# Newsletter (2017-2018)

## Department of Chemistry

# JNTUH University College of Engineering,

Kukatpally, Hyderabad (T.S.) – 500085 INDIA.

Greetings from Department of Chemistry, JNTUH.

The Department of Chemistry was established at the inception of the Jawaharlal Nehru Technological University Hyderabad. The Department of Chemistry has become one of the important science departments of the University. The department also has dedicated and enthusiastic group of faculty members involved in research activities at the Ph.D level. The areas include Synthetic Organic Chemistry, Spectroscopy, Inorganic Metal-Complexes, Analytical Chemistry and Natural Products of Biological importance. The department has grants from CSIR, UGC. The Department of Chemistry stood as one of the highly prolific institutions carrying research in organic chemistry from 2010 to till today.

**VISION:**

The Department is committed to raise the intellectual tone of the young students in understanding and incorporating the basics of rapidly progressing changes in the fields of Science & Technology, with an objective of enhancing their competence by applying their proficiency and skill for industrial and economic development by creating better living environment in the society.

**Dr. M. Thirumala Chary,**
Professor & Head
Depat. Of Chemistry, JNTUH.

**MISSION:**

- To identify, scientifically evaluate and implement proven, prevention-oriented, forward-looking solutions to critical scientific and technological problems.
- To make technology a principal instrument of economic development of the country and to improve the quality of life of the people though technological education, innovation, research, training and consultancy.
- The Department has a small but enthusiastic group of Teaching Faculty who has taken to teaching of Chemistry and Chemical research wholeheartedly. The Department has good laboratories and infrastructural facilities with financial inputs from the University, the College, the UGC and CSIR.

**THE GOALS:**

- To strengthen the edifice of Engineering and Technological Education on the four pillars teaching, research, training and consultancy.
- To play the lead role in harnessing and developing human resources towards economic, industrial, management through Chemistry.
- To attain technical excellence.
- To stimulate, support and collaborate in R & D efforts with industry.
- To pioneer and actively participate in evolving appropriate technologies.
- To develop native genius for the development of rural India.
- To adhere to the ethics of instruction.

**INNOVATIVE PRACTICES ADOPTED:**

- ❖ To incorporate fields experiences and field problems in lectures.
- ❖ To involve students in consultancy projects.
- ❖ To give practical oriented live projects for students as their project works.
- ❖ To take students to sites where some important and latest techniques are used to give latest technology exposure to students.
- ❖ To arrange guest lecturers of well-known researchers from various institutes across the globe for the benefit of the students

| S.No | Name | Designation | Photo |
|---|---|---|---|
| 1 | Dr. Bhoomi Reddy Rama Devi | Professor |  |
| 2 | Dr. Aparna Pasula | Assistant Professor |  |
| 3 | Dr. Thatituri Sabithakala | Assistant Professor |  |
| 4 | Prof. M. Thirumala Chary | Professor & Head of the Department |  |
| 5 | Dr. Taduri Ashok Kumar | Assistant Professor (C) |  |

***Number of Books Published during 2017-18:***

| | | | |
|---|---|---|---|
| Dr. B. Rama Devi | A Text book of Engineering Chemistry & Environmental Studies | 2017-18 | VGS Publications |
| Dr. B. Rama Devi | A Text book of Engineering Chemistry & Environmental Studies – I | 2017-18 | VGS Publications |
| Dr. B. Rama Devi, Ch. VRR & Prashanth Rath | A Text Book of Engineering Chemistry | 2017 | Cengage Publications |

