

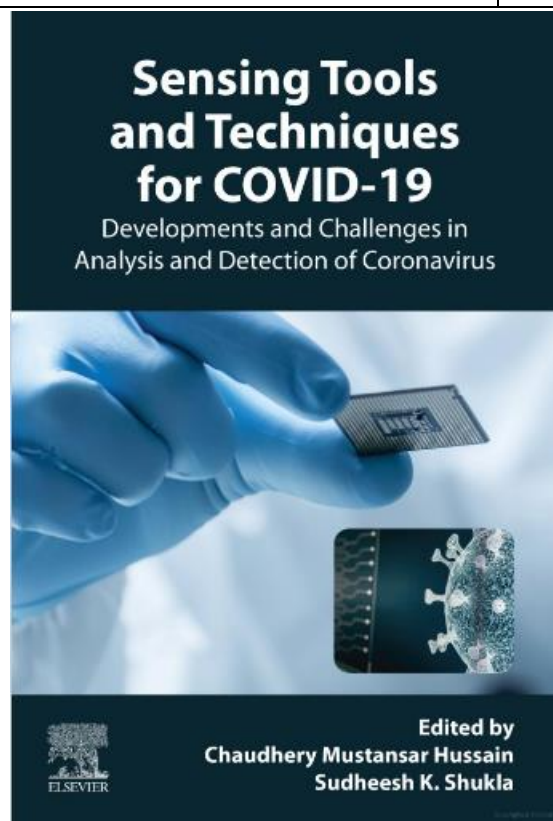


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Collaborative Activity 2021-22

Name of the Department	Chemistry
Name of the Event Organized	Collaborative Activity: Writing a Book Chapter
Title of the Event	Chapter 14: Aptasensors: Surface protein detection in case of Coronavirus diagnosis, pp.295-308, Book title: <i>Sensing Tools and Techniques for COVID-19</i>
Duration of the Collaborative Activity	2021-2022
Name of the Convener	Dr. N. L. Teradal, Assistant Professor of Chemistry
Participating Institutes	Department of Chemistry, Gokhale Centenary College & PG Centre, Ankola, India
Name of the Collaborators	Dr. N. L. Teradal, Assistant Professor of Chemistry Dr. R. D. Tandel, PG Lecturer in Chemistry Dr. V. I. Naik, Lecturer in Chemistry
Total Participants	03
Objectives of the Event	<ul style="list-style-type: none">• To explore surface protein based technology for COVID19 detection• To survey Aptasensors for COVID19 diagnosis
Outcome of the Event	Published a book Chapter and the details shown below



About this edition

ISBN: 9780323902816, 0323902812 Page count: 326
Published: 22 July 2022 Format: ebook
Publisher: Elsevier Science Language: English
Editors: Chaudhery Mustansar Hussain, Sudheesh K. Shukla

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Sensing Tools and Techniques for COVID-19

Developments and Challenges in Analysis and Detection of Coronavirus

2022, Pages 295-308



Chapter 14 - Aptasensor: Surface protein detection in case of coronavirus diagnosis

Nagappa L. Teradal ^{a,*}, Ranjita D. Tandel ^{b,*}, Vishalkumar I. Naik ^b

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<https://doi.org/10.1016/B978-0-323-90280-9.00010-9>

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Chapter 14: Aptasensor: Surface protein detection in case of coronavirus diagnosis, pp.295-308,
Book title: *Sensing Tools and Techniques for COVID-19*

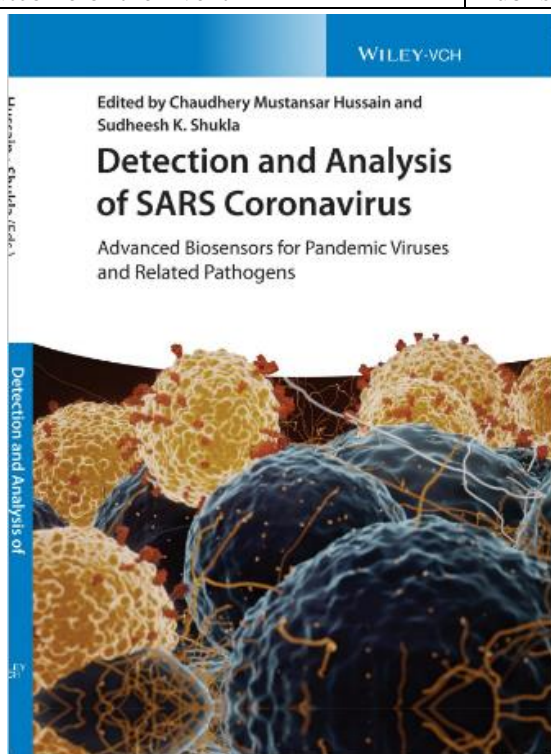


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Collaborative Activity 2021-22

