

DEPARTMENT OF CHEMISTRY

Annual Report 2021-2022

The college reopened for the academic year 2021-22 on 18th June for staff 2020 for II and III year students and on Oct 1st 2021 for I years.

Student strength for the academic year 2021 -2022:

S.NO	Class	STRENGTH
01	IB.Sc.Chemistry	126
02	IIB.Sc Chemistry	260
03	IIIB.Sc Chemistry	278
	Total	664

Results of VI Semesters of 2021-2022:

S.No	Class	Pass Percentage
01	IIIB.ScChemistryPaperVII	100
02	IIIB.ScChemistryPaperVIIIA ₁	100
03	IIIB.ScChemistryPaperVIIIA ₂	100
04	IIIB.ScChemistry PaperVIIIA ₃	100

Results of I, III, V Semesters of 2021-2022:

S.No	Class	Pass Percentage
01	IB.Sc.Chemistry	95.12
02	IIB.Sc.Chemistry	94.5
03	IIIB.Sc.Chemistry Paper V	91.6
04	IIIB.Sc.Chemistry Paper VI	97.3

Staff Achievements:

- ❖ Dr.K.Swarna Latha, Associate Professor in Chemistry was awarded "**Indo Asian Education Excellence Award 2022**" by RED Talks Daily International, IMRF, On the occasion of National science day and International Mother language day 2022 on Feb 28th 2022. Our college Principal Dr.Sr.Marietta D'Mello congratulated on the occasion of achieve the award. **5th March 2022**
- ❖ Dr CA Jyothirmayee, H O Department of chemistry is nominated by AP State Council of Higher Education to prepare the outcome based syllabus of Skill Enhanced Courses (SECs) in Chemistry for Semester - V under the revised CBCS came into effect from 2020-2021.
- ❖ Dr.C.A.Jyothirmayee actively participated in BOS meeting of Andhra Layola college Vijayawada on 7th June 2021.
- ❖ Dr M.Rama, Department of Chemistry attended the BOS meeting as a subject expert by online (Google meet) on 4th September 2021 at KBN College(A), Vijayawada.
- ❖ Dr M.Rama, Department of Chemistry attended the BOS meeting as a subject expert virtually (Google meet) on 6th September 2021 at St. Joseph's College for women(A), Visakhapatnam.
- ❖ Dr.V.Nagalakshmi attended meeting of Board of Studies of the department of

chemistry of V.S.M. College (A), Ramachandrapuram for the academic year 2021-22 was scheduled on 9th September, 2021 at 10.00 AM through online google meet as subject expert.

- ❖ Dr CA Jyothirmayee, HOD Dept of Chemistry participated actively in Board of studies meeting of DNR College, Bhimavaram held on 15th Nov 2021 via online platform through Google meet as Subject expert. She gave guidance regarding the Project work to be carried out in the IV Semester.
- ❖ Dr CA Jyothirmayee, HOD Dept of Chemistry participated in BOS Meeting of Andhra Loyola College, Vijayawada on 4th Jan 2022 and contributed towards the Curriculum designing and planning certificate courses.

Activities of the Department:

- ❖ Competitions were conducted on Elimination of Single Use Plastics by the Department of Chemistry on **15th June 2021**: According to the guidelines of UGC to Higher Education Institutes, our institute Ch.S.D.St.Theresa's College for Women (A), Eluru conducted virtual essay writing and elocution competitions on Elimination of Single use plastic on 15th June 2021, following the protocols on COVID-19. Many students actively participated and shared their opinions.
- ❖ Nearly 115 students participated in essay writing competition. In elocution competition **Mekathoti Sri Rupa**, 191851, ZNC got **1st prize**. **M.Yamini**, 201642, MSCS got **2nd prize** and **Ch.V.Durga Devi**, 191732, BZC got **1st prize**.

1. Independence Day celebration:

- ❖ 75th Independence Day was celebrated on 15th August 2021 by the III MPC II Section. The celebration started at 9am with brief introduction about Independence Day. It is initiated by Vandaemataram followed by virtual flag hoisting with National anthem. All the students saluted in respect of National flag. All the students wore white dress for the celebration. Miss supriya sang patriotic song

Desam manadhi followed by speech by Dr.K.Swarnalatha. The programme came to an end with patriotic song jandavuncharahaehamara followed by vote of thanks.