***Courses offered by Dept. of Chemistry during 2017-18:***

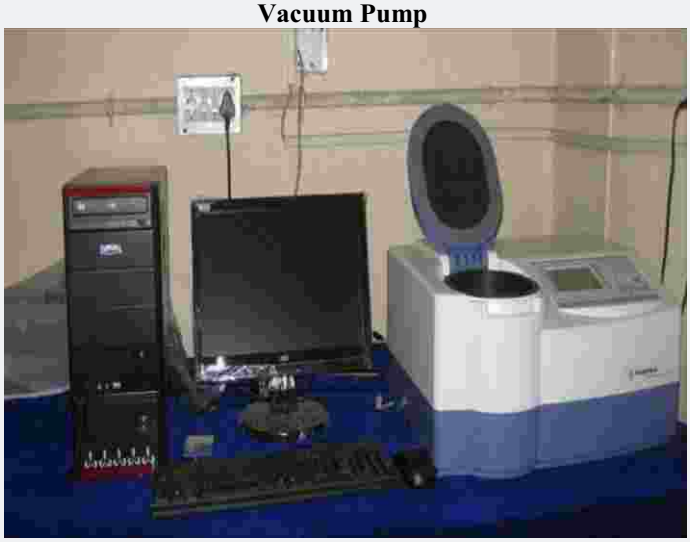
1. B.Tech – I Year – Applied Chemistry (all branches)
2. B. Tech – II Year – Analytical & Organic Chemistry (Chemical Engineering)
3. M.Sc. Chemistry (Drugs & Pharmaceuticals)

| S.No | Name of the Equipment | Nos. | Purpose |
|---|---|---|---|
| 1 | **FTIR Spectrometer** | **01** | To Characterize organic compounds for research and M.Sc. student lab experiments |
| 2 | **UV-Visible Spectrometer** | **01** | To Characterize organic compounds for research and M.Sc. student lab experiments |
| 3 | **Petrol Gas Plant** | **01** | For flame generation & heating samples during laboratory experiments |
| 4 | **Distilled water plant** | **02** | To generate distilled water used for both B.tech, M.Sc. and research lab experiments. |
| 5 | **Parr Hydrogenator** | **01** | For hydrogenation reactions useful for both M.Sc. and Research lab experiments. |
| 6 | **Microwave Ovens** | **02** | To conduct green synthesis reaction for M.Sc. and B.Tech Chemical Engg and research lab experiments. |
| 7 | **Fuming cup-boards** | **04** | To handle corrosive and fuming chemicals during the laboratory expariments. |
| 8 | **Sterilizer,Incubator, Hot air-ovens** | **01 Set** | To sterilize the samples, glassware and to dry compounds during laboratory experiments. |
| 9 | **High Vaccum Pump** | **02** | To filtrate the compounds during laboratory experiments. |
| 10 | **Rotary Evaporator** | **02** | To separate solvents from reaction mixtures during the laboratory experiments for both M.Sc. and research. |
| 11 | **Ultra Sonicator & Parallel Synthesizer** | **01 & 01** | To conduct green synthesis reaction for M.Sc. and B.Tech Chemical Engg and research lab experiments. |

Rotary Evaporator

Vacuum Pump

UV Spectrometer



IR Spectrometer

Fuming Hood

Hot Air Oven

Distilled water Unit

Parallel Synthesizer

***FACULTY ACHIEVEMENTS:***

***Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other researchfellows enrolled in the institution during 2017-18***

| S.No. | Name of the Research fellow | Duration of the fellowship | Type of the fellowship | Granting Agency |
|---|---|---|---|---|
| 1. | G. Gangareddy | 2014-2017 | Project Fellow (Inspire) | DST |
| 2. | B. Suryanarayana | 2016-2021 | JRF/SRF (Inspire) | DST |
| 3. | Radhika | 2017-2019 | Post-Doc/ Research Associate | UGC-BRNS |
| 4. | Riyaz Syed | 2017-2021 | Research Associate/ Co-PI | DST BRICS project |

***Number of Patents published/awarded during 2017-18 by Dr. B. Rama Devi: 01***

| S.No. | Name of the Patent published | Patent Number | Year of the Award |
|---|---|---|---|
| 1. | Process for the preparation of Dolutegravir | US Patent/US 9,573,965 B2 | 21-02-2017 |

