

**A.S.D. GOVT. DEGREE COLLEGE FOR WOMEN (A),**

**KAKINADA - 533002, EASTGODAVARI, ANDHRA PRADESH**

## **Department of Chemistry**



**NATIONAL CHEMISTRY DAY CELEBRATIONS**

**2021-22**

From  
V. Mallikarjuna Sarma  
Head, Dept. of Chemistry  
ASD Govt. Degree College for Women  
Kakinada

To  
Principal  
ASD Govt. Degree College for Women  
Kakinada.

Respected Madam,

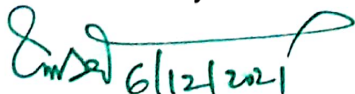
**Sub:** Request to grant permission for organizing National Level Webinar on the occasion of National Chemistry Day Celebrations.

With due regards, this is to bring for your kind perusal and consideration that the department of Chemistry is planning to organize a National level Webinar on the occasion of National Chemistry Day celebrations, one of the best practice of the department and the chief guest of the webinar is Dr. N. Lingiah, Principal Scientist, CSIR-IICT, Hyderabad.

In this connection, I request you to kindly grant the permission to organize an online National Level Quiz on 07/12/2021 followed by a National Webinar on 10/12/2021.

Thanking you for your Consideration,

Yours Sincerely

  
V. Mallikarjuna Sharma

  
Principal 6/12/21

(Dr. V. Anantha Lakshmi)



## CIRCULAR

Station: Kakinada,  
Date: 06-12-2021.

In connection with the National Chemistry Day Celebrations, the Department of Chemistry wishes to conduct "ELOCUTION, ESSAY WRITING & POSTER PRESENTATION" competitions for I, II & III B.Sc, B.Com and B.A Students in Seminar Hall at 2-00PM on Dt.08-12-2021. All the concerned Lecturers are requested to give permission to the I, II, III B.Sc, B.Com and B.A students to participate in these Competitions. Interested students can give their names to Ms. M. Subbalakshmi, Contract Lecturer in Chemistry on or before Dt. 07-12-2021.

**ELOCUTION:** CHEMISTRY – "Our Life, Our Future"

**ESSAY WRITING:** "Scientific Contribution to the mankind, when the world witnessed pandemics"

**POSTER PRESENTATION:** "Nobel laureates 2021 and their contribution to Science"

Convenor : Mr. V. Mallikarjuna Sarma

Members : Dr. S. Priyadarshini

Dr. K. Jhansi Lakshmi

Ms. P. Leena

Ms. M.Subbalakshmi.

V. Subbalakshmi  
PRINCIPAL

6/12/21

# INVITATION



స్వీ విద్యాప్రపర్ణతాం

The Department of Chemistry of A. S. D. Govt. Degree College for Women (A) has been pleased to  
Organize **National Chemistry Day** on Dt.10-12-2021 at 11-00 A.M. at NB-3

**Chief Guest**

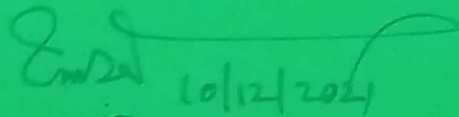
**Dr. N. LINGIAH, Senior Scientist**  
CSIR-IICT  
Hyderabad

**President**

**Dr. V. Anantha Lakshmi**

Principal, A. S. D. Govt. Degree College (W)(A), Kakinada

“All the faculty members are requested to attend the event”  
National Chemistry Day celebrations.

  
10/12/2021

Convenor

Department of Chemistry  
A.S.D. Govt. Degree College (W) (A),  
Kakinada.

  
10/12/21

Principal

A.S.D. Govt. Degree College(W)(A),  
Kakinada.





**A.S.D. GOVERNMENT DEGREE  
COLLEGE FOR WOMEN**

Autonomous and NAAC Re-accREDITED With "B" Grade in Cycle-III  
Affiliated to Adikavi Nannaya University, Rajamahendravaram  
Kakinada-533 002, Andhra Pradesh



**INVITATION**

**CHEMISTRY DAY CELEBRATIONS - 2021**

To be held on

10<sup>th</sup> December 2021 Friday @ 11:00 A.M.

