground blast control using SMA Damper and Artificial Intelligence			2016	ISBN: 978-3-659-96464-0	No	LAP Singapore
7	Prof P Chakrabarti	Topo Inhibitory Activities of Phytoconstituent & AI based Drug Design			2016	ISBN : 978-3-659-97346- 8	No	LAP Singapore
8	Prof P Chakrabarti	Vibration Control of Near Fault Earthquake – CLCD & AI Perspective			2016	ISBN: 978-3-659-95405-4	No	LAP Singapore
9	Prof Yasmin Ali	Solar Energy Conversion and Storage: Photochemical Modes			2016	ISBN 9781482246308	Yes	CRC Press
10	Prof Yasmin Ali	Green Chemistry Fundamentals and Applications			2016	ISBN: 978-1-926895-43-7	Yes	CRC Press
11	Prof Yasmin Ali	Environmental Engineering			2016	ISBN 81-8142-382-8	Yes	Ramesh Book Depot
12	Prof Yasmin Ali	Practical Environmental Engineering			2016	ISBN 81-8142-381-X	Yes	Ramesh Book Depot
13	Dr Nitin Kothari	Biomedical Instrumentation			2016	ISBN: 9788179061961	Yes	Himanshu Publications
14	Prof P Chakrabarti	Energy Issues in Mobile Ad Hoc Networks – A Research Perspective			2017	ISBN: 978-3-330-03745-8	No	LAP Singapore
15	Prof P Chakrabarti	Fundamentals of Soft Computing			2017	ISBN : 978-9-386-55156-6	No	BPB Publications
16	Prof Yasmin Ali	Environmental Engineering and disaster management			2017	ISBN 978-81-7906-21-6	Yes	RBD Professional Publications
17	Prof Sangeeta Choudhary	Environmental Engineering -I			2017	ISBN : 978-81-924049-18	Yes	PriyaTech Publications

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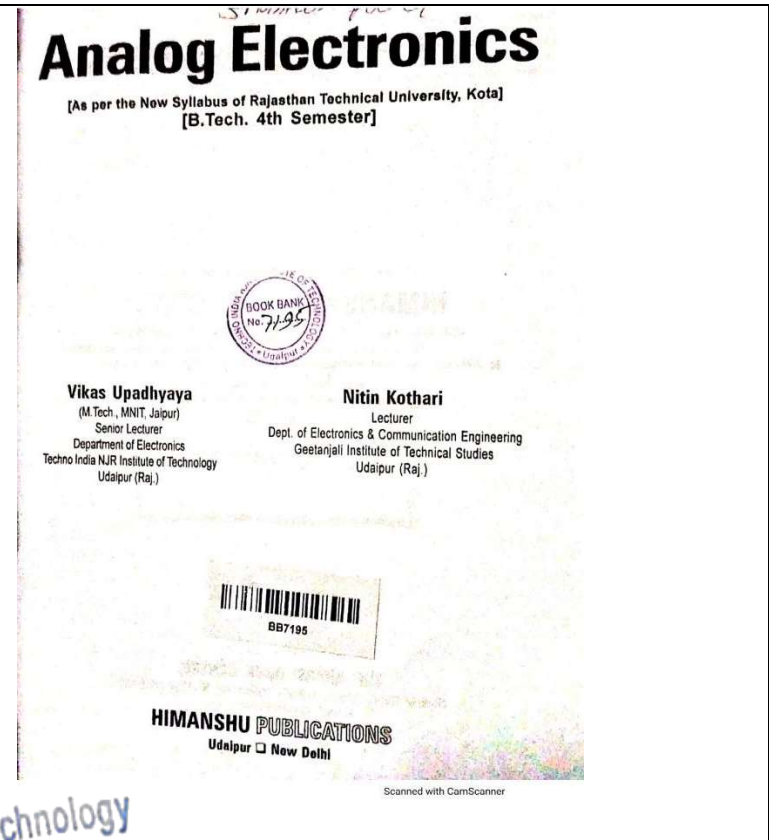
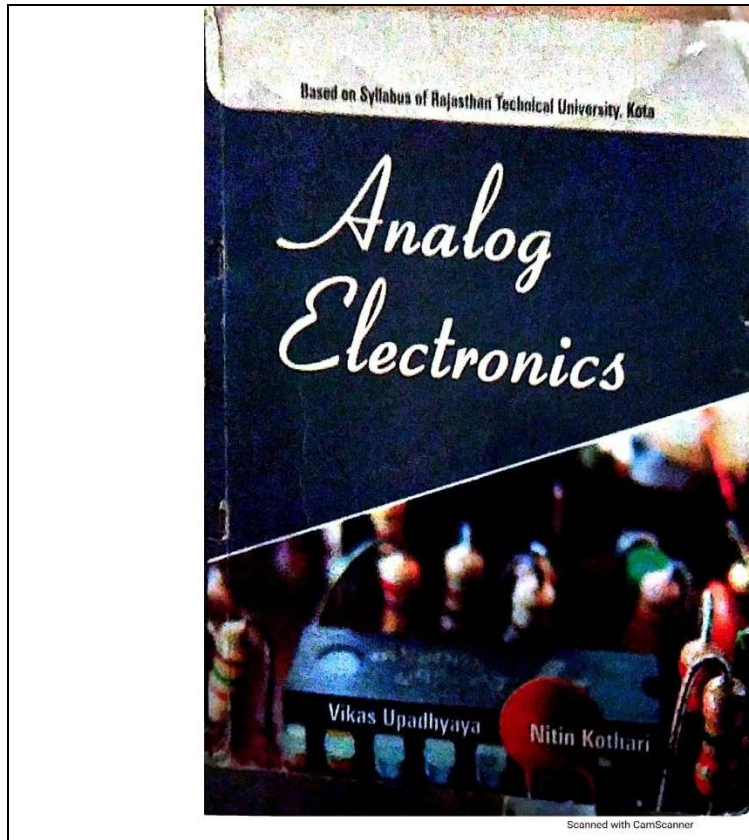
18	Himanshu Pandya		A Review of CFD methodology used for solar devices	Advances in Power Generation from Renewable Energy Sources	2017	ISBN- 978-81-932091-2-7	Yes	Innovative Research Publication
19	Prasun Chakrabarti		Gain and bandwidth modification of microstrip patch antenna using DGS	International Conference on Innovations in Control, Communication & Information Systems	2017	ISBN -978-1-5386-3941-2	No	IEEE Xplore
20	Pradeep Chhawchharia		Techniques for Active Power Filter for Harmonic	2017 IEEE Pulsed Power Conference UK	2017	:978-1-4673-6735-6	Yes	IEEE Xplore
21	Neha Dwivedi, Pradeep Chhawchharia		in High Performance 32-		2017	978-1-5386-2787-7	Yes	IEEE Xplore
22	Prof P Chakrabarti	Intrusion Detection System using Spark's Machine Learning Library			2018	ISBN: 978-6-139-89662-2	No	LAP Singapore
23	Prof Yasmin Ali	Sonochemistry: An Emerging Green Technology			2018	ISBN-13:978-1-315-10274-0	Yes	CRC Press
24	Prof Yasmin Ali	Engineering Chemistry			2018	ISBN978-81-7906-152-7	Yes	Himanshu Publications
25	Prof Yasmin Ali	Practical engineering chemistry			2018	ISBN 978-81-7906-19-4	Yes	Himanshu Publications
26	Prof Yasmin Ali	Engineering Chemistry-I			2018	ISBN 978-81-7906-19-8	Yes	Himanshu Publications
27	Prof Yasmin Ali	Engineering Chemistry-II			2018	ISBN 978-81-7906-21-6	Yes	Himanshu Publications
28	Prof Sangeeta Choudhary	Solid Waste Management			2018	ISBN : 978-81-924029-2-4	Yes	PriyaTech Publications
29	Payal Paliwal		Implementation architecture of Fast FIR Algorithm using Han-Carlson	Inventive Research in Computing Applications	2018	ISBN (e) 978-1-5386-2456-2	Yes	IEEE Xplore
30	Sangeeta Choudhary		modelling of sand erosion and yield of Krishna sand mining zone	Problems of River Sand Mining & its Alternate	2018		Yes	CTAE Press

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31	Pankaj Porwal		Low cost and high quality bricks and paver blocks using only waste materials	Pollution Control of Technologies & Sustainable Development (2019)	2018		Yes	
32	Prof P Chakrabarti	Liver cancer analysis using supervised machine learning classifiers			2019	ISBN: 978-3-330-33591-2	NO	LAP Singapore
33	Sangeeta Choudhary		Development of Rain Water Harvesting System	SSRN-Elsevier 2018-19	2019	<a href="http://dx.doi.org/10.2139/ssrn.3352425">http://dx.doi.org/10.2139/ssrn.3352425</a>	Yes	Elsevier
34	Lokesh Puri, Pankaj Porwal		Construction Materials using Marble Slurry, Waste Plastic and	Internatioanl Civil Engineering Symposium, 2019	2019		Yes	
35	Prof P Chakrabarti	Designing Parallel Graph Coloring Algorithm – A Research Perspective			2020	ISBN: 978-620-2-51991-5	Yes	LAP Singapore
36	Prof Aditya Maheshwari and Prof P Chakrabarti	Beta Thalassemia – A Data Analytics Perspective			2020	ISBN: 978-620-2-66989-4	Yes	LAP Singapore
37	Prof Sangeeta Choudhary	Software Modelling of Sand Replenishment - A Case Study			2020	ISBN: 978-620-2-78855-7	Yes	LAP Singapore
38	Prasun Chakrabarti		Transfer Learning and Deep Convolutional Neural Network	IEEE Industrial and Commercial Power Systems, Europe	2020	ISBN (e) 978-1-7281-7455-6	Yes	IEEE Xplore

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## PREFACE

This book is written specially for the 2<sup>nd</sup> year IV<sup>th</sup> semester of B. Tech. students of Rajasthan Technical University. However the students of other universities will also find it useful, not only for their university exams but also for competitive examinations.

The subject matter of the book itself contained and written in a comprehensive, easy to understand language and lucid style. Sufficient number of solved numerical examples have been included in the text. Generally students worry about the type of paper pattern. To overcome this difficulty some previous years unsolved paper are also given in this book.

We hope that the present book will fulfill the needs of student and teachers and prove helpful in achieving their goals.

In spite of our all efforts it is possible that some mistake might have crept in. The reader are requested to kindly point out the same and also give suggestions for improvement of the book.

We are equally thankful to Himanshu Publications, Udaipur, New Delhi especially Mr. Harish Arya for taking good care of style and design of the book. My thanks are due to Mr. Umesh Kasara also for doing a neat and prompt job of typing the manuscript.

*Authors*

I heartily acknowledge the inspiration and appreciation to all the management staff, the academicians, my relatives and friends. This book would be incomplete without expressing deep sense of gratitude to a special person who means a lot in my life.

*Vikas Upadhyaya*

Many have contributed to the successful preparation of this text. I would like to acknowledge my teachers, friends and loving students. And last but not least to my sister.

*Nitin Kothari*

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## About the Book

- A text book of Analog electronics encompasses the revised syllabus of Rajasthan Technical University, Kota in its totality ranging from preliminary concepts to move advanced and contemporary issues.
- A large Number of illustrative figure and a variety of text as well as solved examples add to the clarity of the text matter.
- Written in very descriptive and lucid manner.
- The book is self explanatory and poses least challenge to conceptualize topics.
- The readers will treasure this book and find it very helpful in developing an understanding of electronic concepts.