***Number of Ph.Ds awarded per teacher during 2017-18:***

| S.No. | Name of the PhD scholar | Name of the Department | Name of the guide | Year of registration | Year of award |
|---|---|---|---|---|---|
| 1. | D. Poorna Chand | Chemistry | Dr. B. Rama Devi (C0-Supervisor) | 2012 | 2017 |
| 2. | M. Rajanikanth | Chemistry | Dr. M. Thirumala Chary (Co- Supervisor) | 2011 | 2017 |

***Number of research papers published in the Journals during 2017-18:***

**Dr. B. Rama Devi, Professor:**

1. Synthesis and Characterization of Dihydro-1H-Benzimidazole-8-Carboxylic Acids as a Potential Antimicrobial Agents, Mohana Rao Anguru, Ashok Kumar Taduri, **Rama Devi Bhoomireddy**, *Journal of Chemical and Pharmaceutical Research*, 2017. (International)
2. Green and Efficient Synthesis of 4 HeterylQuinolines and Their Antibacterial Evaluations, Raja S Bhupathi, Madhu Bandi, Venkata Ramana Reddy Ch, **B. Rama Devi**, PK Dubey, *Journal of Heterocyclic Chemistry*, 2017. (International)
3. One pot synthesis of substituted 1H- benzo [f] chromen- 3-yl-2H-chromen-2- one derivatives, Yellanki Jagannadham, **Bhoomireddy Ramadevi**, Bethanamudi Prasanna, *European Journal of Chemistry*, 2017. (International)
4. Evaluation of Process Impurities and Degradants of Sitagliptin Phosphate by Validated Stability Indicating RP-LC Method, Y. Ravindra Kumar Nagi Reddy Vuyyuru, G. Vamsi Krishna, **B. Rama Devi**, *Asian Journal of Chemistry*, 2017. (International)
5. Novel drug targets for Mycobacterium tuberculosis: 2-heterostyrylbenzimidazoles as inhibitors of cell wall protein synthesis, Mohana Rao Anguru*, Ashok Kumar Taduri, **Rama Devi Bhoomireddy**, Malathi Jojula and Shravan Kumar Gunda, Chemistry Central Journal, 2017. (International)

**Dr. M. Thirumala Chary, Professor:**

1. A new facile and efficient synthesis of 2 ((5 aryl 1,3,4 ox adiazol 2 yl)methox y) 3 methyl quinoxaline and 3methylquinoxalin2yl2(5aryl2H tetrazol2yl)acetate derivatives, Shashikala, Hemalatha, Laxminarayana, **Thirumala Chary**, *European Journal of Chemistry*, 2017. (International)

2. A green synthesis of quinoxaline derivatives and their biological activities, Kiran, Laxminarayana, Ravinder, **Thirumala Chary**, *International journal of applied chemistry*, 2017. (International)
3. Synthesis and antibacterial study of novel 4-(4- (methylamino)thieno[3, 2-d]pyrimidin-2-yl)-N'-methylenebenzohydraz one derivatives, Giri, shailaja, Laxminarayana, **Thirumala Chary**, *Russian Journal of Chemistry*, 2017. (International)
4. Conventional and Microwave assisted synthesis of quinoxaline carboxamide derivatives, Shashikala Laxminarayana, **Thirumala Chary**, *Asian Journal of Chemistry*, 2017. (International)
5. Simple and efficient synthesis of 1-(4,5- dihydro-5-aryl-3- (quinoxalin-7-ylamino)pyrazol-1- yl)ethenone derivatives, Shashikala Laxminarayana, **Thirumala Chary**, *Asian Journal of Research Chemistry*, 2017. (International)
6. Synthesis and antibacterial activity of 2-((3/4-(1,8-naphthyridin-2- yl)phenoxy)methyl)-N-phenylbenzamide derivatives, Vijaya Bhaskar, LathaLaxminarayana, **Thirumala Chary**, *Russian Journal of Chemistry*, 2017. (International)
7. Total synthesis of Ezetimbie and their key sterioisomers, Satyanarayana,Vijaya Bhaskar Laxminarayana, **Thirumala Chary**, *Heterocyclic Letters*, 2017. (International)