Name of the Department	Chemistry
Name of the Event Organized	Collaborative Activity: Writing a Book Chapter
Title of the Event	Chapter-7: Sensor Development for Coronavirus, pp.105-122, Book title: <i>Detection and Analysis of SARS Coronavirus: Advanced Biosensors for Pandemic Viruses and Related Pathogens</i>
Duration of the Collaborative Activity	2021-2022
Name of the Convener	Dr. N. L. Teradal, Assistant Professor of Chemistry
Participating Institutes	Department of Chemistry, Gokhale Centenary College & PG Centre, Ankola, India Shobhit Institute of Engineering & Technology (Deemed-to-be University), Modipuram, Meerut, 250110 India
Name of the Collaborators	Dr. N. L. Teradal, Assistant Professor of Chemistry Dr. R. D. Tandel, PG Lecturer in Chemistry Dr. S. K. Shukla, Assistant Professor of Chemistry
Total Participants	03
Objectives of the Event	<ul style="list-style-type: none"> To explore detection technologies for COVID19 To survey electrochemical biosensors for COVID19 diagnosis
Outcome of the Event	Published a book Chapter and the details shown below



About this edition

ISBN: 9783527832514, 3527832513 Page count: 304
 Published: 13 July 2021 Format: ebook
 Publisher: Wiley Language: English
 Editors: Chaudhery Mustansar Hussain, Sudheesh K. Shukla

[Create citation](#)
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7

Sensor Development for Coronavirus

Ranjita D. Tandel¹, Nagappa L. Teradal², and Sudheesh K. Shukla³

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²GE Society's, J.S.S. Arts Science and Commerce College, Department of Chemistry, Gokak, Karnataka 591 307, India

³Department of Biomedical Engineering, School of Biological Engineering and Life Science, Shobhit Institute of Engineering & Technology (Deemed-to-be University), Modipuram, Meerut 250110, India

7.1 Introduction

Severe acute respiratory syndrome (SARS) is an infectious disease that was first detected in China and has caused serious infection causing death in a great proportion of patients. The novel coronavirus was first identified in December 2019.

First published: 23 July 2021 | <https://doi.org/10.1002/9783527832521.ch7>

Chapter-7: Sensor Development for Coronavirus, pp.105-122,

Book title: Detection and Analysis of SARS Coronavirus: Advanced Biosensors for Pandemic Viruses and Related Pathogens

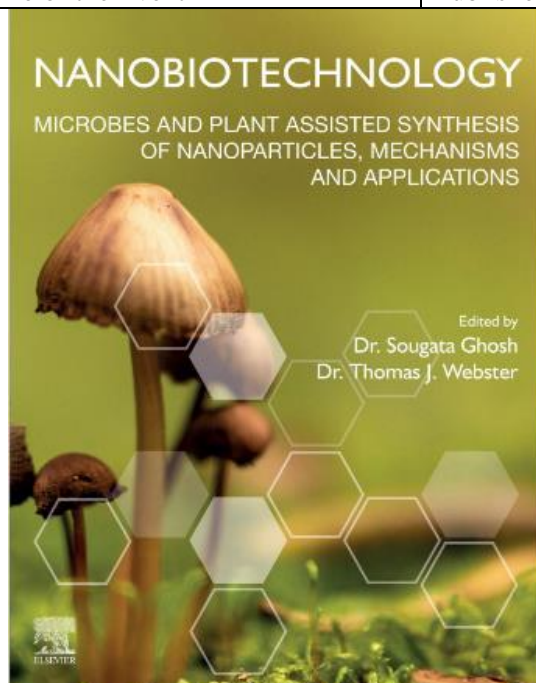


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Collaborative Activity 2021-22