Through Virtual/Online Mode by Google Meet

**Dr. N. LINGAIAH**

Principal Scientist

Indian Institute of Chemical Technology  
Hyderabad



has kindly consented to be the Chief Guest of the Function  
National Webinar On

**"BIOMASS TO CHEMICALS AND FUELS:  
OPPORTUNITIES & CHALLENGES"**

**Dr. V. ANANTHA LAKSHMI**

Our beloved Principal will preside over the function

Target Group:

- Faculty members, UG & PG (Chemistry) students.
- For Registration, click the following link and fill in all the details.
- <https://forms.gle/ADKeR8uT95MQFDDr7>

No Registration Fee for Webinar

[Click here  
To Register](#)

- e - Certificates with Photo and QR- Code will be sent through e- mail for all the participants.
- Mode of Delivery: Live web session through Google meet.
- Requirements: A Gmail Account and a smart phone/ Laptop/ Desktop and a headset with good internet connectivity.

**Attention Students!**

A Live National Level Online Quiz will be Conducted for UG Students on 07.12.2021 at 2:00 P.M. and Cash Prize will be Awarded to the winners.

Registration Details:

- Registration fee for each participant is: Rs. 50/- (Fifty Rupees Only)
- Registration is Confirmed subjected to the payment of Registration fee.
- A/C No. 62288377477  
State Bank of India, Zilla Parishad Branch, Kakinada.  
IFSC Code: SBIN0020974
- Last Date for Registration: 06<sup>th</sup> December 2021.
- The fee paid 'remitter voucher' should be uploaded in the google form while doing registration for the conferment of complete registration.
- Students who wish to Participate in the Online Quiz are instructed to Register by Using the Following link.  
<https://forms.gle/5JXURyJPXHroYaeV6>



First Prize: Rs. 1000/-  
Second Prize: Rs. 500/-  
Third Prize: Rs. 300/-

[Click here  
To Register](#)

- e - Certificates with Photo and QR- Code will be sent through e- mail for all the participants.
- The questions in online quiz will be from the following topics.
  - Atomic structure
  - Chemical bonding
  - Periodicity
  - Acid base chemistry
  - Colloids and surface chemistry
  - Gaseous state
  - Electrochemistry
  - Stereochemistry
  - Structure and bonding in organic chemistry
  - Aromaticity

**Organizing Committee**

**Dr. V. Anantha Lakshmi**  
Chairman  
Principal

**Smt. M. Suvarchala**  
Co- chairman  
Vice - Principal

**Dr. K. Jhansi Lakshmi**  
Convener  
Lecturer in Chemistry

**V. Mallikarjuna Sarma**  
Organizing Secretary  
Lecturer in Charge  
Department of Chemistry

**Members**

**Dr. S. Priyadarshini, M. Sc, NET, PhD.**  
**Ms. P. Leena, M. Sc, SET**  
**Ms. M. Subbalakshmi, M. Sc**

**For Details Contact:**

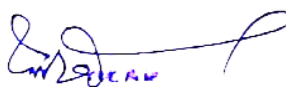

**V. Mallikarjuna Sarma**  
Organizing Secretary  
Mobile: 8341546804, 9676822550



**A.S.D. GOVT. DEGREE COLLEGE FOR WOMEN (A), KAKINADA**  
**533002, EASTGODAVARI, ANDHRA PRADESH**

**Department of Chemistry**

**ACTIVITY REGISTER FOR THE YEAR 2021-22**

Title of the Activity	National Chemistry Day Celebrations
Date	10.12.2021
Conducted by	Department of Chemistry
Nature of Activity	➤ National Level Online Quiz, Elocution and Essay Writing & Poster Presentation competitions are conducted to the students on the eve of National Chemistry Day Celebrations
Number of Students Participated	73
Brief Report on the Activity	National Chemistry Day is celebrated on 10 <sup>th</sup> December of every year in India, in honour of the death anniversary of Alfred Noble. In connection with this program we have invited a special guest Dr.N.Lingaih, Senior Scientist, CSIR-IICT, Hyderabad. He emphasized the role of chemistry and importance of chemistry in day to day life. Sri.V.Mallikarjuna Sarma, Incharge of chemistry department wished all the participants to gain knowledge and disseminate the same to many .
Name of the Lecturer who planned and conducted the Activity	Dr.K.Jhansi Lakshmi Dr.S.Priyadarshini, Lecturer in Chemistry Ms.P.Leena, Lecturer in Chemistry Ms.M.Subbalakshmi, Lecturer in Chemsitry
Signature of Lecturer Incharge	
Signature of the Principal	



## NATIONAL CHEMISTRY DAY:-

The National chemistry Day is celebrated on 10<sup>th</sup> December of every year in India, in honor of the death Anniversary of Alfred Nobel, whose full name is Alfred Bernhard Nobel. Born on October 21<sup>st</sup> 1833, Alfred Nobel, who is a Sweden, invented dynamite and other more powerful explosives. He left the bulk of his fortune to be deposited in a bank in Stockholm to establish what came to be the most highly regarded of international awards, the Nobel Prizes.