### ALSO OF INTEREST

Physics for Engineers (Part-I) – Saraswat & Jain  
Physics for Engineers (Part-II) – Saraswat & Jain  
Practical Engineering Chemistry – Ameta, Yasmin, Bhardwaj, Comber & Ritu Vyas  
Basic Environmental Engineering – Ameta, Durgawat, Mehta, Vyas & Sharma  
Environmental Engineering and Disaster Management – Ameta, Durgawat, Mehta, Vyas & Sharma  
Power Electronics (with MATLAB) – Kumar, Joshi & Bansal  
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Engineering Chemistry (Part-II) – Ameta, Bhardwaj & Yasmin  
Engineering Mechanics – Trilok Gupta  
Basic Physics – Kaira, Saraswat & Singh  
Engineering Physics – Saraswat & Jain  
Basic Mathematics – Purohit & Saraswat  
A Course in Electrical and Electronics Engineering – Gupta, Jain & Paneri

Rs.: 225.00

ISBN: 978-81-7906-215-9



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### द्वैतीय एकीकृत परिपथ

प्रारंभिक शिक्षा मण्डल, जोधपुर (राज.) के तृतीय वर्ष पर्यटन संविस्तर इलेक्ट्रॉनिकी अभियन्ता-विज्ञान विभागा छात्रों के लिए नवीन पाठ्यक्रमानुसार।

- एकीकृत परिपथ संरचना (Integrated Circuit Fabrication)
- ऑपरेशन एम्पलीफायर का परिचय (Introduction of Operational Amplifier)
- ऑपरेशन एम्पलीफायर अनुप्रयोग (Operational Amplifier Application)
- टाइमर आई सी 555 (Timer I.C. 555)
- वोल्टेज रेगुलेशन (Voltage Regulation)

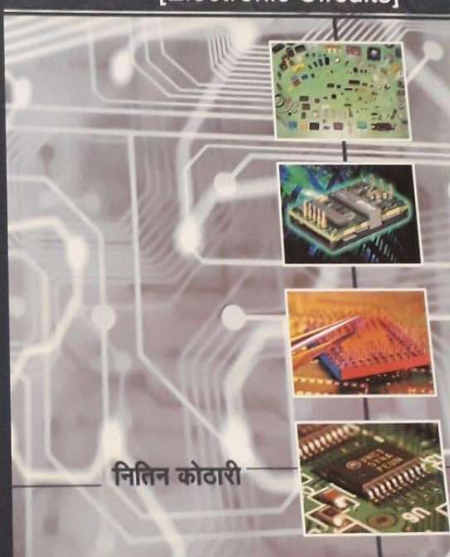
### जीव चिकित्सा उपकरण

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- विश्वियोलोजी परिचय (Introduction to Physiology)
- चिकित्सा इलेक्ट्रोड्स (Medical Electrodes)
- बायोमेट्रिकल रिकॉर्डिंग सिस्टम (Biomedical Recording System)
- इलेक्ट्रो कार्डियोग्राफ (ई सी जी.) (Electro Cardiograph) (E.C.G.)
- पेस मेकर (Pace Makers)
- ब्लड प्रेशर मॉनिटरिंग (Blood Pressure Monitoring)
- डिफीब्रिलेटर (Defibrillators)
- बायोमेट्रिकल क्लिनिकल इन्स्ट्रुमेंट्स (Biomedical Clinical Instruments)
- बायोमेट्रिकल इमेजिंग सिस्टम (Biomedical Imaging System)
- बेड पैशेंट मॉनिटरिंग सिस्टम (Bed Patient Monitoring System)
- इलेक्ट्रिकल सेफ्टी (Electrical Safety)

# इलेक्ट्रॉनिक परिपथ

## [Electronic Circuits]




नितिन कोठारी

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₹: 195.00

ISBN 981-959-270-8

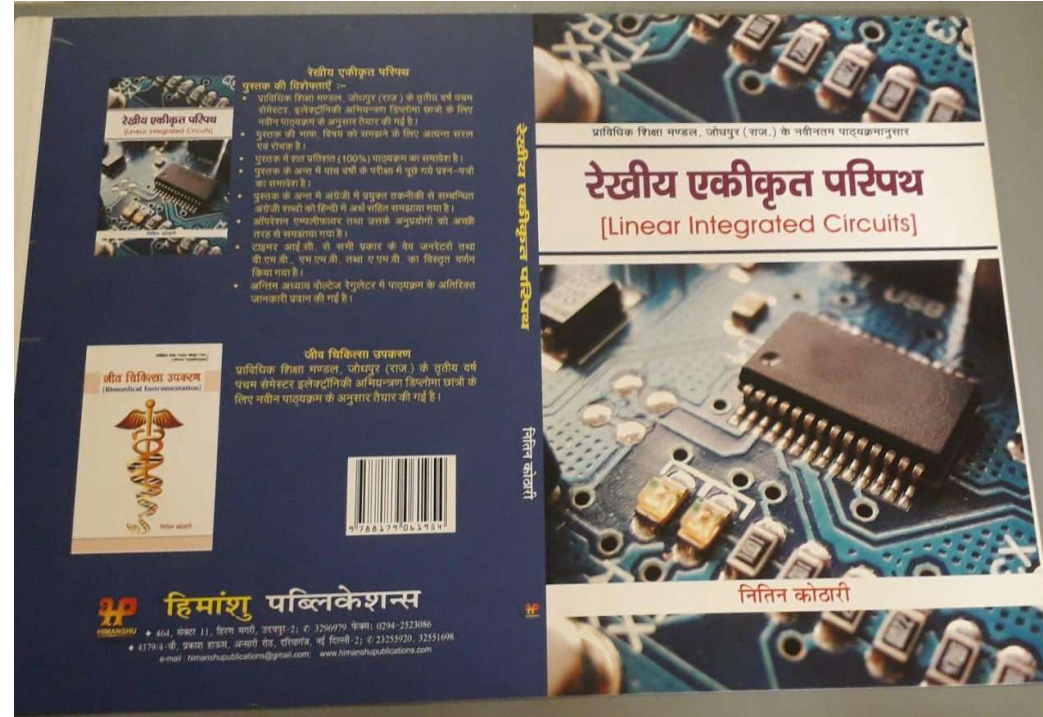


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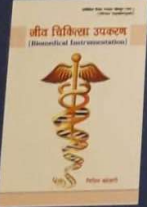
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रेखीय एकीकृत परिपथ  
(Linear Integrated Circuits)

**रेखीय एकीकृत परिपथ**  
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- पुस्तक की भाषा, विषय को समझने के लिए अत्यन्त सरल एवं रोचक है।
- पुस्तक में रंग प्रणालि (100%) पाठ्यक्रम का समावेश है।
- पुस्तक के अन्त में पाठ्य परी के परीक्षा में पूरे गेदे प्रश्न-वाची का समावेश है।
- पुस्तक के अन्त में अंग्रेजी में प्रमुख तकनीकी शी सम्बन्धित अंग्रेजी शब्दों को हिन्दी में अर्थ सहित समझाया गया है।
- ऑपरेशन एम्पलीफायर तथा उसकी अनुप्रयोगों को अच्छी तरह से समझाया गया है।
- टाइमर आई.सी. शी सभी प्रकार के वेव जनरेटरी तथा डी.एन.डी., एन.एन.डी. तथा ए.एन.डी. का विस्तृत वर्णन किया गया है।
- अन्तिम अध्याय सेल्फ टेस्टिंग में पाठ्यक्रम के अतिरिक्त जागरूकता प्रश्न की गई है।



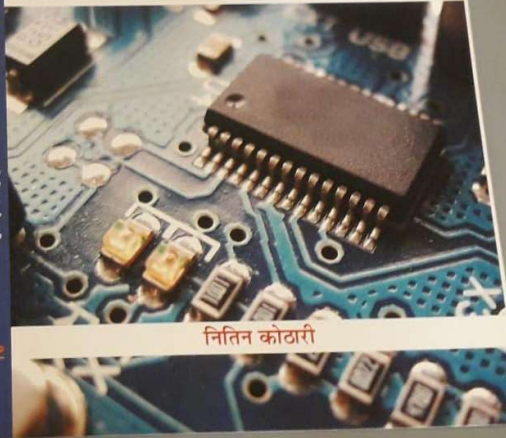
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प्रतिपक्ष शिक्षा मण्डल, जोधपुर (राज.) के नवीनतम पाठ्यक्रमानुसार  
**रेखीय एकीकृत परिपथ**  
[Linear Integrated Circuits]



रेखीय एकीकृत परिपथ

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The work is based on unique concept and definitely facilitate in medical diagnosis. The work is related to normal thought process analysis in context to human nature as well as thought disorders of schizophrenic and psychiatric patients. Thought Analysis of Alcohol-Addicted persons, patients suffering from brain-cancer, persons with high blood pressure has also been carried out from statistical approach and artificial intelligence perspective. Some discovered facts have also been investigated regarding Event Analysis in Dream.



Prasun Chakrabarti  
Tulika Chakrabarti

Prof. Prasun Chakrabarti, Head, Dept. of Comp. Sc. & Engg, Sir Padampat Singhania University (SPSU), Udaipur. He has 132 publications, 13 filed Indian patents. He is a Fellow of IETE. Dr Tulika Chakrabarti, Asst. Prof, Chemistry Dept., SPSU. She has 1 filed US Patent, 2 filed Indian Patents, many publ. in Intl. J. of high impact factor. She is Sr Member ISRDK(UK)

## Investigations towards realizing Human Thought Process Quantification



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The book is a research oriented one and by virtue of reading this book, innovative ideas will be generated in context to security issues of Mobile IP. The performance metrics of Mobile IPv4 and Mobile IPv6 are shown over WLAN for Data packets. There will be ample methods & procedures to enhance the performance metrics of Mobile IP to add new dimensions in the extended work of this Book by introducing two key factors, like (a) Deep Space Network and authenticated (b) Broadcast Services.

Mobile IP



AMRIT Ghosh  
PRASUN Chakrabarti

## Optimization of Security Issues vis-a-vis Mobile IP

Dr. Amrit Ghosh, Head, ECE & EE, Sir Padampat Singhania Univ, Udaipur. Dr Ghosh holds 5 filed Indian Patents and 4 referred Int.J. Publications in his credit. Prof. Pasun Chakrabarti; PhD(Engg), 13 filed Indian Patents, 132 publications, 1 book in his credit. Visiting Prof, NTU Singapore(2015-16), Univ of Mauritius(2015), Waseda Univ(2012); Fellow of IETE, CET(I)



978-3-659-96284-4

Ghosh, Chakrabarti



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The work is a unique piece of research work in context to UNDERGROUND BLAST CONTROL USING SMA DAMPER AND ARTIFICIAL INTELLIGENCE. The readers will be able to generate innovative ideas. The ground motions caused by underground blasts are mainly characterized by large amplitude waves of high frequency behaving like an impulse load of an immensely short duration of time. Thus the Blast Induced Ground Motion (BIGM) is quite significantly different from that of the ground motions due to earthquake. In this book, first a brief overview of the several characteristics of SMA and the nature of ground motion due to underground blast are presented. Then a simulation study on a standard two-storey and three-storey steel frame installed with SMA wires as bracings, taken from literature, is carried out in standard finite element software. Both linear as well as non-linear models of the SMA damper have been considered in this study. The structures are subjected to ground acceleration due to underground blast and the investigations are carried out by varying the distances measured from the charge centre and for different blast intensities represented by different TNT charge weights.



