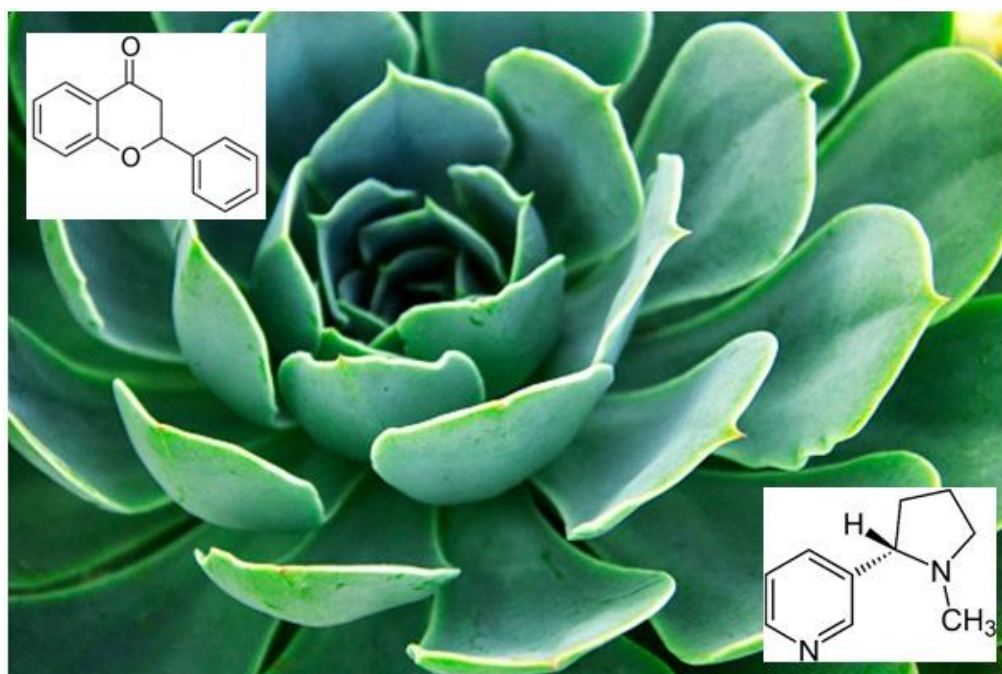




**ONE DAY STATE-LEVEL WORKSHOP ON  
“EMERGING TRENDS IN PHYTOCHEMISTRY AND NATURAL  
PRODUCTS”**

**9<sup>th</sup> November 2021**



Organized by:

**Department of Chemistry**

*in collaboration with*

**Department of Botany**

**TARA GOVERNMENT COLLEGE SANGAREDDY**

**(Autonomous)**

**(ISO 9001:2015 CERTIFIED)**

(Affiliated to Osmania University & Accredited by NAAC with „B“ grade, 2.75 CGPA)

**SANGAREDDY-502 001, SANGAREDDY (Dist), T.S., INDIA**

Website: <https://gdcts.cgg.gov.in/sangareddy.edu>

E-mail: [pri-gdc-srd-ce@telangana.gov.in](mailto:pri-gdc-srd-ce@telangana.gov.in),

### Resource Persons:

**Prof. Y. JAYAPRAKASH RAO**

Department of Organic Chemistry  
Osmania University, Hyderabad.

**Prof. B. VIDYA VARDHINI**

Department of Botany  
Telangana University, Nizamabad.

### Organizing committee:

**Chairperson: Smt. M.Praveena**

Principal (FAC)

**Convener: Abhijit Kantankar**

Head, Department of Chemistry

**Co- Convener: Dr.S.Vijaya**

Head, Department of Botany



### Members:

Dr. O.Padmaja, Asst. Professor of Botany

N.Siddulu, Asst. Professor of Botany

N. Sravani Asst. Professor of Chemistry

V. Manoj Kumar, Asst. Professor of Chemistry

J. Ravi Kumar, Asst. Professor of Chemistry

K. Sreedhar, Asst. Professor of Chemistry

R. Shiva Deepti, Asst. Professor of Chemistry

## **ABOUT THE WORKSHOP**

The workshop intended to address emerging trends related to phytochemical and Natural product research in the field of chemical and biological sciences. The workshop is so designed has address the challenges faced during the research in phytochemical and Natural products by enlightening the recent aspect of the scientific research strategies. The goal of the workshop is to make the participants update in the research field with proper orientation of research protocols.