- ❖ Independence Day has been celebrated by the students of III B.S.c - MPC-I by Dr. N. Gayatri devi and Ms. N. Madhavi faculty from the department of Chemistry on 15th August 2021 through virtual platform. The programme has been started with the National song 'Vande Matharam' followed by flag hoisting with National anthem 'Jana gana Mana' sung by all. Guest of honour of the programme Dr. C. A Jyothirmayee, H Of the Dept of Chemistry has given an inspirational speech on Independence day. Ward tutors Dr.N.Gayatri Devi and Ms.Madhavi has given a short message on independence day. M. C of the programme SK. Mounisha helped to organize the programme well. Few students like Prathyusha, Lahari, Ramya highlighted the importance of independence day celebrations. The programme has been concluded by vote of thanks proposed by Syed. Abhida.
- ❖ In view of the upcoming " **Ganesh chaturthi**", Department of Chemistry organised an awareness program on " All you need to know about Plaster of Paris idols" on 09.09.2021. Dr CA Jyothirmayee, Head of the department of Chemistry enlightened the students regarding the disadvantages of using POP idols and advised to use mud idols which are eco-friendly, doesn't create water pollution and not harmful to aquatic life.

2. International Ozone day celebrations:

- ❖ In order to create awareness about the depletion of the Ozone layer and prevention, International day for the preservation of the Ozone layer was celebrated on 16th September 2021. Dr CA Jyothirmayee, H Of the Department of Chemistry gave a talk on "Ozone for life: 36 years of Ozone layer protection". The slogan of the day, 'Ozone for life', reminds us that not only is ozone crucial for life on Earth, but that we must continue to protect the ozone layer for future generations.

3. “Self driven activity- Preparation of Home needs”:

- ❖ As a part of the activity of IICell - Self driven activity , Department of Chemistry encouraged the III BSc students to prepare Cosmeceuticals like Kajal, lip stick, lip balm, skin toner etc., and few important home needs like Bath soap, Henna, Candles, Dhoop stick etc., from natural resources and simple raw materials. Students came up with best quality products. They displayed the products and three of the products were awarded prizes.

4. Freshers day celebrations -2021-2022

- ❖ Week long Orientation program along with English Bridge course of Ch SD St Theresa’s college for women(A), came to an end with Freshers Day celebrations held on 09.10.2021 in the media centre. The programme was organised by the Department of Chemistry. Dr Sr Marietta D’ Mello, the Principal of the college addressed the freshers and delivered an inspirational message. Sister mentioned that Desire, Decision and Determination are very important to achieve a goal. Confidence and Discipline are essential for women empowerment. Freshers performed different Cultural programmes like, classical singing, classical and folk dancing etc., As a tradition of our college Miss Fresher Contest was organised. Freshers took very active participation in the programme. Miss Fresher St Theresa 2021-2022 Winner is Ms Sravani, Runner up -1 is Ms K Arthika Sravani and Runner up -2 is Ms N. Jyothi Swaroopa. The students gave an excellent feedback about the week long orientation programme.

5. Bridge course:

- ❖ Department of Chemistry organised Bridge course in Chemistry on 12th Oct 2021 for the First year BSc students. Dr CA Jyothirmayee H O the Department of Chemistry, Dr M Rama and Dr V Naga Lakshmi explained the fundamentals, importance and applications of Chemistry. They gave tips to learn chemistry in an easy way. Students took active participation in the programme.
- ❖ Curriculum plays a crucial role in enabling quality learning for our young learners in our society i.e. students. An effective curriculum not only enables a student's

learning process & knowledge acquired but also supports students to overcome their inhibitions and aids in their holistic development. The curriculum is equipped with making students industry ready, allow internships for hands on experience, learn about Constitution of India, Environment science etc. Induction program has been included as a mandatory program for the first year students to get acquainted and get accustomed to the new environment in the college. A curriculum needs to be consistent and sustainable and it has been noticed that students joining a BSc program required to strengthen their concepts in science subjects i.e Physics, Chemistry, Botany, Zoology, Mathematics etc., building a better foundation during the first semester itself. Ch SD St Theresa's college for women, therefore decided to develop lecture based bridge courses in basic science subjects i.e Physics, Chemistry, Mathematics etc., for students,. The lecture based modules have been developed. This task has been accomplished by a team of faculty members, Department of Chemistry.