PRASUN Chakrabarti  
ROHAN Majumder

## Underground blast control using SMA Damper and Artificial Intelligence

Prof. Prasan Chakrabarti, PhD (Engg), Professor & Head, Dept. of Computer Sc. & Engg., Sir Padampat Singhania University (SPSU); Honorary Visiting Professor of Waseda Univ., Univ. of Mauritius, Nanyang Technological Univ.; 13 filed Indian Patents, 132 research papers; Fellow of IETE, CET(I). Rohan Majumder, Asst. Prof., Civil Engg., SPSU has 05 publications



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7	Prof P Chakrabarti	Topo Inhibitory Activities of Phytoconstituent & AI based Drug Design		2016	ISBN : 978-3-659-97346- 8	No	LAP Singapore

For Techno India NJR Institute of Technology  
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 Dr. Pankaj Kumar Porwal  
 (Principal)

The book entails some novel facts related to topoisomerase inhibitory activities of phytoconstituents along with artificial intelligence based drug design. It will be helpful for young researchers in the field of natural product chemistry. The authors have cited experimental results with justifications and future research directions. The artificial intelligence part has been carried out on the basis of latest research.

Topo Inhibitory Activities



TULIKA Chakrabarti  
PRASUN Chakrabarti

## Topo Inhibitory Activities of Phytoconstituent & AI based Drug Design

Dr. (Mrs.) Tulika Chakrabarti, Asst Prof. Chemistry, Sir Padampat Singhania Univ.; Natl. Scholar; 1 filed US 2 Indian Patents, 11 reputed Int. J. publ., Member of ISCA. Dr. Prasun Chakrabarti, Dept. of CSE, SPSU; Hony. Visiting Prof. Waseda Univ. Japan, Univ. of Mauritius, Nanyang Tech. Univ. Singapore; 13 filed Indian Patents, 137 papers; Fellow IETE, CET(I)



978-3-659-97346-8

Chakrabarti, Chakrabarti

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Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the proceedings of the conference	Year of publication	ISBN/ISSN number of the proceeding	Whether at the time of publication Affiliating Institution Was same Yes/NO	Name of the publisher
8	Prof P Chakrabarti	Vibration Control of Near Fault Earthquake – CLCD & AI Perspective		2016	ISBN: 978-3-659-95405-4	No	LAP Singapore

For Techno India NJR Institute of Technology  
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In this book, the performance of the CLCD is investigated for SDOF structural systems subjected to fault normal earthquake motion including the fling effect. The sensitivity of the damper performance to the CLCD design parameters is examined in detail. The study indicates that the CLCD is capable of acting as a control device for such earthquake vibrations. The work also entails the role of Statistics and Artificial Intelligence towards realizing the vibration control of near fault earthquake.



Prasun Chakrabarti  
Rohan Majumder

Prasun Chakrabarti, Professor & Head, Dept. of CSE, Sir Padampat Singhania University, 137 Pub. 13 filed Indian Patents, 5 Books, Fellow IETE, CET(I) Hon. Visiting Prof, NTU, Waseda Univ, Univ of Mauritius. Rohan Majumder, Asst Prof, Civil Dept, SPSU. 05 Publ. 2 books, 1 book chapter. Achintya Kumar Roy, Asst Prof Civil Dept, Dr. S. Chandra Sur Degree Engg College, 4 Publ

## Vibration Control of Near Fault Earthquake-CLCD & AI Perspective



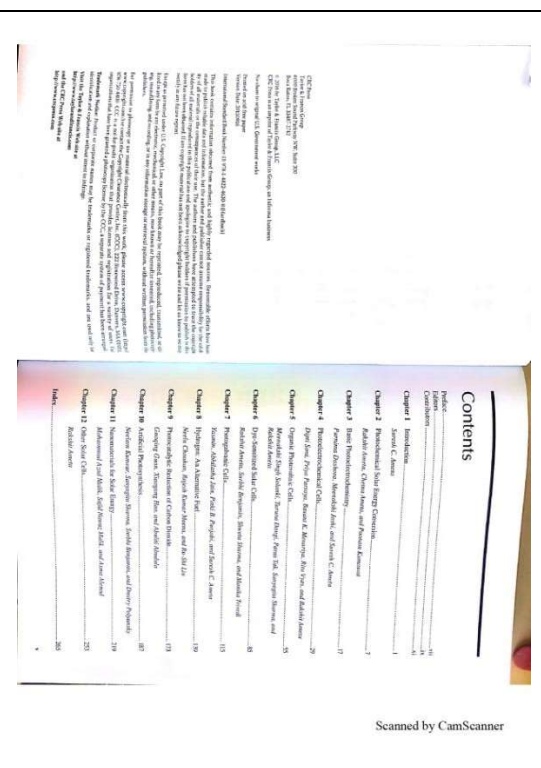
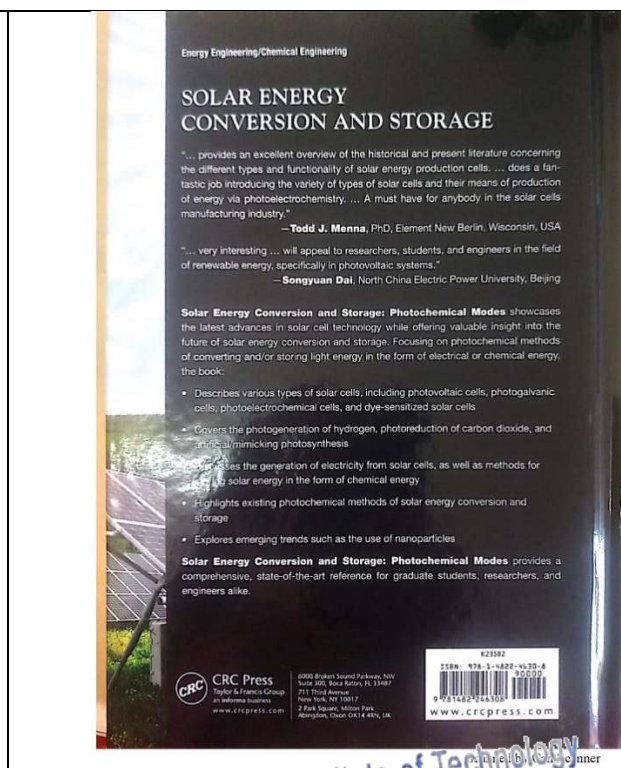
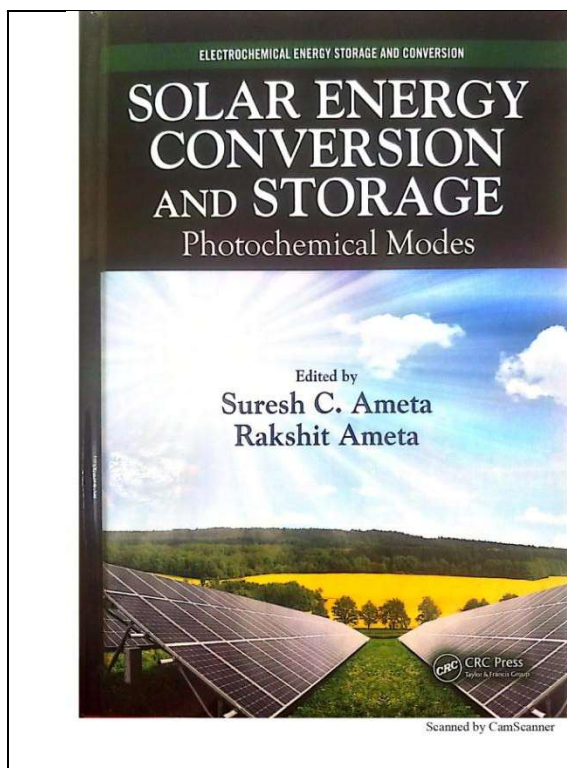
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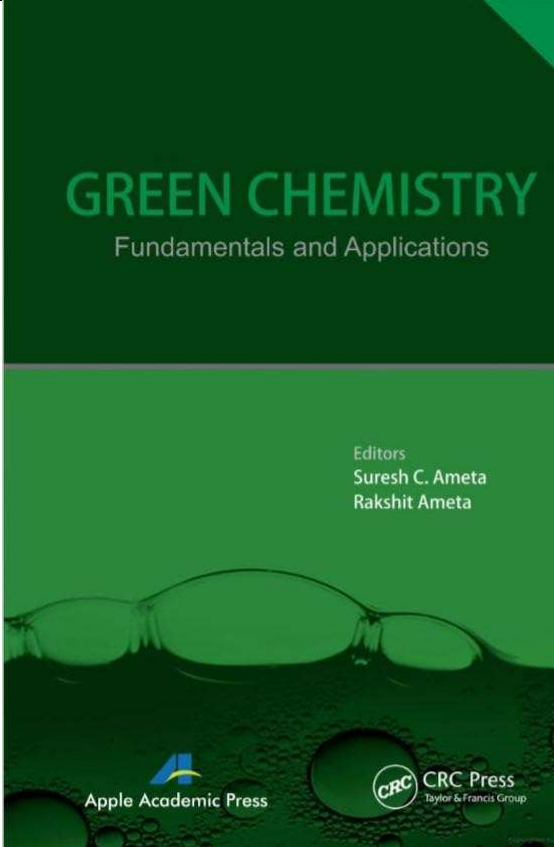


Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the proceedings of the conference	Year of publication	ISBN/ISSN number of the proceeding	Whether at the time of publication Affiliating Institution Was same Yes/NO	Name of the publisher
9	Prof Yasmin Ali	Solar Energy Conversion and Storage: Photochemical Modes		2016	ISBN 9781482246308	Yes	CRC Press