## **OBJECTIVES OF THE WORKSHOP**

1. Characterization and Importance of Phytochemicals and Natural Products.
2. Impact of Environmental stress on composition of phytochemicals.
3. Isolation procedures for natural products from plant material.
4. Recent protocols of designing novel natural product analogues with pharmacological activities.
5. New synthetic strategies for Natural product scaffolds.
6. Case study of synthesis of natural products.

## ABOUT THE RESOURCE PERSONS

### Prof . Y. Jayaprakash Rao

M. Sc, Ph.D, Osmania University, Hydearbad



**Prof. Y. Jayaprakash Rao** is an academician and researcher in the area of organic chemistry. He is having more than **30 years** of teaching and research experience. Prof. Rao has a broad range of research interests with current focus on natural products isolation and design of new strategies for synthesis of bioactive heterocyclic compounds. He has authored over **90 research papers** in leading national and international journals and is a much sought after speaker having delivered over 60 lectures in national and international seminars, conferences and also Organized several National and International seminars & conferences.. Prof. Rao is a recipient of Telangana State **Best Teacher award 2016** and is a **fellow of ICC and ICS**. He has also acted as an author for Telugu academy books. He served as the **Registrar of Telangana University**, Nizamabad. He has also organized several National and International seminars & conferences.

### Prof. B. VidyaVardhini

M. Sc, Ph.D, Telangana University, Nizamabad



**Prof. B. Vidya Vardhini** is a Professor and Head in the Department of Botany, Telangana University. She is the Former **REGISTRAR** of Telangana University. She has **25** years of teaching and research experience. **She** published **78 Research and Review Articles** in National and International journals with good Impact Factors. She has presented **69** papers in National and International Seminars /Conferences etc. She attended **21** National and International Seminars /Conferences etc. She served as Lead Guest Editor/ Review Board Member for **11** Journals. She reviewed nearly **149** research articles. She was the **Convener/ Coordinator/Co-**

**Convener for 9 National Seminars/Popular Lectures Series/Science Academies' Lecture Workshop** sponsored by A.P. State Council for Higher Education, Indian Council of Medical Research (ICMR), New Delhi and SERB (Science and Engineering Research Board, The Department of Science and Technology (Ministry of Science and Technology, Govt. of India), Indian Academy of Sciences, Bangalore, Indian National Science Academy, New Delhi, The National Academy of Sciences, Allahabad etc. She is an **Associate fellow of Telangana Academy of Sciences (TAS)**, Hyd.

## **Technical Session-I**

**Resource Person: Prof. Y. Jayaprakash Rao**

### **Natural products isolation, Characterization and Synthesis**

- Primary and secondary metabolites
- Concept of Natural Products
- Sources of Natural Products
- Classification of Natural Products
- Nomenclature of Natural Products
- Importance of Natural Products
- Medicinal plants
- Chemistry of Natural Products
- Extraction of Natural Products
- Methods of Extractions-Conventional and Modern

### **Modern and Greener Extraction Methods**

- a) Super Critical Fluid Extraction(SFE)
- b) Pressurized Liquid Extraction(PLE)
- c) Microwave Assisted Extraction(MAE)
- d) Ultrasound Assisted Extraction(UAE)
- e) Pulsed Electric Field Extraction(PEF)
- f) Enzyme Assisted Extraction(EAE)

## **Technical Session-II**

**Resource Person: Prof. Y. Jayaprakash Rao**

### **Emerging isolation strategies in Natural products from Plant material**

- Role of Solvents in Extraction process
- Selection of plant material for Natural Product extraction