6. Impact Lecture Session on “Exciting Career opportunities in Chemical and Pharmaceutical industries”:

- ❖ Career opportunities within science and technology are seeing unprecedented growth across the world, and those who study chemistry or another natural science at university now have increasingly better career prospects.
- ❖ Overall the talk is highly informative, inspiring and thought provoking. The resource person Mr Nagaraju garu made the presentation very interesting starting with the importance of Chemistry in our daily life and landed at the wide career opportunities in Chemical and Pharmaceutical industries. He made the session mostly interactive and lively with the PPT.
- ❖ On October 29th 2021-As a part of awareness programme on "Clean India" NSS Committee of our college Head of the Department of Chemistry, Dr CA Jyothirmayee gave an inspirational talk on " Say no to Single use plastic". At the end of the programme the students had taken pledge to avoid single use plastic , to refuse, reduce, reuse, repurpose and recycle the plastic and also to educate others

about plastic waste and to take action to help the world.

7. National seminar on “Natural products Technology” on 16.02.2022:

- ❖ The Novel Covid-19 pandemic started from Dec 2019 has cast unprecedented threat to public health worldwide. We called attention to natural products and herbal medicines. Natural products derived from plants and animals play important roles in shaping modern medicine. In this context, the department of chemistry in association with IQAC, Ch.S.D.St.Theresa’s college for women (A) Eluru organized a National seminar on “Natural products Technology” on 16.02.2022.
- ❖ The resource person is Dr.D.Madhavi, Founder-Institute of Bio-Chemical Technology Hyderabad. The presentation is excellent and interesting with all live examples. She presented the recent research going on in the Institute of Bio-Chemical Technology Hyderabad. She created awareness in the importance of natural products in the field of drug discovery and synthesis. Altogether 300 delegates participated including faculty and students. Students took an active role in the organization of the National seminar.

8. National Seminar on “Dressed to function: Molecular tools for the manipulation of size, surface chemistry and assemblies of metal nanoparticles”:

- ❖ The resource person made the presentation very interesting and excellent keeping in mind the students. He presented what are Nano particles, the importance and applications of Nano particles in different fields. He addressed the advanced research going on in Nanotechnology. The session was planned in such a way that it is lively and interactive. Overall the session is very interesting, informative and thought provoking.
- ❖ Our seminar was a huge success. All thanks to the resource person for enlightening words that inspired so many young minds. Students took active participation at the question hour. The target group is motivated towards research.

Nearly 200 delegates both faculty and students attended the National seminar. Dr BLV Prasad created awareness on the importance of Nanoparticles in drug delivery especially in cancer treatment.

9. “National periodic table day celebrations”:

- ❖ National Periodic Table Day is observed on February 07, when people working in the science domain celebrate the formation of the modern-day Periodic Table that contributed to the evolution of science and paved the way for remarkable innovations. On the occasion of National periodic table day celebrations on 7th February 2022, as a part of Focus club activity Ms Madhavi along with Ms Sruthi Raj Kamal prepared questionnaire for a quiz competition for the final year BSc students. Students took active participation in the competition. Dr Swarna Latha, Mr Srinivas Rao sir Ms Subhashini and Ms Madhavi organized the quiz competition systematically.
- ❖ In view of the National Periodic table day celebrations, FOCUS CLUB of the department of Chemistry rganized a Tambola competition for the cluster students to create awareness and the importance of atomic numbers of elements in the Periodic table on 12th Feb 2022. Nearly 80 students took active participation in the programme and prizes were announced to the respective students.

10. Safety clinic- HP Gas Company:

- ❖ These days we see that LPG is commonly used in nearly every Industry, households and others for affordability, utility, Eco-friendliness and so on. Yet, owing to certain properties of LPG, catastrophes related to it are not unheard of. In this context HP Gas Company in association with Vijaya agencies organized an awareness program on “SAFETY TIPS AND MEASURES” to take in any given situation on 24th Feb 2022 to I & II BSc students. Department of Chemistry coordinated the program.

11. Insignia- Chemistry exhibition on 5th March 2022:

- ❖ As a part of Insignia - Nypunya Vikas, Department of Chemistry registered two products STC - Natural products and STC- Home needs in UDYAM and got registration certificates. On 5th March different products like Natural Soaps, Phenyl, Floor cleaner, Henna powder, Sanitizer, Pain balm, candles, Dhoop sticks, Chalk pieces etc., are prepared and displayed in the exhibition.
- ❖ Most of the detergents on the market are synthesized from petrochemical products. However, the interest in reducing the use of products harmful to human health and the environment has led to the search for detergents formulated with natural, biodegradable surfactant components of biological (plant or microbiological) origin or chemically synthesized from natural raw materials usually referred to as green surfactant.