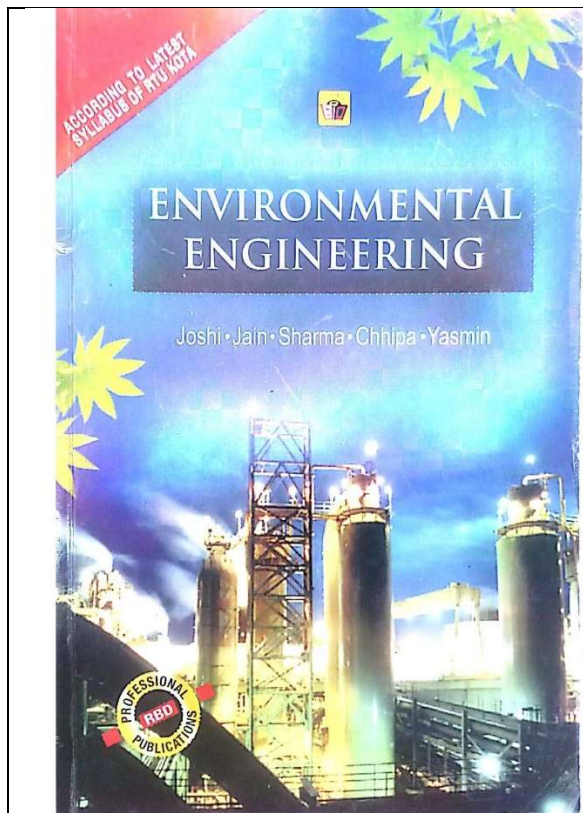
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10	Prof Yasmin Ali	Green Chemistry Fundamentals and Applications	2016	ISBN: 978-1- 926895-43-7	Yes	CRC Press
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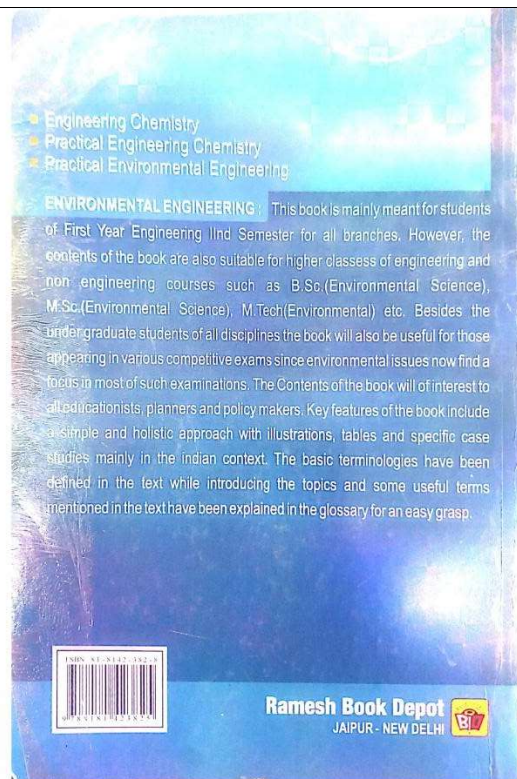
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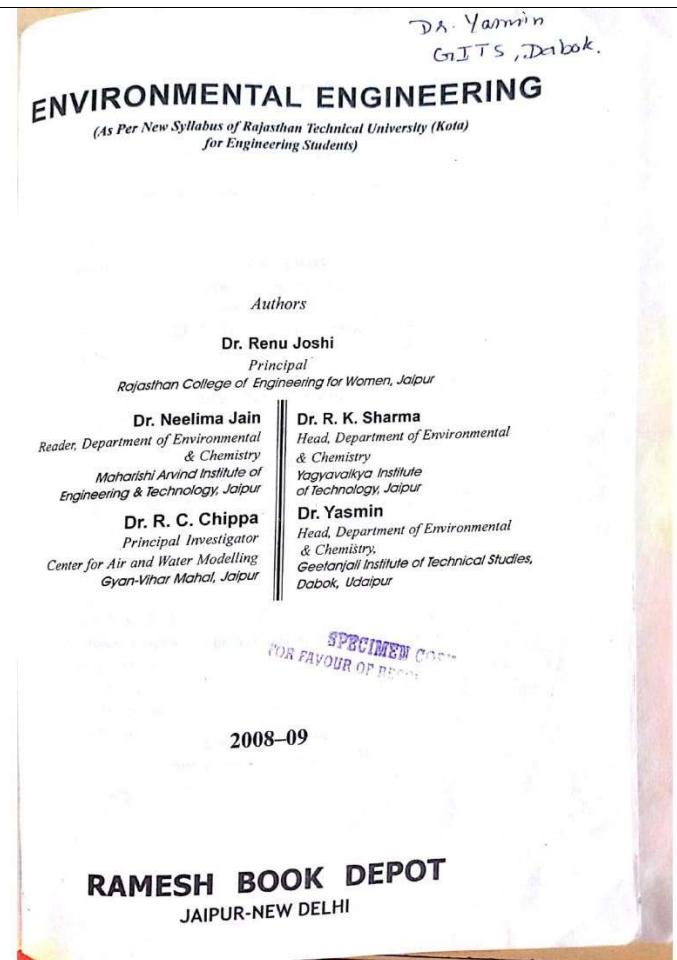
11	Prof Yasmin Ali	Environmental Engineering	2016	ISBN 81-8142-382-8	Yes	Ramesh Book Depot
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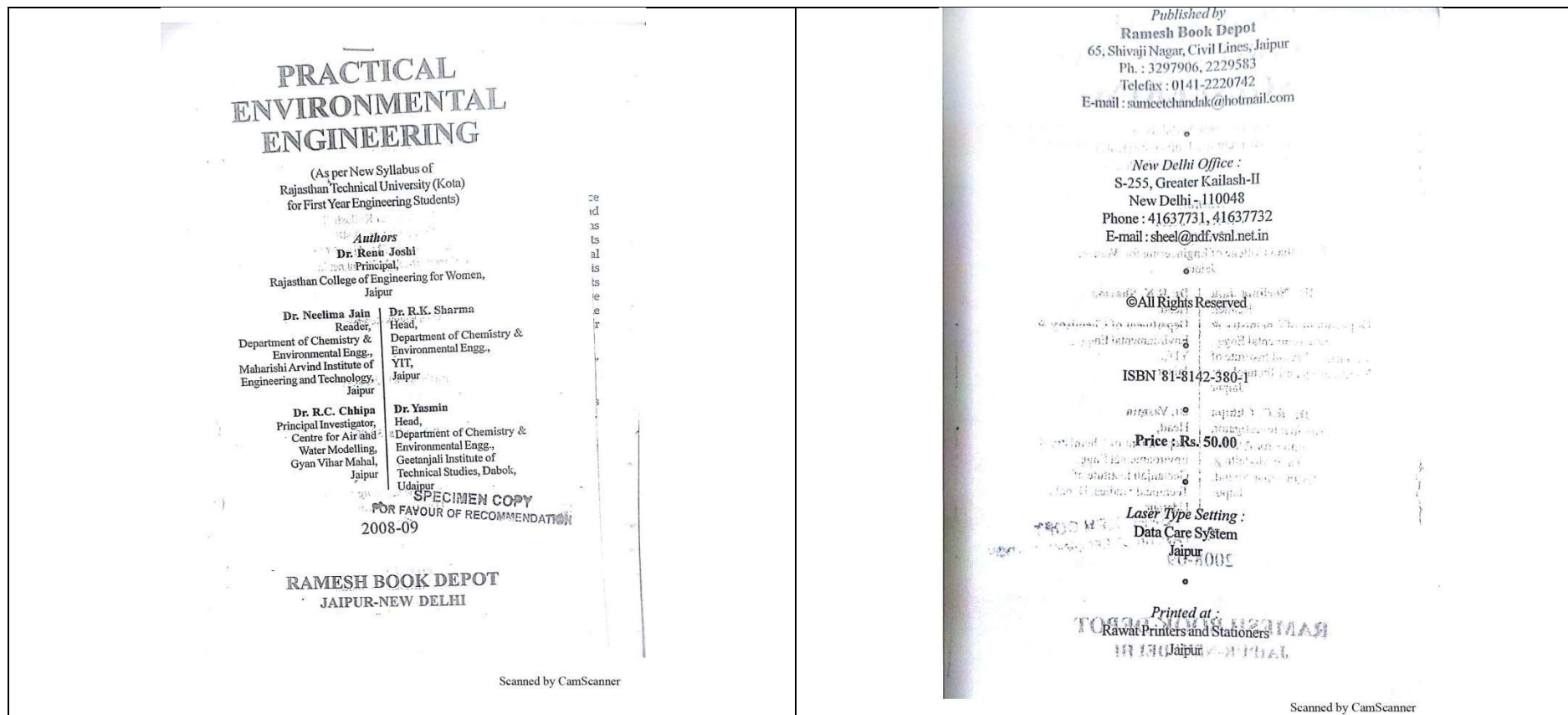


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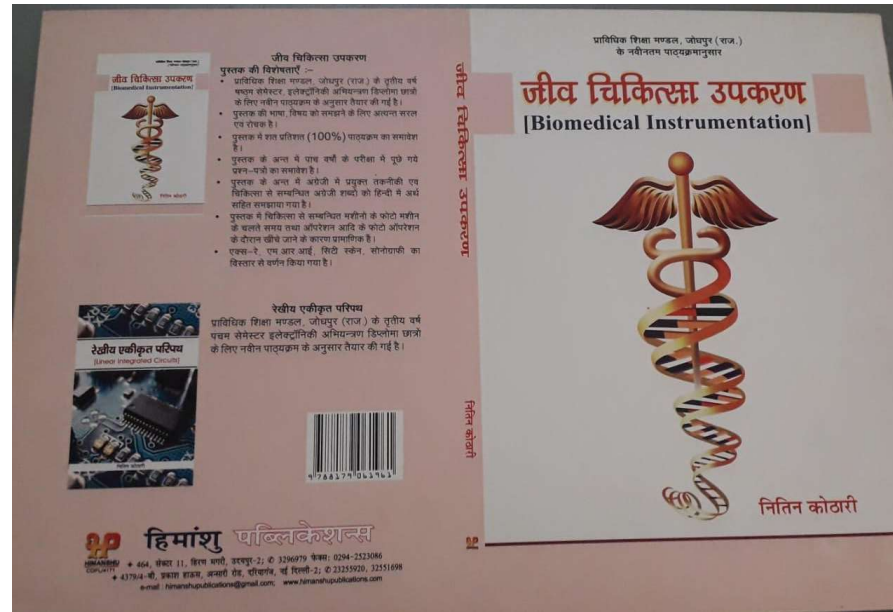


12	Prof Yasmin Ali	Practical Environmental Engineering	2016	ISBN 81-8142-380	Yes	Ramesh Book Depot
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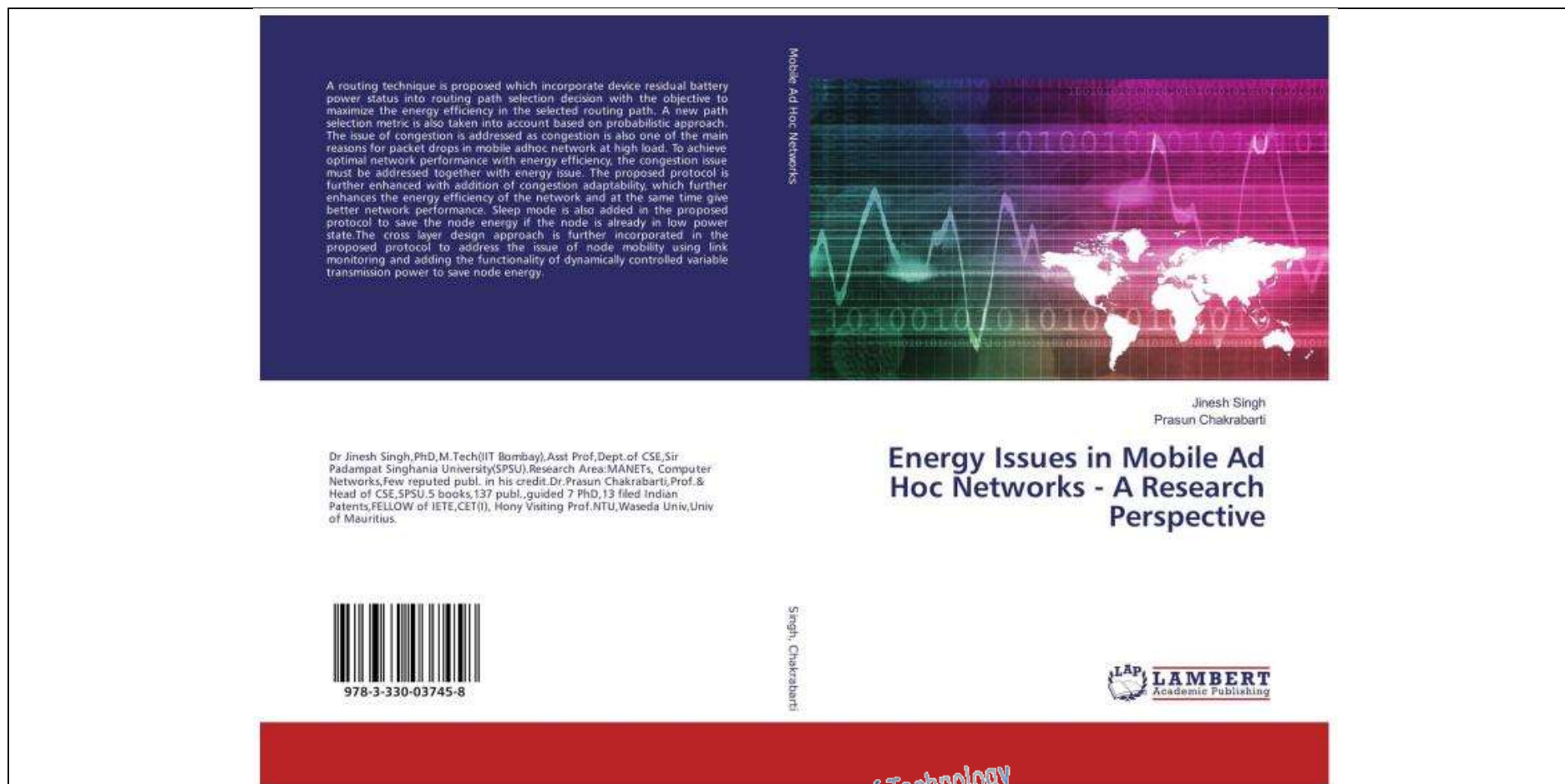
13	Dr Nitin Kothari	Biomedical Instrumentation	2016	ISBN: 9788179061961	Yes	Himanshu Publications
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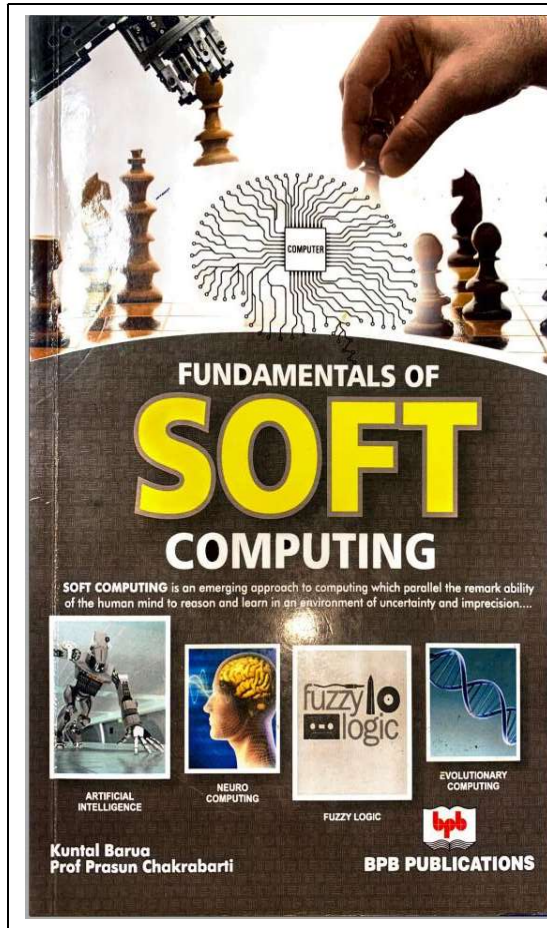