**Dr. Ch. Venkata Ramana Reddy, Professor:**

1. Synthesis, Characterisation, Antibacterial and DNA binding studies of Mn (II) complex of 3-(2-(2-hydroxy-3-methoxybenzylidene) hydrazinyl) quinoxalin-(1H)-one, **Ch. Venkata Ramana Reddy** et al.. *IOSR Journal of Applied Chemistry*, 2017. (International)
2. DNA Binding,DNA cleavage and Antibacterial activity of Ni(II) and Cu(II) complexes derived from Pyridoxal thiose micarbazone, **Ch. Venkata Ramana Reddy** et al.. *Asian Journal of Science and Technology*, 2017. (International)
3. Synthesis, Structural Characterisation and DNA – binding studirs of Iron(II) Chelate of 3-(2-(2-Hydroxy-3-Methoxybenzylidene) Hydrazinyl)quinoxalin-(1H)-One, **Ch. Venkata Ramana Reddy** et al.., *J. Chem. and Chemical Sciences*, 2017. (International)

**Dr. T. Sabithakala, Assistant Professor:**

1. Carboxylate-bridged Cu(II) coordination polymeric complex: synthesis,crystal structure, magnetic properties, DNA binding and electrochemical studies, **Sabithakala T**, Bhargavi G, Venkata Ramana Reddy Ch, *Journal of chemical sciences*, 2017. (International).

**Dr. T. Ashok Kumar, Assistant Professor ©:**

1. Synthesis and Characterization of Dihydro-1H- Benzimidazole- 8-Carboxylic Acids as a Potential Antimicrobial Agents, Mohana Rao Anguru, **Ashok Kumar Taduri** and Rama Devi Bhoomireddy, *Journal of Chemical and Pharmaceutical Research*, 2017. (International)
2. Novel drug targetsfor Mycobacterium tuberculosis: 2-heterostyrylbenzimidazoles as inhibitors of cell wall protein synthesis, Mohana Rao Anguru*, **Ashok Kumar Taduri**, Rama Devi Bhoomireddy, Malathi Jojula and Shravan Kumar Gunda, *Chemistry Central Journal*, 2017. (International)

Bibliometrics of the publications during the year 2017-18

**Dr. B. Rama Devi:**

| S.No. | Title of the Paper | Name of the authors | Title of the Journal | Year | Citation Index |
|---|---|---|---|---|---|
| **1.** | Green and Efficient Synthesis of 4- Heteryl- Quinolines and Their Antibacterial Evaluations | Raja S Bhupathi, Madhu Bandi, Venkata Ramana Reddy Ch, **B Rama Devi**, PK Dubey | Journal of Heterocyclic Chemistry | **2017** | **1** |
| **2.** | Ionic Liquid Mediated Green Synthesis of Spirooxindoles from N- methyl Quinolones and Their Anti Bacterial Activity | Raja S Bhupathi, Bandi Madhu, Ch Venkata Ramana Reddy, **B Rama Devi**, PK Dubey | Journal of Heterocyclic Chemistry | **2017** | **9** |

| | | | | | |
|---|---|---|---|---|---|
| **3.** | Evaluation of Process Impurities and Degradants of Sitagliptin Phosphate by Validated Stability Indicating RP-LC Method | Y. Ravindra Kumar Nagi, **B Rama Devi** | Asian Journal of Chemistry | **2017** | **1** |
| **4.** | Novel drug targets for Mycobacterium tuberculosis: 2-heterostyrylbenzimidazoles as inhibitors of cell wall protein synthesis | Mohana Rao Anguru, Ashok Kumar Taduri, **Rama Devi Bhoomireddy**, Malathi Jojula & Shravan Kumar Gunda | Chemistry Central Journal | **2017** | **15** |