12. Student -Staff academic exchange program on 12th March 2022:

- ❖ Chemistry cluster students accompanied by Dr V Naga Lakshmi, Dr N Gayatri Devi and Ms N Madhavi went to Sri YN College(A), Narsapuram for Student - Staff academic exchange program on 10th March 2022. Dr Ch Venkateswara Rao, Asst Professor, Department of Chemistry presented a Guest lecture on " Basics of Nuclear Magnetic Resonance spectrometry". Both the departments of Chemistry of Ch SD St Theresa's college for women and YN College signed MOU for future "Students and Staff academic exchange programs". Dr Ronald, HOD Dept of Chemistry, Dr G Rama Krishna, Dean YN College played active role in the event. Principal Dr Sr Marietta D'Mello of Ch SD St Theresa's college for women and Dr APV Appa Rao, Principal YN College, congratulated the department members for the initiation.

Ch SD St Theresa's college for women(A) Eluru and Sri YN College (A), Narsapuram signed MOU for co-operation in all academic collaborations. The areas of co-operation may include:

- ❖ Faculty and student exchange based on reciprocity
- ❖ Joint conferences, workshops, FDPs, Webinars and training programmes

- ❖ Curriculum design and revision
- ❖ Team taught courses, Invited talks including online courses
- ❖ Inter Institute Faculty- student visits.

Startups:

As a part of start ups under the Innovation Incubation center, the department of chemistry prepared different home needs. Among them floor cleaner and phenyl are prepared from natural sources and simple raw material and registered on 2nd Feb 2022 under UDYAM registration certificate, government of India as STC Home needs. UDYAM registration number is UDYAM-AP-12-0013051.

PUBLICATIONS

Ch.S.D.St.Theresa's College For Women (Autonomous), Eluru

UG & PG List Of Publications (June2021 to March 2022)

S.No	Title of the Paper	Name of the Author	Name of the journal	ISSN number	Year of publication	Link	doi num	Vol.No , Issue No & Page No.	UGC/ SCOPUS/SCI
1	Emerging trends of skill development programs in India	Dr.K.Sreelatha Dr.C.A.Jyothirmaye	Proceedings of Social innovation and entrepreneurship in INDIA	ISBN:978-81-947453-1-0	February 2022			PP178-184	
2	Chromatographic Method for the purification of Fulvestrant in Pharmaceutical Formulation	Dr.C.A.Jyothirmaye Dr.K.Sreetha Ms.A.R.N.L.Sirisha	International journal of Research and Analytical Reviews	E-ISSN 2348-1269, P- ISSN 2349-5138	March2022	www.ijrar.org		Volume 9, Issue 1	Google Scholar
3	Drinking Water quality assessment using physico-	Dr.C.A.Jyothirmaye	International journal of creative research thoughts	2320-2882	March 2022	http://www.ijcrt.org/papers/IJCRT2203597.pdf		Volume 10 ISSUE 10 I.F 7.97	Google Scholar

	chemical parameters and water quality index of pedapadu mandal, West Godavari Dt., Ap, India								
4	A Review of renewable energy sources sustainability issues	Dr.C.A.Jyothirmayee Dr.K.Sreelatha Dr.V.Sandhya Mrs.K.J.Subhashini Mrs.N.Madhavi	International journal of creative research thoughts	2320-2882	March 2022	http://www.ijcrt.org/papers/IJCRT2203597.pdf		Volume 10 Issue 3 I.F 7.97	Google Scholar
5	3-D Printing Technology in Pharmaceutical	M.Rama	Natural Volatiles and Essential Oils	5342-5349	November 2021	https://www.scopus.com/sourceid/21100904334	https://nveo.org/index.php/journal/article/view/1675/1461	8(5) PP 5342-5349	SCOPUS
6	Analytical Method Development & Validation for the Estimation of Temazolamide and	Dr.V.Nagalakshmi Mr.G.Srinivasa Rao	Journal of Cardiovascular Disease Research	0975-3583, 0976-2833	2021	http://www.jcdonline.org/index.php?sec=archive	https://www.bibliomed.org/?mno=140232 doi: 10.31838/jcdr.2021.12.06.135	VOL12, ISSUE 06 PP985-995	SCOPUS