14	Prof P Chakrabarti	Energy Issues in Mobile Ad Hoc Networks – A Research Perspective		2017	ISBN: 978-3- 330-03745-8	No	LAP Singapore
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15	Prof P Chakrabarti	Fundamentals of Soft Computing		2017	ISBN : 978-9-386-55156-6	No	BPB Publications
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This book is going to be the first well organized book for soft computing, including all the three major constituents or aspect of soft computing (neural networks, fuzzy logic and evolutionary computation), and hopefully will be proved beneficial for both kind of people; those striving to gain knowledge and those striving to score grades. The book is comprised of each and every topic of soft computing, along with the practical applications included, as soft computing is a vast field of artificial intelligence with very much exploration to real time problems, especially regarding the quench of decision making and automation in the leading AI industries.

**FUNDAMENTALS OF SOFT COMPUTING**

**KEY FEATURES**

- Comprehensive coverage of various aspects of soft computing concepts.
- Artificial Intelligence, Neuro Computing, Fuzzy Logic Evolutionary Computation.
- Strictly in accordance for the syllabus covered under UG, PG and Doctoral Courses. (B.E./B.Tech./ MCA/ M.Tech./ Research Scholars)
- Simple language, crystal clear approach, straight forward comprehensible presentation.
- The concepts are duly supported by several examples.
- Important question papers for every chapters.

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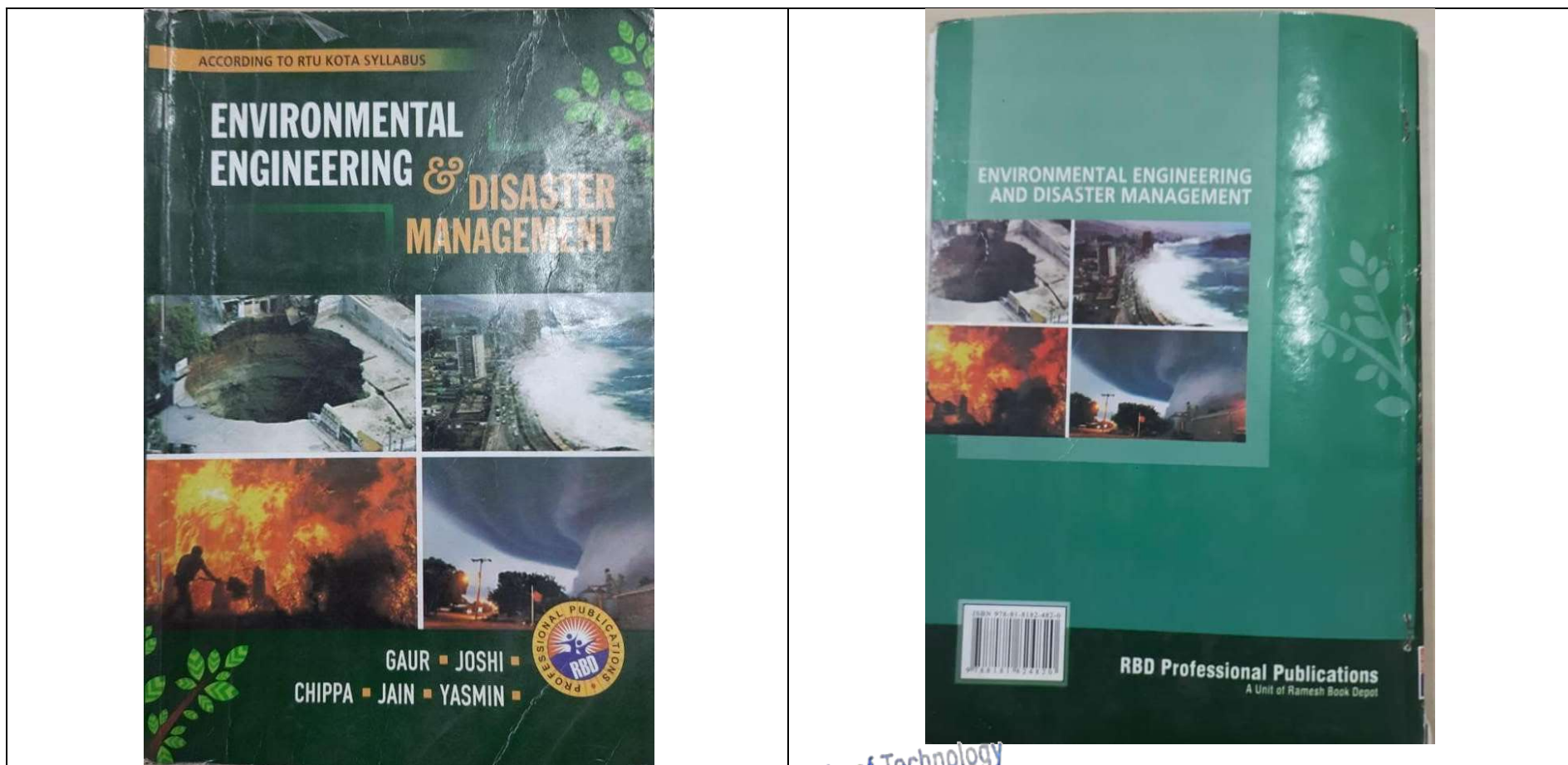
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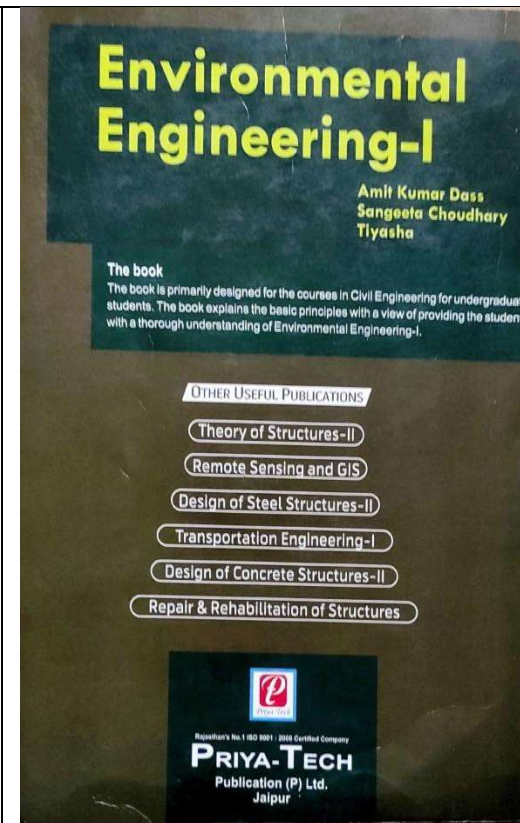
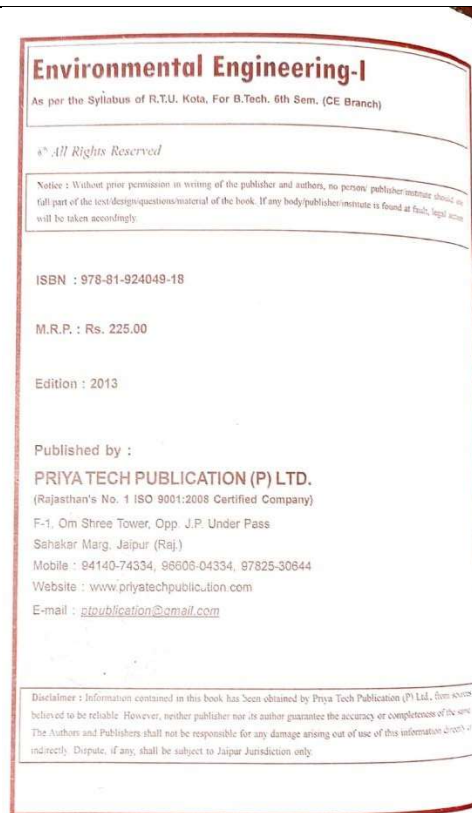
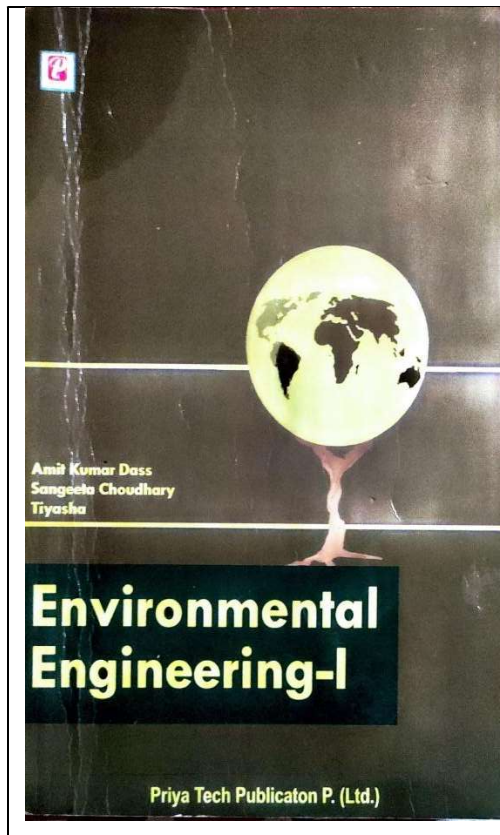
16	Prof Yasmin Ali	Environmental Engineering and disaster management	2017	ISBN 978-81- 7906-21-6	Yes	RBD Professional Publications
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17	Prof Sangeeta Choudhary	Environmental Engineering -I	2017	ISBN : 978-81-924049- 18	Yes	PriyaTech Publications
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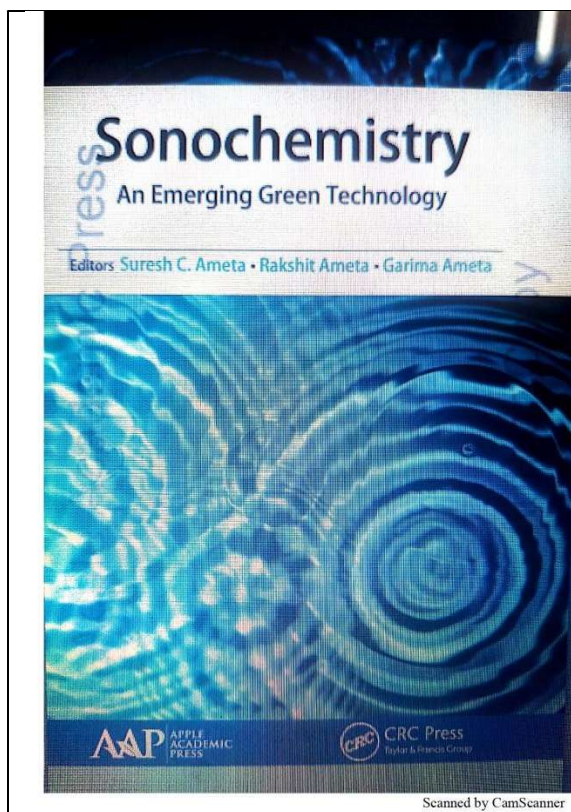
18	Prof P Chakrabarti	Intrusion Detection System using Spark's Machine Learning Library	2018	ISBN: 978-6-139-89662-2	No	LAP Singapore
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19	Prof Yasmin Ali	Sono chemistry: An Emerging Green Technology	2018	ISBN-13:978-1-315-10274-0	Yes	CRC Press
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**CHAPTER 12**