Name of the Department	Chemistry
Name of the Event Organized	Collaborative Activity: Writing a Book Chapter
Title of the Event	Chapter 17: Nanobiotechnology for E-waste management, pp.271-281, Book title: <i>Nanobiotechnology: Microbes and Plant Assisted Synthesis of Nanoparticles, Mechanisms and Applications,</i>
Duration of the Collaborative Activity	2021-2022
Name of the Convener	Dr. N. L. Teradal, Assistant Professor of Chemistry
Participating Institutes	Dr. Prabhakar Kore Basic Science Research Center, KLE Academy of Higher Education and Research, Belagavi, Karnataka, India Multi-Disciplinary Research Unit, Karnataka Institute of Medical Sciences, Hubli, Karnataka, India KLE College of Pharmacy, Belagavi, Karnataka, India
Name of the Collaborators	Dr. N. L. Teradal, Assistant Professor of Chemistry Dr. Suneel Dodamani, Scientist, Dr. Bhaskar Kurangi, Lecturer and Dr. Mahantesh Kurjogi, Scientist
Total Participants	04
Objectives of the Event	<ul style="list-style-type: none">• To review the nanobiotechnological methods for E-waste management• To survey nanobiotechniques for management E-waste
Outcome of the Event	Published a book Chapter and the details shown below



<https://doi.org/10.1016/B978-0-12-822878-4.00017-1>

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About this edition

ISBN: 9780128231159, 0128231157 Page count: 360
Published: 20 May 2021 Format: ebook
Publisher: Elsevier Science Language: English
Editors: Sougata Ghosh, Thomas J. Webster

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Nanobiotechnology

Microbes and Plant Assisted Synthesis of Nanoparticles, Mechanisms and Applications

2021, Pages 271-281



Chapter 17 - Nanobiotechnology for E-waste management

Suneel Dodamani ^a, Bhaskar Kurangi ^{a, d}, Nagappa Teradal ^b, Mahantesh Kurjogi ^{c, d}

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^b GE Society's J.S.S. Arts, Science and Commerce College, Gokak, Karnataka, India

^c Multi-Disciplinary Research Unit, Karnataka Institute of Medical Sciences, Hubli, Karnataka, India

^d KLE College of Pharmacy, Belagavi, Karnataka, India

Chapter 17: Nanobiotechnology for E-waste management, pp.271-281,

Book title: Nanobiotechnology: Microbes and Plant Assisted Synthesis of Nanoparticles, Mechanisms and Applications

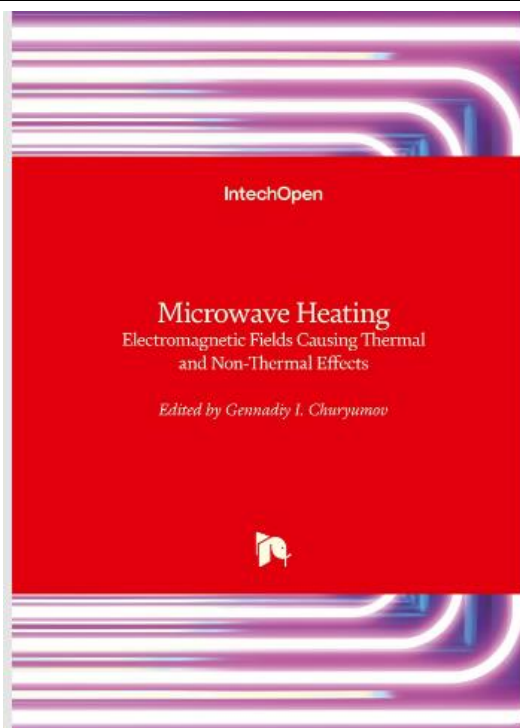


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Collaborative Activity 2020-21

