



Mula Education Society's

ARTS, COMMERCE AND SCIENCE COLLEGE, SONAI

Tal. Newasa, Dist- Ahmednagar – 414105



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Affiliated to Savitribai Phule Pune University, Pune (I.D.PU/AN/ASC/031/1989)

NAAC Re-accredited with 'A' Grade, DBT Star College Scheme, ISO 9001: 2015 Certified, AISHE Code – C-42096

Research Collaborative Activity 2017-18



Shri Chhatrapati Shivaji Shikshan Prasarak Mandal's

SHIVAJI ARTS, COMMERCE AND SCIENCE COLLEGE,

KANNAD-431103, DIST.AURANGABAD (M.S.), INDIA.

NAAC Re-Accredited B++ Grade with CGPA (2.92)

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AGREEMENT OF COLLABORATION

The present document of collaboration is being signed between **Shivjai Arts, Commerce and Science College, Kannad, Aurangabad** and **Arts, Commerce and Science College, Sonai, Tal-Newasa, Dist-Ahmednagar-414105, (MS), India** for the following proposed research collaboration in the subject of **Chemistry**.

The Aims and Objectives of the Collaboration:

1. To undertake collaborative research activities leading to research analysis.
2. To work in collaboration leading to research findings and subsequent publication.
3. To have exchange and dissemination of research ideas.
4. To work jointly on particular research areas for research projects, etc.

It is hereby expressed that the following are the terms and conditions of the present collaborative work and shall be followed by both the parties with the mutual understanding.

TERMS AND CONDITIONS:

- There shall be equal contribution by both faculties involved in the research activities.
- Research facilities available at the respective institutions will be utilized for the research work.
- The research outcomes will be published by the consent of people involved in the research activities.

The present collaboration is intended for the next five years from
15/06/2017


Signature

Head/Principal
Principal

Shivaji Arts, Commerce & Science,
College kannad, Dist. Aurangabad


Signature

Head/Principal

PRINCIPAL

Arts, Commerce & Science
College, Sonai, Tal. Newasa,
Dist. Ahmednagar-414 105



Shri Chhatrapati Shivaji Shikshan Mandal's Prasarak

**SHIVAJI ARTS, COMMERCE AND SCIENCE COLLEGE,
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TO WHOM IT MAY CONCERN

This is to certify that there have been collaborative research activities between faculty members of **Shivaji Arts, Commerce and Science College, Kannad, Aurangabad** and **Arts, Commerce and Science College, Sonai, Tal-Newasa, Dist-Ahemednagarr-414105,(MS),India**. The details of the collaborative research activities carried out are as follow:

Collaborators:

1. **Dr. B.K.Magar**, Associate Prof. of Chemistry, Shivaji College, Kannad, Aurangabad
2. **V.M.Pawar**, Assistant Professor of Chemistry, Arts, Commerce and Science College, Sonai, Tal-Newasa, Dist-Ahemednagarr-414105, (MS), India.

It is hence certified that there have been successful collaboration in term of research and resulted in the research paper publication during 2017-2018.

No. of Publication : 01

Journal Name : International Journal of Chemical and Physical Sciences.ISSN:2319-6602.


Signature

Head/Principal
Principal

Shivaji Arts, Commerce & Science,
College Kannad, Dist. Aurangabad

Enclosed: Research Paper first page.


Signature

Head/Principal
PRINCIPAL

Arts, Commerce & Science
College, Sonai, Tal.Newasa,
Dist.Ahmednagar-414 105



॥ श्री गुरुभ्यो नमः ॥

Shri Chhatrapati Shivaji Shikshan Prasarak Mandal's
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RESEARCH COLLABORATIVE ACTIVITY (2017-2018)

Name of the teacher : Dr. B.K.Magar
Department : Chemistry
Name of the institution : Shivaji Arts, Commerce and Science
College, Kannad, Aurangabad
Type of Collaborative Activity : Research Publication (Research Paper)

Name of the First Collaborator : V.M.Pawar
Department : Chemistry
Name of the Institution : Department of Chemistry, Arts,
Commerce and Science College,
Sonai, Tal-Newasa, Dist-Ahemednagarr-
414105,(MS),India

Status : Completed
Output/Publication : Published research paper in
International Journal of Chemical and
Physical Sciences .ISSN:2319-6602.

COLLABORATION BRIEF DETAILS:

Sr. No.	Title of the Collaborative Activity	Name of the Collaborating Agency With details	Name of the Participant/s	Year of Collaboration
01	Research Paper: A Review On 1,2,4- Thiadiazole and its Derivatives; Synthetic Methods and Biological Importance	Department of Chemistry Arts, Commerce and Science College, Sonai, Tal- Newasa, Dist- Ahmednagar- 414105, (MS), India	V.M.Pawar.	2017-2018

Name and Sign of the Teacher


Dr. B.K. Magar

Name and Sign of the Collaborator


V.M. Pawar

A Review On 1, 3, 4-Thiadiazole and its Derivatives: Synthetic Methods and Biological Importance

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Abstract

The present review highlights the synthesis of 1, 3, 4 thiadiazole and its derivatives possessing important biological activities. Heterocyclic nucleus 1, 3, 4-thiadiazole constitutes an important class of compounds for new drug development. During the recent years there has been intense investigation of different classes of thiadiazole compounds, many of which possess extensive biological activities. 1,3,4 thiadiazole has been studied extensively because of its wide variety of biological activities such as antimicrobial, anti-inflammatory, analgesic, anti-cancer, anti-tubercular and diuretic etc. However, the wide range of therapeutic values of 1, 3, 4 thiadiazole has encouraged us to do advance research on it.

Keywords: 1, 3, 4-Thiadiazole, Biological Activities, Heterocyclic Compounds, Synthesis, Anti-microbial, Anti-inflammatory, Anti-tubercular, Anti-cancer.

1. INTRODUCTION:

Heterocyclic compounds are cyclic compound with the ring containing carbon and other element, the component being oxygen, nitrogen and sulphur [1]. Numerous heterocyclic compounds such as thiazoles, thiadiazoles, indoles, oxadiazoles, benzisoxazoles and pyrroles have been successfully used as antibacterial[2], anticancer[3], antidepressant, analgesic[4], antihypertensive[5], antitubercular[6], anti-inflammatory[7], anticonvulsant [8], antifungal[9], CNS depressant[10] and antiepileptic[1]. In addition, they have also been used in agriculture[11], plastics, polymers and dyes[12]. Hence heterocyclic chemistry still continues to draw the attention of synthetic organic chemists and is of great scientific interest.

A large number of organo-sulphur compounds occur in living and non-living objects. They belong to open chain, alicyclic, aromatic and heterocyclic types of compounds containing sulphur atom or atoms as a part of chain/ring or both in the structure[13]. Several five membered aromatic systems having three hetero atoms at symmetrical position have been studied because of their interesting physiological properties, such as azole, pyrrole, thiazole, thiadiazole, oxadiazole, triazene etc. and they also exhibit wide variety of biological activities[14]. Thiadiazole is a heterocyclic compound featuring both two nitrogen atom and one sulphur atom as part of the aromatic five membered rings. Thiadiazole and related compounds are called 1, 3, 4-thiadiazole (two nitrogen and one other hetero atom in a five-membered ring). They occur in nature in four isomeric forms as 1,2,3-thiadiazole; 1,2,5-thiadiazole; 1,2,4-thiadiazole and 1,3,4-thiadiazole[15].