**INDUSTRIAL APPLICATIONS**

ANIL KUMAR CHOHADIA<sup>1</sup>, YASMIN<sup>2</sup>, NEELAM KUNWAR<sup>3</sup>

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E-mail: neelamkunwar13@yahoo.com

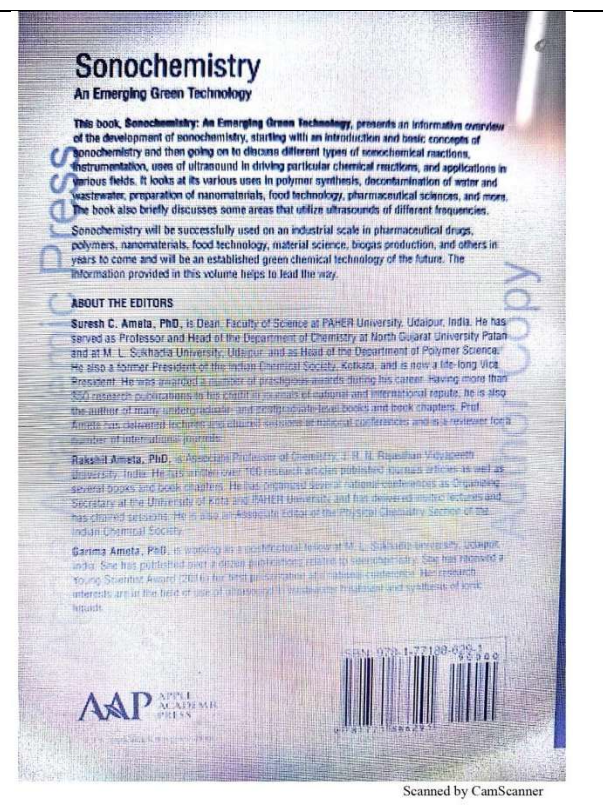
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**12.1 INTRODUCTION**

In recent years, power ultrasonics has been used in various industries such as dyeing, pharma, sugar, leather, and food for a wide range of various purposes such as desizing, oxidizing, cleaning, bleaching, finishing, scouring, descaling, drug chemistry, oxidation, and so on. It is also used in the enzymatic scouring process, since it increases the mass transfer effect. Ultrasonic

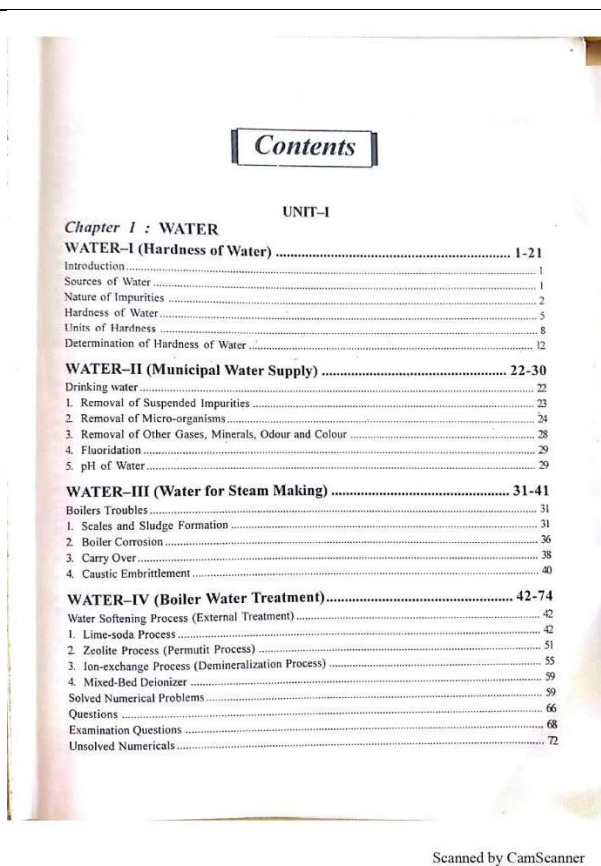
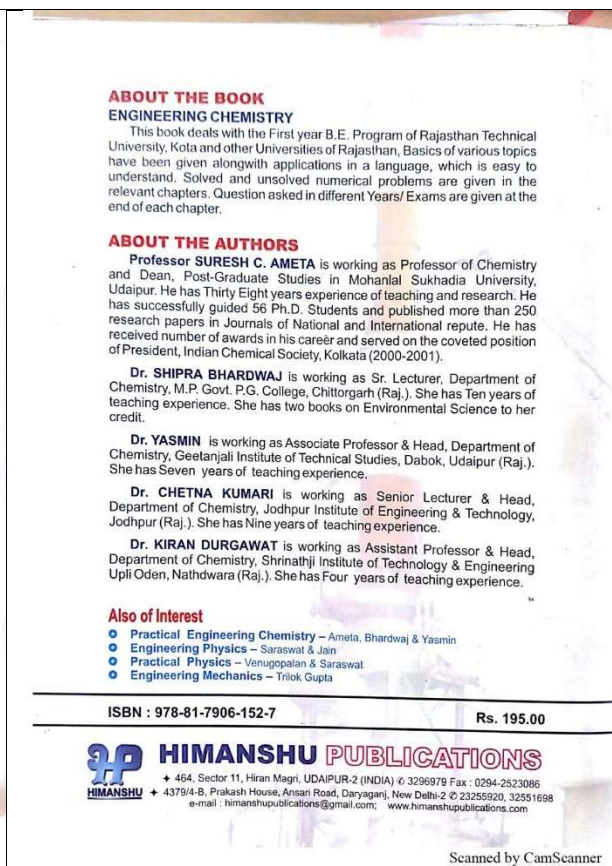
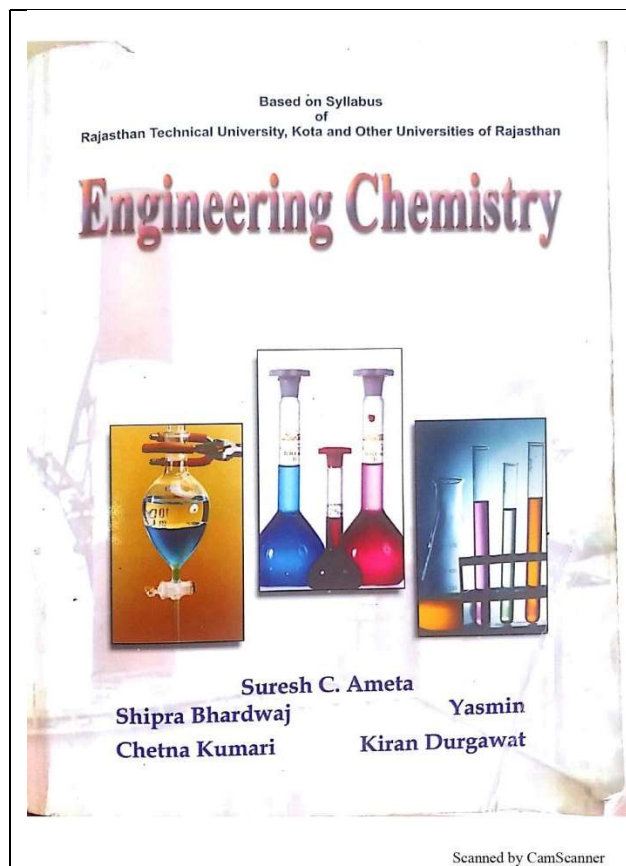
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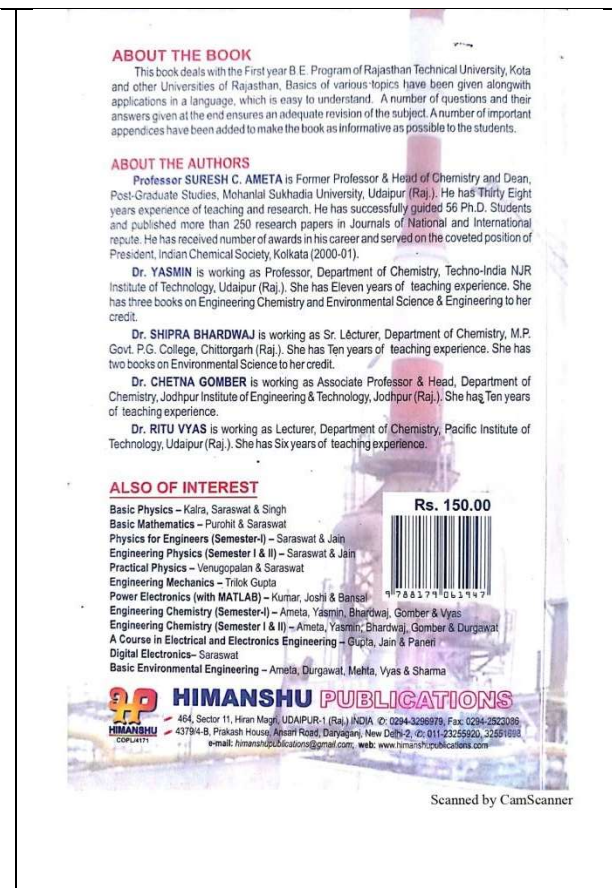
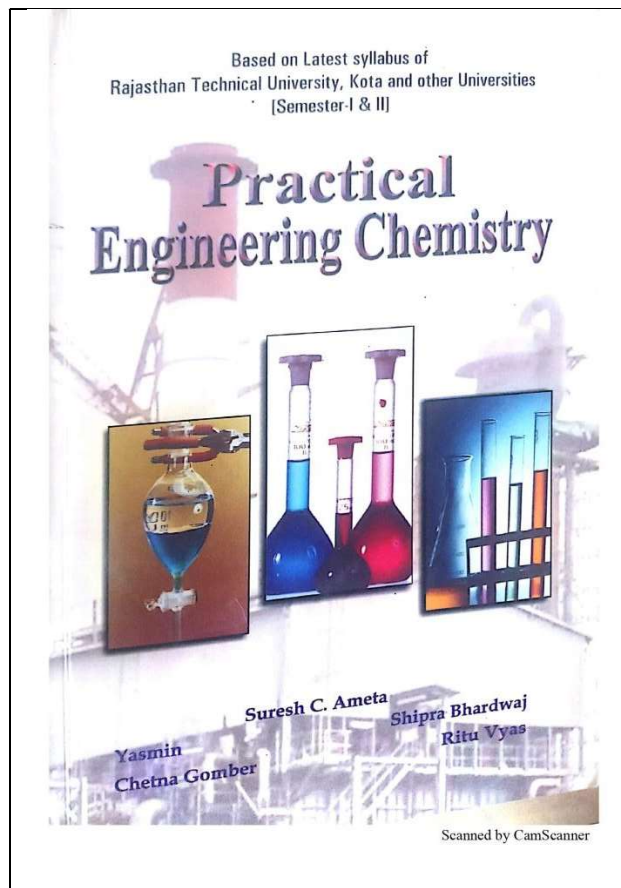
20	Prof Yasmin Ali	Engineering Chemistry	2018	ISBN978-81-7906-152-7	Yes	Himanshu Publications
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21	Prof Yasmin Ali	Practical engineering chemistry	2018	ISBN 978-81-7906-19-4	Yes	Himanshu Publications
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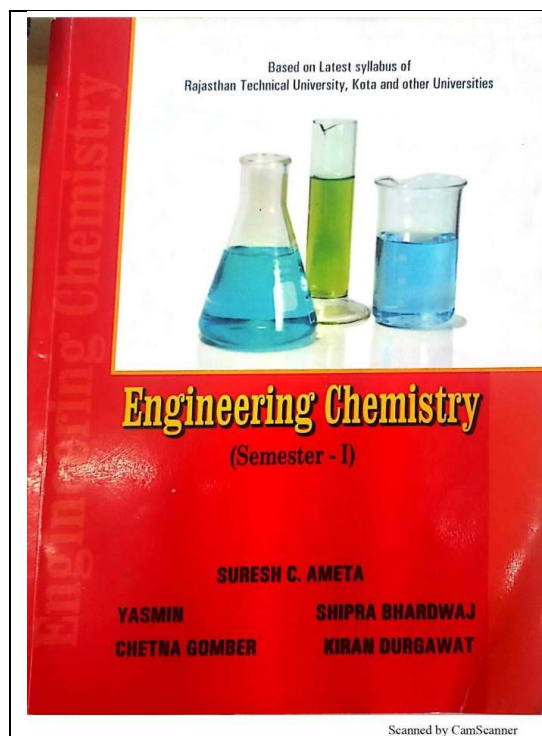
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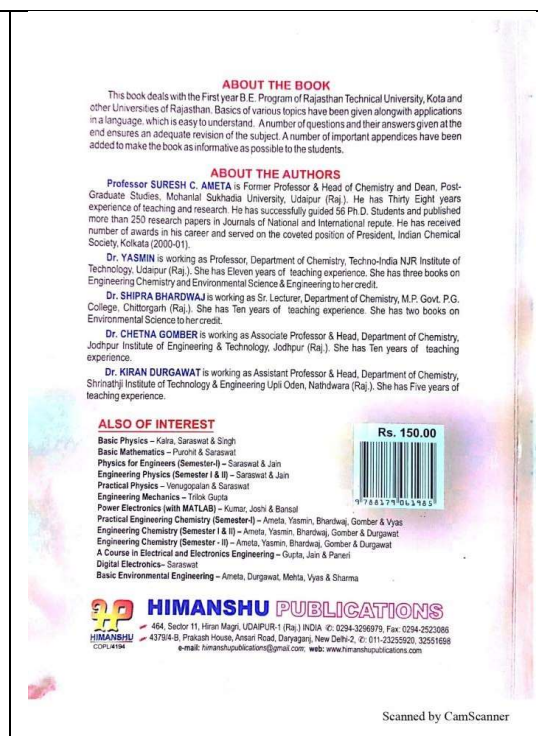
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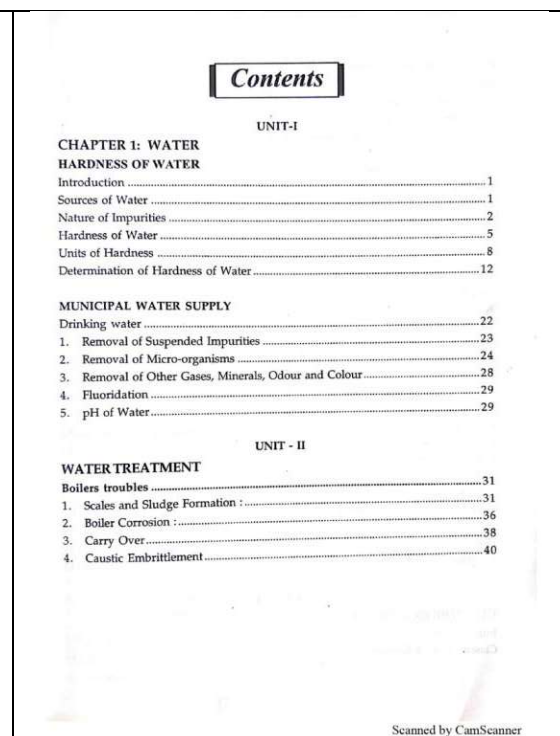
22	Prof Yasmin Ali	Engineering Chemistry-I		2018	ISBN 978-81-7906- 19-8	Yes	Himanshu Publications
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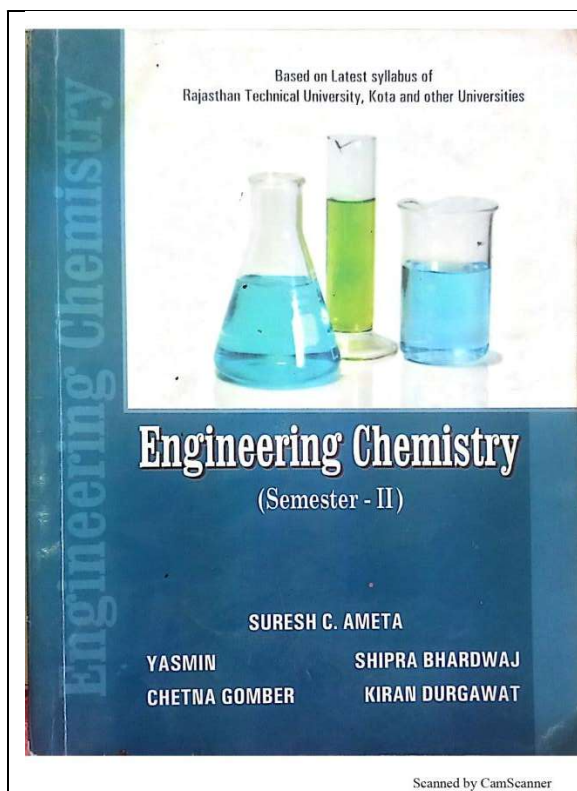