### **Purification of Natural Products**

- a. Chromatographic techniques
- b. Non- Chromatographic techniques

### **Structural Elucidation of Natural Products using MS, XRD , 1D NMR and 2D**

#### **NMR-Menthol-A case study**

- a. Total Synthesis of Natural Product
- b. Retro synthesis of Menthol

### **Current research significance in Natural products**

- Natural products and Industry 4.0
- Role Connecting Genes in Natural products discovery
- Modern directions in natural products chemistry
- Issues and challenges in Natural Products today
- Research areas in natural products today

## **Technical Session-III**

**Resource Person: Prof.B.Vidyavardhini**

### **Importance of Flora in new Drug Discovery**

- Importance of Secondary metabolites in Medicinal Chemistry
- Phyto-chemical modulations in Stress physiology of plants

## **Chemical composition of plant-Biochemistry**

- Plant Growth regulators
- Crop Modulators-Applications
- Phyto-hormones-Physiological Significance
- Biosynthesis of Phyto-hormones

### **Technical Session-IV**

**Resource Person: Prof.B.Vidyavardhini**

#### **Brassinosteroids**

- Classification
- Physiology
- Applications

#### **Physiological Responses of Salicylic Acid-A case study**







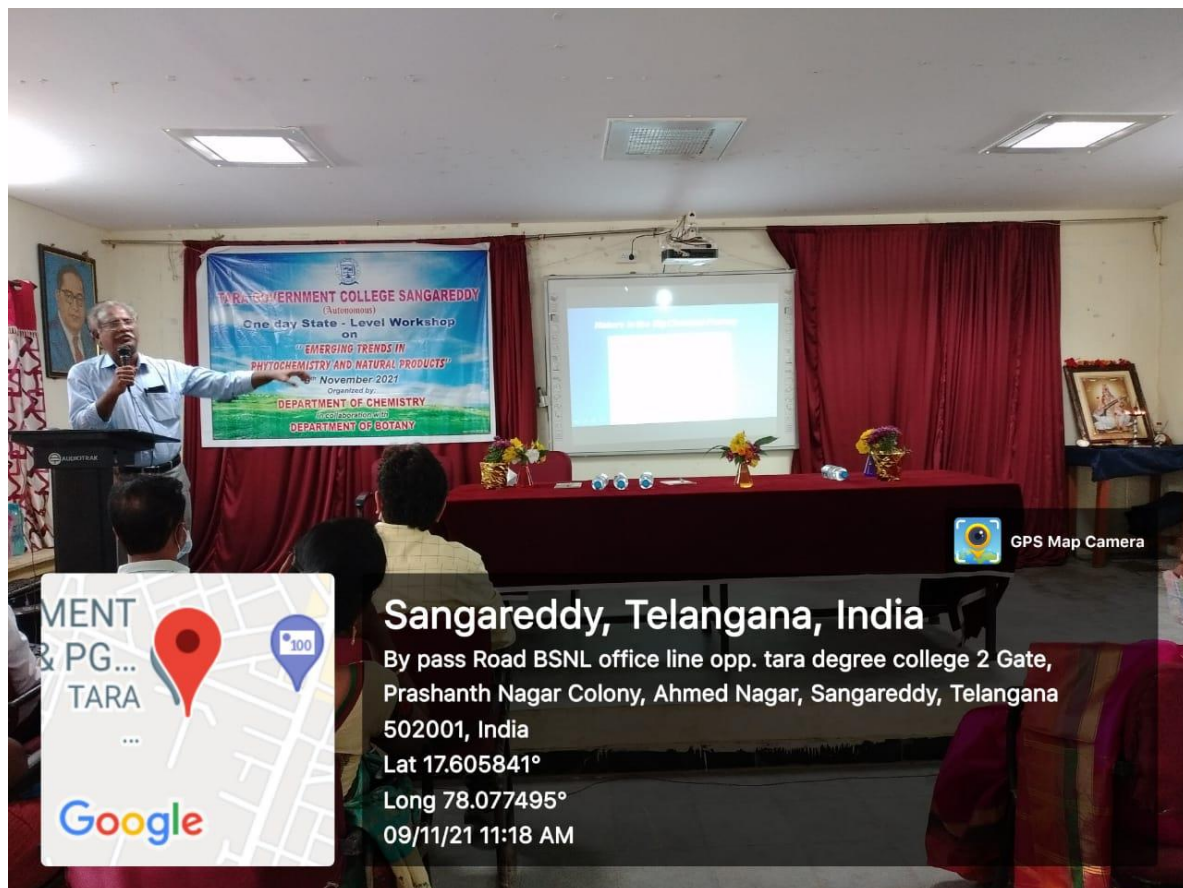








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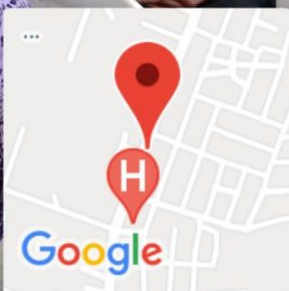
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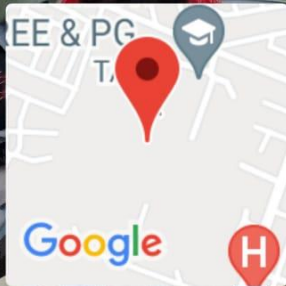


### Sangareddy, Telangana, India

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Sangareddy Bypass Rd, opp. BSNL Office, Marepally, Ahmed Nagar,  
Sangareddy, Telangana 502001, India  
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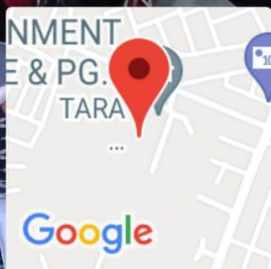
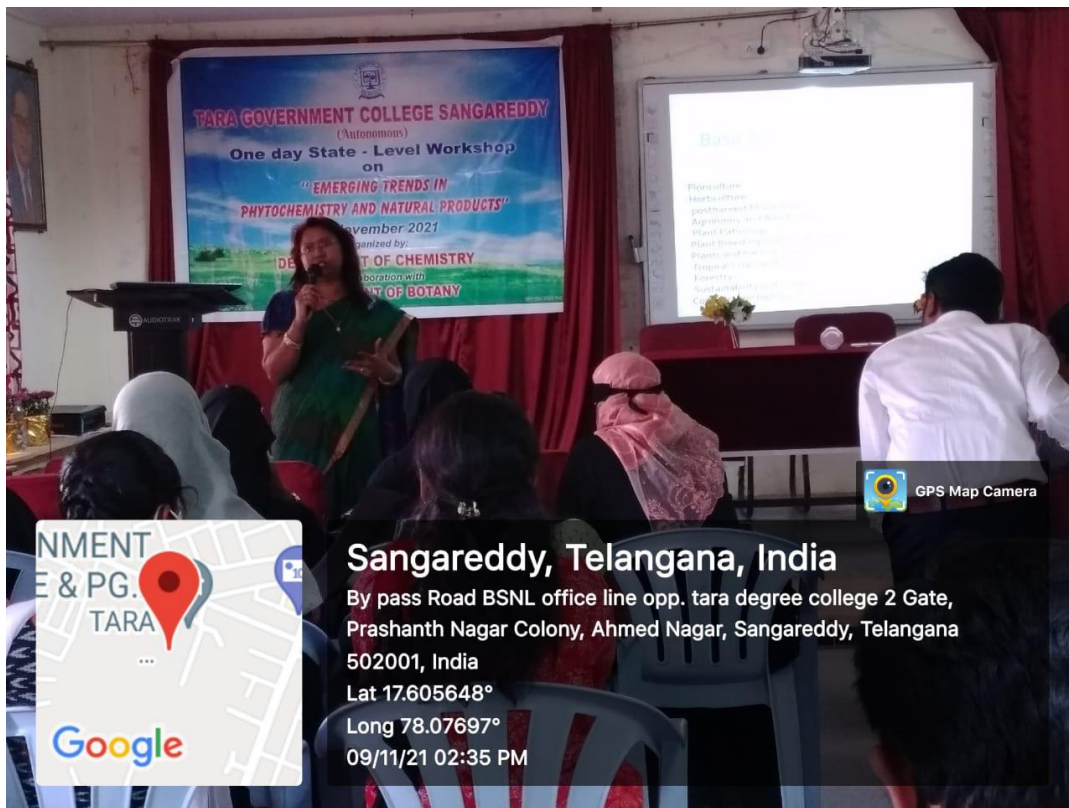