**Dr. T. Sabithakala:**

| S.No. | Title of the paper | Name of the authors | Name of the journal | Year | Citation Index |
|---|---|---|---|---|---|
| 1. | Carboxylate-bridged Cu(II) coordination polymeric complex: synthesis, crystal structure, magnetic properties, DNA binding and electrochemical studies | **Sabithakala T**, Bhargavi G, Venkata Ramana Reddy Ch | Journal of chemical sciences | **2017** | **12** |

**Dr. M. Thirumala Chary:**

| S.No. | Title of the paper | Name of the authors | Name of the journal | Year | Citation Index |
|---|---|---|---|---|---|
| 1. | A new facile and efficient synthesis of 2- ((5- aryl- 1,3,4- oxadiazol - 2- yl)methoxy)- 3- methyl quinoxaline and 3- methylquinoxalin- 2- yl - 2- (5- aryl- 2H- tetrazol- 2- yl)acetate derivatives | Shashikala, Hemalatha, Laxminarayana, Thirumala Chary | European Journal of Chemistry | **2017** | **1** |
| 2. | Synthesis and antibacterial study of novel 4-(4-(methylamino)thieno[3,2 -d]pyrimidin-2-yl)-N'-methylenebenzohydrazo ne derivatives | Giri, shailaja, Laxminarayana, Thirumala Chary | Russian Journal of Chemistry | **2017** | **1** |
| 3. | Conventional and Microwave assisted synthesis of quinoxaline carboxamide derivatives | Shashikala Laxminarayana, Thirumala Chary | Asian Journal of Chemistry | **2017** | **3** |

**Dr. T. Ashok Kumar:**

| S.No. | Title of the Paper | Name of the authors | Title of the Journal | Year | Citation Index |
|---|---|---|---|---|---|
| 1. | Novel drug targets for Mycobacterium tuberculosis: 2-heterostyrylbenzimidazoles as inhibitors of cell wall protein synthesis | Mohana Rao Anguru, **Ashok Kumar Taduri**, Rama Devi Bhoomireddy, Malathi Jojula & Shravan Kumar Gunda | Chemistry Central Journal | **2017** | **15** |

**BoS Conducted in 2017-18:**

JNTUH College of Engineering Hyderabad
(Autonomous)
Department of Chemistry
Minutes of the Board of Studies meeting held on 18th June, 2018.

The members of the Board of Studies in Chemistry have met in the Department of Chemistry, on 18th June, 2018. The main agenda of this meeting is to revise the syllabus of the courses as per the AICTE model curriculum. The members present in the meeting are:

1. Dr. M. Thirumala Chary
   Professor & Head, Department of Chemistry — Chairman
2. Dr. V. Rajeshwar Rao
   Professor of Chemistry, NIT Warangal — Member
3. Dr. A. Panasa Reddy
   Professor & Head, Dept of Chem, Osmania univ. Engg College — Member
4. Dr. V. Laxman Rao
   Vice-President. MYLAN laboratories, Hyderabad — Member
5. Dr. Ch. V. Ramana Reddy
   Professor of Chemistry, JNTUHCEH — Member
6. Dr. P Aparna
   Asst. Professor, dept of Chem, JNTUHCEH — Member
7. Dr. B. Srinivasa Reddy
   Asst. Prof, Mahatma Gandhi Inst of Tech, Hyd — Member

**Conferences Organized:**

1. International Congress on Recent Advances in Chemistry And Chemical Engineering (ICARACACE-16), July 11-13, 2016.

**Department of Chemistry: International Congress on Recent Advances in Chemistry And Chemical Engineering (ICARACACE-16)**


**Dr. B. Rama Devi, Convener, ICRACACE-16 – Addressing the Congress**


**Releasing of Souvenir, ICRACACE-16**

**International Delegates – ICRACACE-16**