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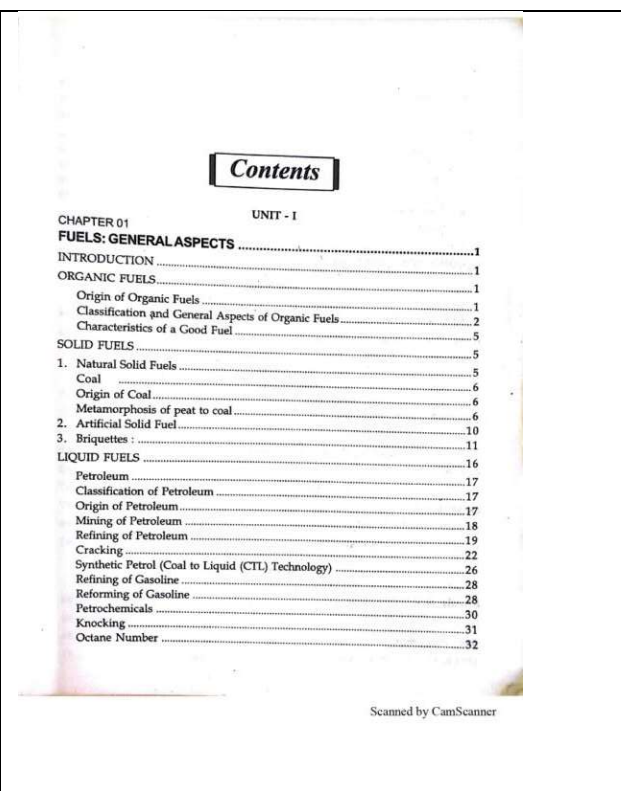
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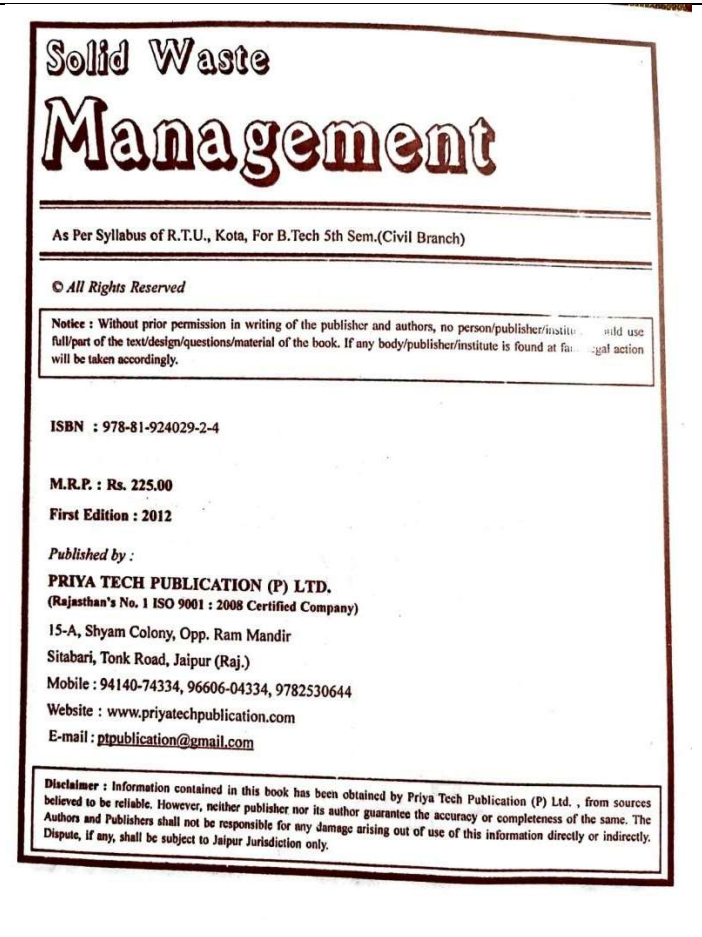
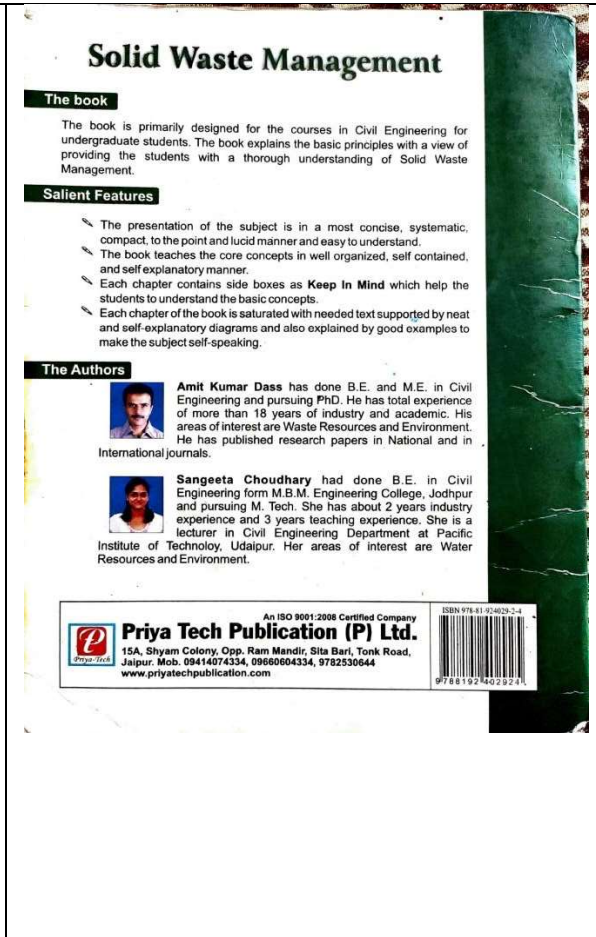
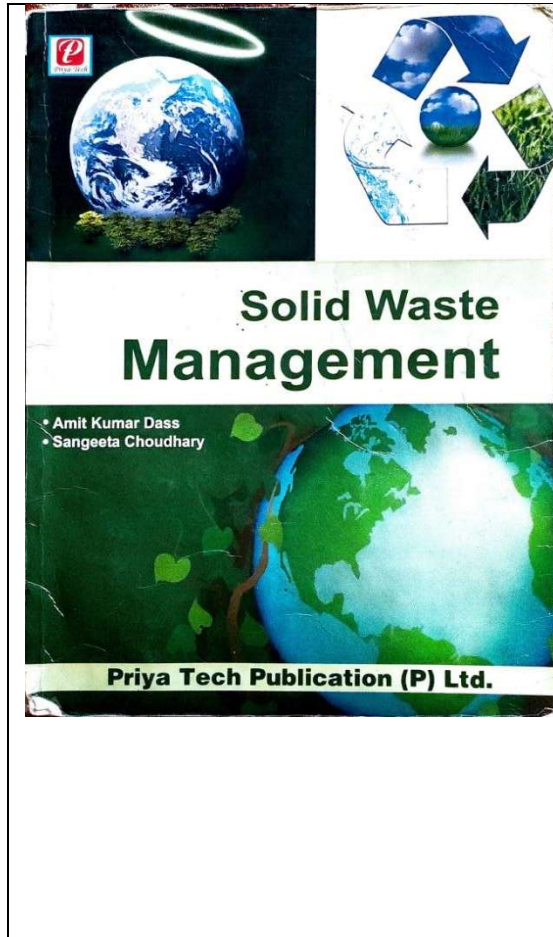