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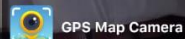
### Sangareddy, Telangana, India

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Sangareddy, Telangana 502001, India  
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### Sangareddy, Telangana, India

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Prashanth Nagar Colony, Ahmed Nagar, Sangareddy, Telangana  
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# PRESS COVERAGE

## 'తారా' కళాశాలలో కార్యశాల

సంగారెడ్డి టౌన్: సంగారెడ్డిలోని తారా ప్రభుత్వ డిగ్రీ కళాశాలలో మంగళవారం వృక్షశాస్త్ర విభాగం ఆధ్వర్యంలో ఒకరోజు రాష్ట్రస్థాయి కార్యశాలను నిర్వహించారు. ప్రిన్సిపల్ ప్రవీణ, ప్రొఫెసర్లు జయప్రకాశరావు మాట్లాడుతూ వృక్షశాస్త్ర విద్యార్థులు పరిశోధనలపై దృష్టిసారించాలని కోరారు.

## ఈనాడు

### విద్యార్థులకు అవగాహన

కొండాపూర్(సంగారెడ్డి): జిల్లా కేంద్రమైన సంగారెడ్డిలోని తారా ప్రభుత్వ డిగ్రీ కళాశాలలో మంగళవారం రాసాయనశాస్త్రం, వృక్ష శాస్త్రం విభాగాల ఆధ్వర్యంలో ఒక రోజు వర్క్ షాపును నిర్వహించినట్లు కళాశాల ప్రిన్సిపల్ ప్రవీణ తెలిపారు. ఫైటో కెమిస్ట్రీ, జాతీయ ఉత్పత్తులు అంశంపై విద్యార్థులకు అవగాహన కల్పించారు. ఈ వర్క్ షాప్ నకు ముఖ్య అతిథిగా విచ్చేసిన ప్రొ జయప్రకాష్ రావు

మొక్కల్లో ఉండే రసాయనాలు, వాటి ప్రాముఖ్యతను వివరించారు. కాగా ఈ కార్యక్రమానికి రిసోర్స్ పర్సన్ గా విచ్చేసిన తెలంగాణ విశ్వవిద్యాలయ ప్రొ విద్యావర్ధిని మాట్లాడుతూ పర్యావరణంలోని మార్పులు మొక్కలపై ప్రభావాన్ని చూపిస్తాయని తెలుపుతూ మొక్కల అనుఘటనను విశ్లేషించారు. ఈ కార్యక్రమంలో కళాశాల వైస్ ప్రిన్సిపల్ ఉపేందర్, వెంకటేశం, ప్రోగ్రాం కో ఆర్డినేటర్ అభిజిత్, విజయ, అధ్యాపకులు శ్రావణి, పద్మజ, రవికుమార్, శ్రీధర్, సిద్ధులు తదితరులున్నారు.





## REGISTRATION FORM

NAME: \_\_\_\_\_  
ACADEMIC QUALIFICATIONS: \_\_\_\_\_  
DESIGNATION: \_\_\_\_\_  
DEPARTMENT: \_\_\_\_\_  
NAME OF THE ORGANIZATION: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
MOBILE NO: \_\_\_\_\_  
EMAIL: \_\_\_\_\_  
PAYMENT ID: \_\_\_\_\_  
DATE: \_\_\_\_\_

Signature of the applicant

### REGISTRATION FEE

FACULTY : RS.150/-  
SCHOLARS : RS.100/-  
STUDENTS : RS.50/-  
MODE OF PAYMENT: GPAY (NO. 9502344392)  
SPOT REGISTRATIONS ARE ALSO AVAILABLE

For details contact : **9502344392**

For registration :  
<https://forms.gle/4NFKXJd6X2PAKZ3ZA>

### Resource Persons:

Prof. Y. JAYAPRAKASH RAO  
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Osmania University, Hyderabad.