Name of the Department	Chemistry
Name of the Event Organized	Collaborative Activity: Writing a Book Chapter
Title of the Event	Chapter 3: Microwave synthesized functional dyes, pp.271-281, Book title: <i>Microwave Heating: Electromagnetic fields causing thermal and non-thermal effects</i>
Duration of the Collaborative Activity	2020-2021
Name of the Convener	Dr. P.P.Kattimani, Assistant Professor of Chemistry
Participating Institutes	Department of Chemistry, Karnatak University, Dharwad Department of Chemistry, GFGC, Paschapur Department of Chemistry and Food Science, Yuvaraj College, University of Mysore, Mysuru
Name of the Collaborators	Dr. P. P. Kattimani, Assistant Professor of Chemistry Dr. Sheetal Marganokop, Assistant Professor of Chemistry Dr. Sudha Belgur Satyanarayan, Assistant Professor of Chemistry Dr. Ravindra Kamble Professor of Chemistry
Total Participants	04
Objectives of the Event	Applications of microwave heating
Outcome of the Event	Published a book Chapter and the details shown below



Microwave Heating - Electromagnetic Fields Causing Thermal and Non-Thermal Effects
<http://dx.doi.org/10.5772/intechopen.87921>
Edited by Gennadiy I. Churyumov

Microwave Heating - Electromagnetic Fields Causing Thermal and Non-Thermal Effects
Edited by Gennadiy I. Churyumov
p. cm.
Print ISBN 978-1-83968-226-1
Online ISBN 978-1-83968-227-8
eBook (PDF) ISBN 978-1-83968-228-5

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Chapter 3

Microwave Synthesized Functional Dyes

Sheetal Marganokop, Pramod Kattimani,
Sudha Belgur Satyanarayana and Ravindra Kamble

Abstract

Microwave chemistry involves the application of microwave radiation to chemical reactions and has played an important role in organic synthesis. Functional dyes are those with hi-tech applications and this chapter attempts to provide an overview of the recent developments in microwave-assisted synthesis of functional dyes. Emphasis has been paid to the microwave-assisted synthesis of dye molecules which are useful in hi-tech applications such as optoelectronics (dye-sensitized solar cells), photochromic materials, liquid crystal displays, newer emissive displays (organic-light emitting devices), electronic materials (organic semiconductors), imaging technologies (electrophotography viz., photocopying and laser printing), biomedical applications (fluorescent sensors and anticancer



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Collaborative Activity 2020-21

Name of the Department	Chemistry
Name of the Event Organized	Collaborative Activity: Research Project
Title of the Event	Determination of Piperazine Using Gold Electrode in Human Biological Samples
Duration of the Collaborative Activity	2020-2021
Name of the Convener	Dr. N. L. Teradal, Assistant Professor of Chemistry
Participating Institutes	PG Department of Chemistry, Karnatak University, Dharwad Department of Chemistry, PG Centre, J. S. S. Arts, Science and Commerce College, Gokak
Name of the Collaborators	Dr. N. L. Teradal, Assistant Professor of Chemistry Dr. Vijay P. Pattar, Lecturer in Chemistry Dr. S. T. Nandibewoor, Rtd. Chairman, Department of Chemistry
Total Participants	03
Objectives of the Event	To develop new alternative analytical method for the determination of piperazine
Outcome of the Event	Published a book Chapter and the details shown below

Nanomedicine & Nanotechnology Open Access (NNOA)

ISSN : 2574-187X
IF : 1.5682



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Square Wave Voltammetric Determination of Piperazine Using Gold Electrode in Human Biological Samples

Vijay P Pattar^{1,2}, Nagappa L Teradal² and Sharanappa T Nandibewoor^{1*}

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²GE Society's J. S. S. Arts, Science and Commerce College, India

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Research Article

Volume 5 Issue 3

Received Date: September 08, 2020

Published Date: October 06, 2020

DOI: 10.23880/nnoa-16000199

Abstract

From voltammetric experiments, the electrochemical behavior of piperazine (PPZ) was determined at gold electrode (GE) in pH 7, 0.2 M phosphate buffer solution. It is shown that in the presence of PPZ the electrochemical oxidation at a GE was irreversible process. Based on the experimental results suitable mechanism was proposed. The electrooxidation of PPZ showed diffusion controlled. Under optimized conditions, linearity between the peak current and PPZ concentration was observed in the range of 1.0×10^{-6} – 1.7×10^{-5} M and LOD was found to be 4.49×10^{-8} M. Further, the sensor was used for the assay of PPZ in biological samples.