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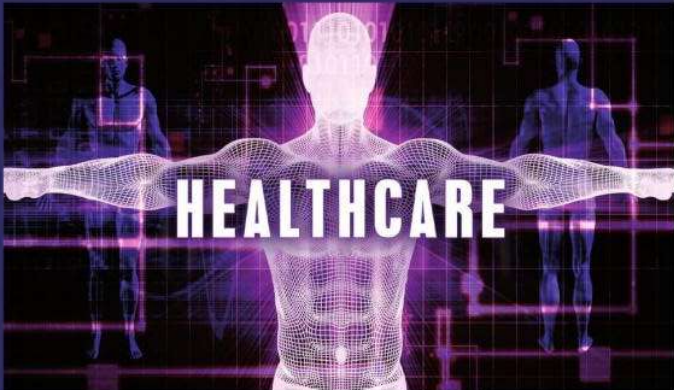
24	Prof Sangeeta Choudhary	Solid Waste Management	2018	ISBN : 978-81- 924029- 2-4	Yes	PriyaTech Publications
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25	Prof P Chakrabarti	Liver cancer analysis using supervised machine learning classifiers	2019	ISBN: 978-3-330-33591-2	NO	LAP Singapore
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The research work has a notable social impact as it facilitates liver cancer diagnosis on the basis of statistical approaches and experimental performance of machine learning classifiers on ILPD(Indian Liver Patient Dataset) and BUPA liver datasets. The work embodies certain discovered facts. The liver cancer diagnosis can be governed by concept learning, artificial neural modeling, geometric distribution and Cobb-Douglas model. The augmentation or expansion of features indicating liver cancer growth can be quantified and realized based on Markov property based state transition. Liver cancer detection can also be analyzed based upon the fundamental principle of information gain. The reliability and mean time to failure of liver cancer testing system can be carried out in the light of parallel system configuration. The factor leading to liver cancer can be sensed on the basis of weighted majority algorithms. The present objective is also to propose a method using supervised machine learning that can help the physician for accurate diagnosis of liver cancer. For experimental analysis two liver cancer datasets and six diverse classifiers in machine learning have been used.



Liver cancer diagnosis

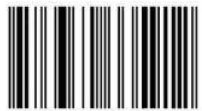


Mr. Manish Tiwari is Assistant Professor, CSE Dept, GITS Udaipur • Prof. P. Chakrabarti is Dean(R&D) and Senior Professor, Dept of CSE, ITM Universe Vadodara • Dr. Tulika Chakrabarti is Assistant Professor (Senior Grade), Dept of Chemistry, Sir Padampat Singhania University, Udaipur.

Manish Tiwari  
Prasun Chakrabarti  
Tulika Chakrabarti


## Liver Cancer Analysis Using Supervised Machine Learning Classifiers

Artificial intelligence in medical diagnosis



978-3-330-33591-2

Tiwari, Chakrabarti, Chakrabarti



For Techno India NJR Institute of Technology

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Dr. Pankaj Kumar Porwal  
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26	Prof P Chakrabarti	Designing Parallel Graph Coloring Algorithm – A Research Perspective	2020	ISBN: 978-620-2-51991-5	Yes	LAP Singapore	
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Graph Coloring Problem is a well know NP-Hard problem. In vertex coloring problem all vertices of any graph must be colored in such a way that no two adjacent vertices colored with same color. In this research work two different algorithms are proposed to solve vertex coloring problems, Edge Cover based Graph Coloring Algorithm (ECGCA) and Tree Data Structure based Graph Coloring Algorithm (TGCA). One parallel version of ECGCA, Parallel Edge Cover based Graph Coloring Algorithm (PEGCA) is also proposed. ECGCA algorithm is based on finding vertex sets using edge cover method. In this research work implementation prospective of algorithm are also covered. Implemented algorithm is tested on various graph instances of DIMACS standards dataset. Algorithm execution time and number of colored required to color graph are compared with some other well know Graph Coloring Algorithms. Variation in time complexity with reference to increasing in number of vertices, number of edges and average degree of graph is also analyzed in this research work. In PEGCA enhanced parallel edge cover based graph coloring algorithm by incorporating parallel computing aspects in algorithm is introduced.



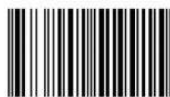
Harish Patidar  
Prasun Chakrabarti



Dr Harish Patidar is working as Associate Professor and Head, Department of Computer Science and Engineering, LNCT Indore. Prof Prasun Chakrabarti is working as Executive Dean (Research) and Institute Distinguished Senior Chair Professor, Techno India NJR Institute of Technology Udaipur.

## Designing Parallel Graph Coloring Algorithm - A Research Perspective

Design and Analysis of Algorithms



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The work entails a novel approach towards realizing distribution of Thalassemia medical records based on Age, Gender, Weight and Haemoglobin Level. It also indicates the rate of growth of thalassemia with corresponding sex bifurcation. The total number of blood transfusions with respect to ferritin, frequency (in months), Height, weight, eco have been analysed based on the graphical representation. The work points out a Statistical Assessment of Health Related Quality of Life in Pediatric Patients with Beta-Thalassaemia. Posterior Distribution Characterization for Pairwise Correlations for Baseline and 3 Months has been carried out based on Log Likelihood Function, Prior Distribution, and Posterior Distribution. In case of posterior distribution for Bayesian correlation, a bell shaped curve is observed. This work highlights an Analysis of Beta-Thalassaemia Patients' prognosis in the light of Radial Basis function and non-parametric test.



Aditya Maheshwari  
Prasun Chakrabarti

## Beta Thalassemia - A Data Analytics Perspective



Mr. Aditya Maheshwari



Aditya Maheshwari is a Research Scholar of Lincoln University College Malaysia and working in the capacity of Principal Investigator, I3 Labs at Techno India NJR Institute of Technology Udaipur. Prof Prasun Chakrabarti is working as Executive Dean (Research and International Linkage) and Institute Distinguished Senior Chair Professor.



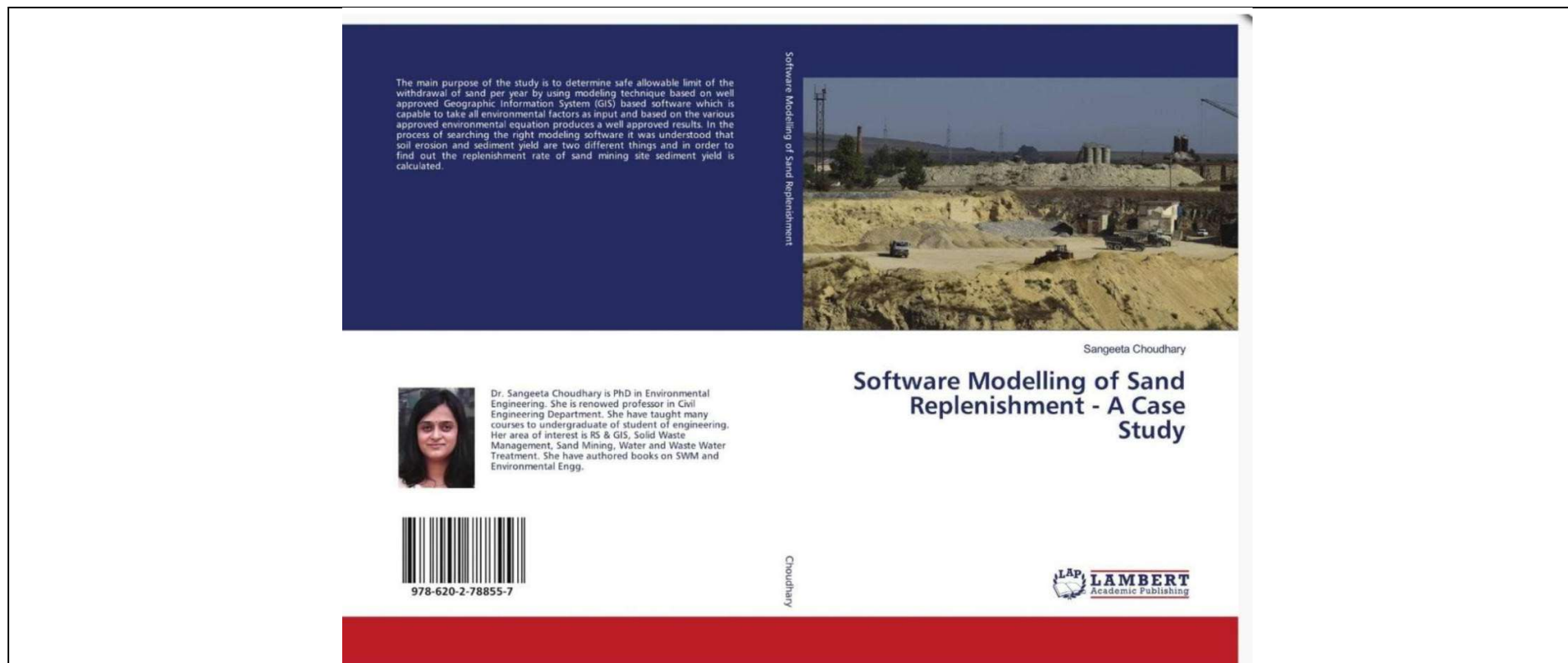
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