Prof. B. VIDYA VARDHINI  
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### Organizing Committee :

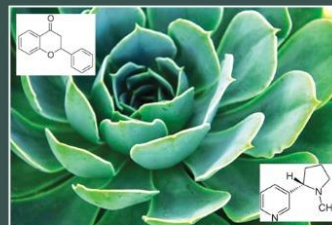
CHAIRPERSON : SMT. M.PRAVEENA  
Principal (FAC)  
CONVENER : ABHIJIT KANTANAR  
Head, Department of Chemistry  
CO- CONVENER : DR.S.VIJAYA  
Head, Department of Botany



### MEMBERS :

DR. O.PADMAJA, Asst. Professor of Botany  
N.SIDDULU, Asst. Professor of Botany  
N. SRAVANI Asst. Professor of Chemistry  
V. MANOJ KUMAR, Asst. Professor of Chemistry  
J. RAVI KUMAR, Asst. Professor of Chemistry  
K. SREEDHAR, Asst. Professor of Chemistry  
R. SHIVA DEEPTI, Asst. Professor of Chemistry

One day State - Level Workshop  
on  
**"Emerging Trends in  
Phytochemistry and  
Natural Products"**  
9<sup>th</sup> November 2021



Organized by:  
DEPARTMENT OF CHEMISTRY  
in collaboration with  
DEPARTMENT OF BOTANY



## TARA GOVERNMENT COLLEGE SANGAREDDY

(Autonomous)  
(ISO 9001:2015 CERTIFIED)  
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### About the College

As we flip through the pages of history "Sangareddy", formerly known as Sangareddy peta and dates back to 2nd B.C. to 1st A.D of Shalivahana reign. It has cherished its cultural heights under the rule of Sangha Bhupala. Since then, Sangareddy carved a niche for itself in the Telangana State. Subsequently Tara Government College, Sangareddy which was named after Smt. Tara Swaroop, who donated Rs. 2 Lakhs towards corpus fund during the inception of the college added a feather in the cap of Sangareddy. It has started imparting higher education at Two levels, viz., UG and PG with 40 varied disciplines in the U.G stream and 10 in the PG stream. Since then, the college has made rapid stride from 232 to 2846 students. Now Tara Government College is acknowledged as a premier institution of higher education and affiliated to Osmania University. The college was recognized as an Autonomous College in 2015 in which year the UGC expert committee visited the college and recommended Autonomous status for the college. The College is committed to cater the needs of the all stakeholders of the society. Housed in large buildings with built in area of 96,000 Sq.ft on a beautiful campus of 20 acres.

Sensing the market needs, Restructured courses were added in 1998. The Principal and dynamic team of faculty contribute significantly to the fulfillment of the academic programmes. Since its inception, Tara Government College, Sangareddy has seen tremendous academic progress and students won many Laurels from across the society. The college is one of the few chosen to start the pilot project of National Service Scheme (NSS) and the National Cadet Corps (NCC). The college Library has nearly 18,578 books. The college has the distinction to introduce the Telangana Skill & Knowledge Centre (TSKC), a unique program of the Government of Telangana which enhances the employability. Hon'ble Commissioner of Collegiate Education has reached an MoU with Telangana Academy for Skills and Knowledge (TASK). As part of this, the college has been offering Skills for employability to students.