The National chemistry Day 2020 was celebrated in the Department of chemistry, A.S.D. Government Degree College for Women (A), on 10<sup>th</sup> December 2020 through Google meet platform.

In connection with this program, we arranged a special lecture on "BIOMASS TO CHEMICALS AND FUELS: OPPORTUNITIES AND CHALLENGES" by Dr. N. Lingaiah, Principal Scientist, CSIR-Indian Institute of chemical Technology, Hyderabad.

The chief guest of the National Webinar Dr. N. Lingiah congratulated the department of chemistry for wonderfully organizing the program and announced the prize winners after the lecture. The topics of the various competitions held at the college level on 08/12/2021 are as follows.

**ELOCUTION:** CHEMISTRY - "Our life our future"

**ESSAY WRITING:** "Contribution of scientists to the mankind on the pandemics the human world encountered."

**POSTER PRESENTATION:** "Nobel laureates in 2021" and their contribution to the world.

Dr. V. Anantha Lakshmi, Principal, A.S.D. Govt. Degree College for Women (A), gave her closing remarks and distributed the cash prizes for the deserving students. She also congratulated the department of chemistry for organizing two important events, National level online quiz and National level webinar on the occasion of National Chemistry Day. All the students who participated in the program gave their feedback and requested the head of the department, Mr. V. Mallikajuna Sarma and other staff Dr. S.P. Nyadachini, Dr. K. Thanei Lakshmi, Ms. P. Leena and Ms. M. Subba Lakshmi to continue to organize these events.



Around 250 candidates participated in this National webinar and around 15 students from other states like Telangana, West Bengal, Kerala, Pondicherry registered and joined the webinar.

For the first time, since its inception, the department of chemistry, A.S.D. Govt. Degree College for Women (A) has organised National level ONLINE QUIZ on 07/12/2021 and there was an immense response of the students from all over India. Around 91 students have registered and participated in the quiz through mandi app.

Apart from this, competitions like poster presentation, essay writing and elocution were organised for the degree students of A.S.D. Govt. Degree college for Women (A) and the students who secured highest marks were given cash prize on 10/12/2021. The first three toppers in each category were selected.

In National level online quiz, the three cash prizes of Rs 1000/-, 500/- and 300/- were bagged by the B.Sc chemistry students of