	Anastrazoleby Using RP-HPLC Method								
7	Development and Validation of RP-HPLC Method for the simultaneous determination of Cisplatin, Capectitabine and Trastuzumab	Dr.V.Nagalakshmi Mr.G.Srinivasa Rao	International journal of pharmaceutical quality assurance	0975-9506	March 2022	https://ijpqa.com/volume13issue1/	doi prefix: 10.25258/ijpqa	Vol.13 Issue 1 PP30-38 I.F 1.041	SCOPUS
8	Validated Spectrophotometric Method For The Estimation Of Tiagabine Hcl In Bulk And Formulations	V.Nagalakshmi , G.Srinivasa Rao , K.Subhashini , NVNB Srinivasa Rao , N.Gayatri Devi	International Journal Of Novel Research And Development	2456-4184	April 2022	https://www.ijnrd.org/viewpaperforall?paper=IJNRD2204024 https://www.ijnrd.org/papers/IJNRD2204024.pdf	http://doi.org/10.1729/Journal.29841	Vol.7 Issue 4 PP226-229 I.F 8.76	Google Scholar
9	Spectrophotometric Methods For The Assay Of Tiagabine Hcl Using	V.Nagalakshmi, G.Srinivasa Rao, N.Madhav	International Journal for Research Trends and Innovation	2456-3315	April 2022	https://www.ijrti.org/papers/IJRTI2204009.pdf	http://doi.org/10.1729/Journal.30099	Vol.7 Issue 4 PP 43-46 I.F 8.14	Google Scholar

	Chromogenic Reagents	i, NVNB Srinivasa Rao N.Gayatri Devi							
10	Assay of Tiagabine.Hcl (Tia) Using Chromogenic Reagents by Spectrophotometric Methods	V.Nagalakshmi, G.Srinivasa Rao, K.Subhashini, N.Madhavi, NVNB Srinivasa Rao, A.Nirmala Jyotsna ,N.Gayatri Devi	International journal of Advances in Engineering and Management (IJAEM)	2395-5252	April, 2022	http://www.ijaem.net/current-issue.php?issueid=41		Volume 4, Issue 4, pp: 655-660 IF 7.429	Google Scholar
11	Viscometric Study On Binary Liquid Mixtures Of Propiophenone With Aniline And N-Alkyl Substituted Anilines, At 303.15 To 318.15 K	Dr.N.Gayatri Devi Dr.V.Nagalakshmi Dr.Sr.Sunila Rani	Rasayan J. Chem.,	0974-1496 e-ISSN: 0976-0083	March 2022	http://www.rasayanjournal.com	http://dx.doi.org/10.31788/RJC.2022.1516663	Vol. 15 Issue No. 1 PP292-301 I.F :1.301	SCOPUS

12	Influence of Nano-Fe ₂ O ₃ concentration on thermal characteristics of the water based nano fluid	Dr.N.Gayatri Devi	Materials Today: Proceedings	2214-7853	May 2022	https://www.sciencedirect.com/science/article/pii/S2214785322032102?dgcid=author	https://doi.org/10.1016/j.matpr.2022.04.995	Vol.62 Part 4 PP2392-2395 I.F 26.943	Elsevier
13	Optimization of WEDM Process Parameters in Al2024-LiSi3N4 MMC	V.Nagalakshmi	Hindawi Journal of Nanomaterials		May 2022	https://www.hindawi.com/journals/jnm/2022/2903385/	https://doi.org/10.1155/2022/2903385	Volume 2022, Article ID 2903385, PP1-12 I.F 3.791	SCOPUS

Chemistry Faculty Patents

Ch.S.D.St.Theresa's College for Women, Eluru

2020 PATENTS

1. Dr.C.A.Jyothirmayee, Dr.M.Rama, Dr.V.Nagalakshmi and Dr.N.Gayatri Devi published a patent on “ A Novel smart carbonless cooking gasifier” with the patent office journal number 49/2020 on 4th December, 2020. This patent was filed on 12th October, 2020 with application number 202031044344 in the field of mechanical engineering in collaboration with Prof.Ramesh Chandra Panda, Dean Research Development Cell Synergy Institute of Engineering and Technology, Dhenkanal Orissa-759001.
2. Dr.V.Nagalakshmi published a patent on “Application of marine based minerals as food supplements” with the patent office journal number 50/2020 dated on 11th December, 2020. This patent was filed on 1st December, 2020 with application number 202041052199 A in the field of food in collaboration with Dr.Aruna Kumari Nakkella, Assistant Principal, Dr.BR Ambedkar University, Srikakulam.