The Commissionerate of Collegiate Education (CCE), recognizing its academic and administrative excellence, identified this college as an "Identified College" (ID College) & District Resource Centre (DRC) from where it discharges several academic and administrative functions in monitoring all the O7 Government Degree Colleges in the district. In recognition of its academic quality and excellence, the National Assessment and Accreditation Council (NAAC) has accredited the College with B+ grade in March, 2006 and reaccredited with "B" grade by NAAC (CGPA2.75 on four points scale) in March 2013.

### About Sangareddy Town :

Sangareddy (formerly Sangareddypeta) is a town and the district headquarters of Sangareddy district in the Indian state of Telangana. It was named after the ruler Sanga, who was the son of Rani Shankaramba, a ruler of Medak during the period of Nizams. The district is spread over an area of 4,464.87 square kilometres (1,723.90 sq mi). As of 2011 Census of India, the district has a population of 15,27,628. The city has three large-scale public sector industries. These are Bharat Heavy Electricals Limited (one of the MAHARATNA companies of the Indian Government), Bharat Dynamics Limited (where one of India's most powerful missiles, PRITHVI was produced), and Ordnance Factory Medak (which manufactures the Sarath tanks for the Indian Army). The NH-9 road passes through the city. About 15 km Away from Sangareddy there is an outer ring road which connects to Shamshabad airport - Rajiv Gandhi International Airport, Hyderabad, Gachibowli, and Medchal. The nearest air transport facility is Hyderabad International Airport, which is 70 km from Sangareddy.

### About The Department of Chemistry :

Tara Govt. (A) College, Sangareddy was started in the year 1977 with B.A Humanities. B.Sc courses were introduced in the year 1981 with the combination of Mathematics, Physics, Chemistry(MPC) and Botany, Zoology, Chemistry (BZC). English as medium of instruction was started in the year 1998. In view of the demand for chemistry (Number of chemical industries around Sangareddy town) M.Sc Organic Chemistry a self financed course was started in 2006. In the year 2013 MPC, BZC English medium courses were started at UG Level. Currently Department of chemistry has more than 1000 students with 7 combinations with chemistry as one of the subject where as the intake of M.Sc. Organic chemistry is 60 students per year. Department has three spacious laboratories one instrumentation room, one balance room, one store room and one separate staff room for chemistry teaching faculty. In addition to this Department has separate library. The Department was well established and has well equipped like spectrophotometers, conductometers, pH-meters, colorimeters, polarimeters, ovens and vacuum pumps etc. Chemistry students from this college are rendering services to the society in various levels under Government and Private Organizations. Department of Chemistry has well experienced and qualified faculty. One minor research project has been completed in the Department sponsored by UGC-SERO. Department of chemistry has also organized two national seminars and completed one UGC sponsored minor research project.

Students of BSc-III(Chemistry), J.Manjulatha, A. Bhanuprakash, J.Swetha, A.Pranaya, P.Pooja, G.Sai Ganesh have won state level Second Prize in "JIGNASA" study projects-2020 in Chemistry under the super-vision of K.Abhijit, Asst. Professor of Chemistry. In CPGET-2019-conducted by Osmania University, G.Shirisha secured State level 1st Rank in CHEMISTRY.

### About The Department of Botany :

The department was established during the academic year-1977 with B.Sc combinations of Botany,Zoology and Chemistry. During that academic year the Department was confined to a single room. It was established by Smt.G.Vijaya,Lecturer in Botany. With increase of strength year by year and based on CBCS system many groups are formed with new combinations i. e., BZC with both mediums, BTBC, MBZC, BZCA and BZM. Along the undergraduate courses, there is a Post Graduate course with 60 sanctioned seats. The Department has well established labs with many types of equipments such as microscopes, centrifuges, OHP, oven and other specific gadgets. The department has a library with number of books. In CPGET in the year 2020 a student named Shamim got first rank, many other students have also got good ranks.

### About The Workshop

The workshop intended to address emerging trends related to phytochemical and Natural product research in the field of chemical and biological sciences. The workshop is so designed that it addresses the challenges faced during the research in phytochemical and Natural products by enlightening the recent aspect of the scientific research strategies. The goal of the workshop is to make the participants update in the research field with proper orientation of research protocols.

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