2021 PATENTS

3. Dr.V.Nagalakshmi and Dr.S.Pratima Kumari published a patent on “ECLIPTA ALBA BASED COMPOSITION FOR HAEMORRHOIDS AND ITS PREPARATION METHOD THEREOF” with the patent office journal number 06/2021 dated on 6th February 2021. This patent was filed on 1st February, 2021 with application number 202141004378 A in the field of medicinal chemistry in collaboration with Dr.Aruna Kumari Nakkella, Assistant Principal, Dr.BR Ambedkar University, Srikakulam.
4. Dr.V.Nagalakshmi and Dr.S.Pratima Kumari published a patent on “Artificial Intelligence based animal detection and identification for protection of field crops” with the patent office journal number 18/2021 dated on 30th April 2021. This patent was filed on 21st April, 2021 with application number 202141018335A in the field of mechanical engineering in collaboration with Dr.Aruna Kumari Nakkella, Assistant Principal, Dr.BR Ambedkar University, Srikakulam.
5. Dr.V.Nagalakshmi published a patent on “A novel method for nano-carbon energy-storage material with specific high energy” with the patent office journal number 39/2021 dated on 24th September 2021. This patent was filed on 22nd

August, 2021 with application number 202141037976 A in collaboration with Dr. C Dhananjaya Rao, Professor of Physics Department of Basic sciences and Humanities, Siddharth Institute of Engineering & Technology Puttur, Andhra Pradesh India. Pincode-517583

6. Dr.V.Nagalakshmi published a patent on “Sustainable and Effective Treatment Technology for Removing Organic Pollutants in Wastewater Treatment using Nanobubbles” with the patent office journal number 39/2021 dated on 24th September 2021. This patent filed on 4th September, 2021 with application number 202141040195 A in in collaboration with Dr. Kumara Swamy Jella, Associate Professor, Department of Chemistry, Chaitanya Deemed to be University, Hanamkonda, Warangal Telangana, India Pincode:506001
7. Dr.C.A.Jyothirmayee and Dr.K.Sree Latha published a patent on “NANOPARTICLES FOR PRODUCING CERAMIC HEAT SHIELD AND SEAL” with the patent office journal number 42/2021 dated on 15th October 2021. This patent was filed on 3rd October, 2021 with application number 202141044814 A in collaboration with Dr. Ganganagunta Srinivas ,Senior Faculty in Physics Engineering department University of Technology and Applied Sciences-IBRA IBRA, North Al Shrqiya Region Oman, Pincode:400.
8. Dr.K.Swarna Latha published a patent on “THREE-DIMENSIONAL NANOPARTICULATE DRUG DELIVERY GUIDANCE SYSTEM AND METHOD THEREOF” with the patent office journal number 48/2021 dated on 26th November 2021. This patent was filed on 12th November, 2021 with application number 202141051870 A in collaboration with Dr. Ganganagunta Srinivas, Senior Faculty in Physics, Engineering department, University of Technology and Applied Sciences-IBRA, IBRA, North Al Sharqiya region, Oman, Pincode:400

2022 PATENTS

9. Dr.V.Nagalakshmi published a patent on “Metal complexes and composition with novel Synthesis, Characterization, and Properties of Binuclear Gold(I) Phosphine Alkynyl Complexes” with the patent office journal number 05/2022 dated on 04th February 2022. This patent was filed on 12th January, 2022 with application number 202241001883 A in collaboration with Dr. Kumara Swamy Jella, Associate Professor, Department of Chemistry, Chaitanya Deemed to be University, Hanamkonda, Warangal, Telangana, India, Pincode:506001.

10. Dr.K.Swarna Latha published a patent on “METHOD FOR THE SYNTHESIS OF MIXED METAL NANOSCALE COMPOSITES USING LOW COST PRECURSORS” with the patent office journal number 07/2022 dated on 18th February 2022. This patent was filed on 22nd January, 2022 with application number 202221003745 A in collaboration with Dr. Wasudeo Balaji Gurnule, Professor, Department of Chemistry, Kamla Nehru Mahavidyalaya, Nagpur, Maharashtra, India, Pincode: 440024

11. Dr.V.Nagalakshmi published a patent on “Predict the occurrence of radiation fog using statistical and ML models” with the patent office journal number 24/2022 dated on 17th June, 2022. This patent was filed on 28th May, 2022 with application number 202241030690 in collaboration with Dr. Rajesh Kanna M.R, Associate Professor, Department of Mathematics, Sri D.Devaraj Urs Government First Grade College, Hunsur, Karnataka, India, Pincode:571105 Hunsur.