A.S.D. GOVT. DEGREE COLLEGE FOR WOMEN (A)  
KAKINADA

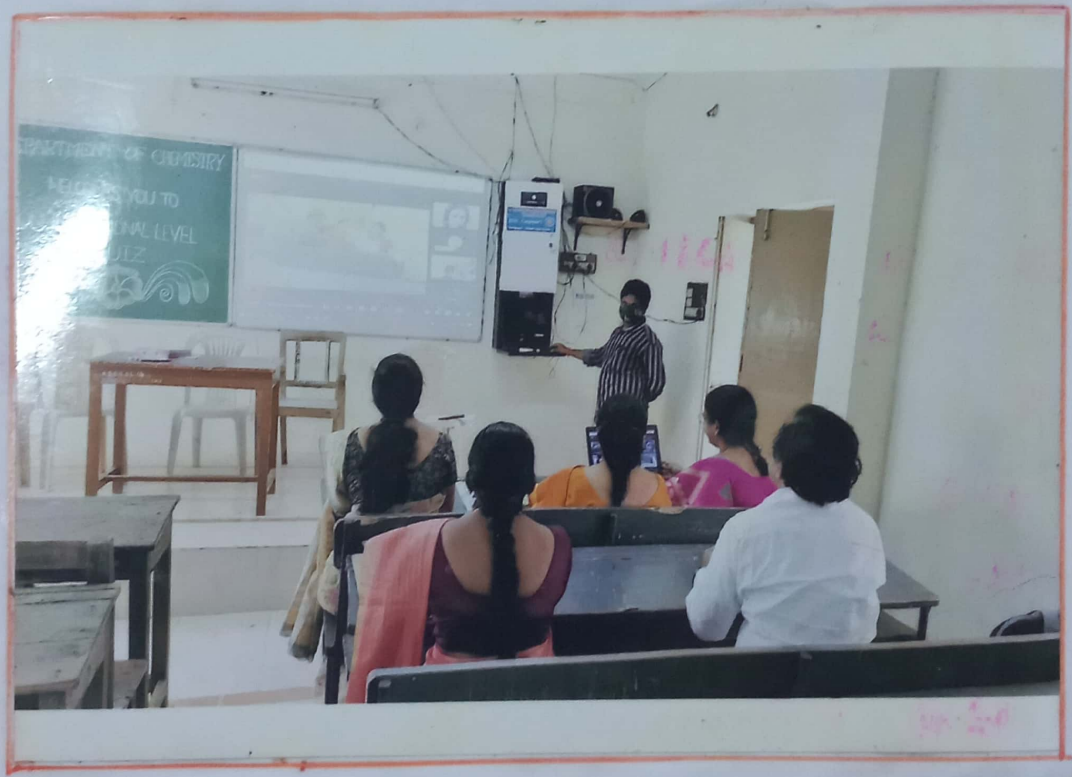
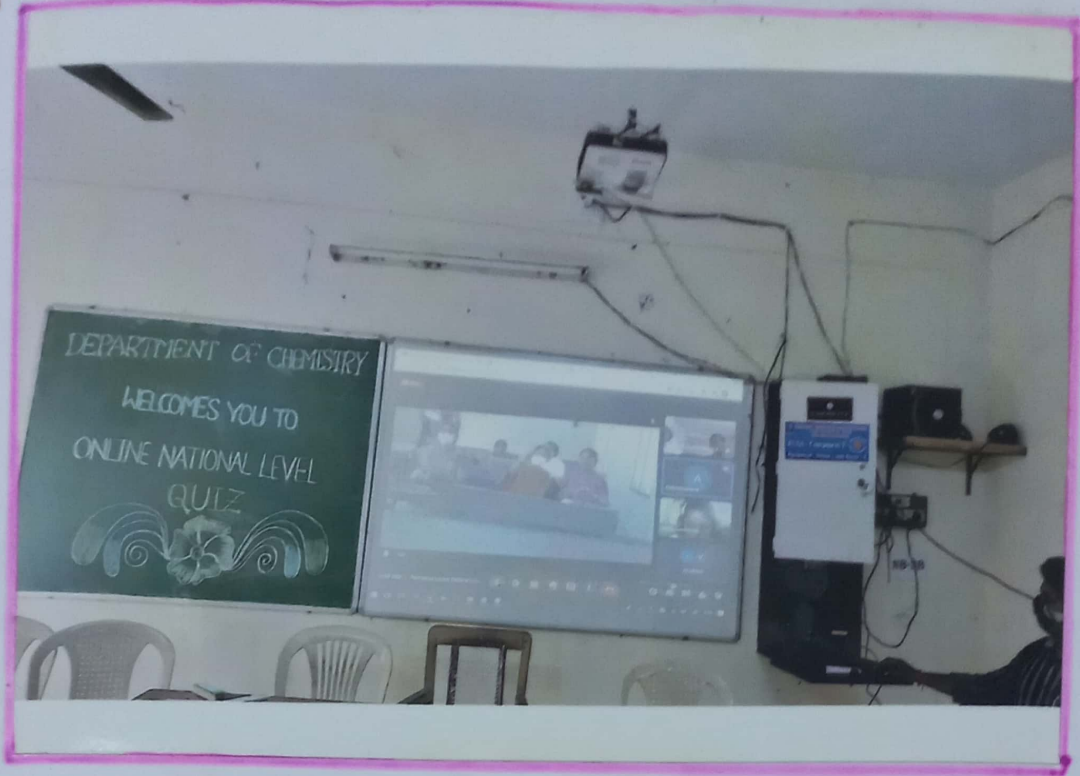
DEPARTMENT OF CHEMISTRY

NCD - 2021



DR. V. ANANTHA LAKSHMI, PRINCIPAL, GOVT. DEGREE FOR WOMEN (A), REPRESENTING THE REPORT OF NATIONAL CHEMISTRY DAY CELEBRATIONS. THE VARIOUS ACTIVITIES THAT HAVE BEEN CARRIED OUT FOR THREE DAYS ARE SUMMARIZED. SHE SAID, FOR THE FIRST TIME IN THE HISTORY OF THE COLLEGE, THE DEPARTMENT OF CHEMISTRY HAS ORGANIZED ONLINE NATIONAL LEVEL QUIZ ON "GENERAL CHEMISTRY."

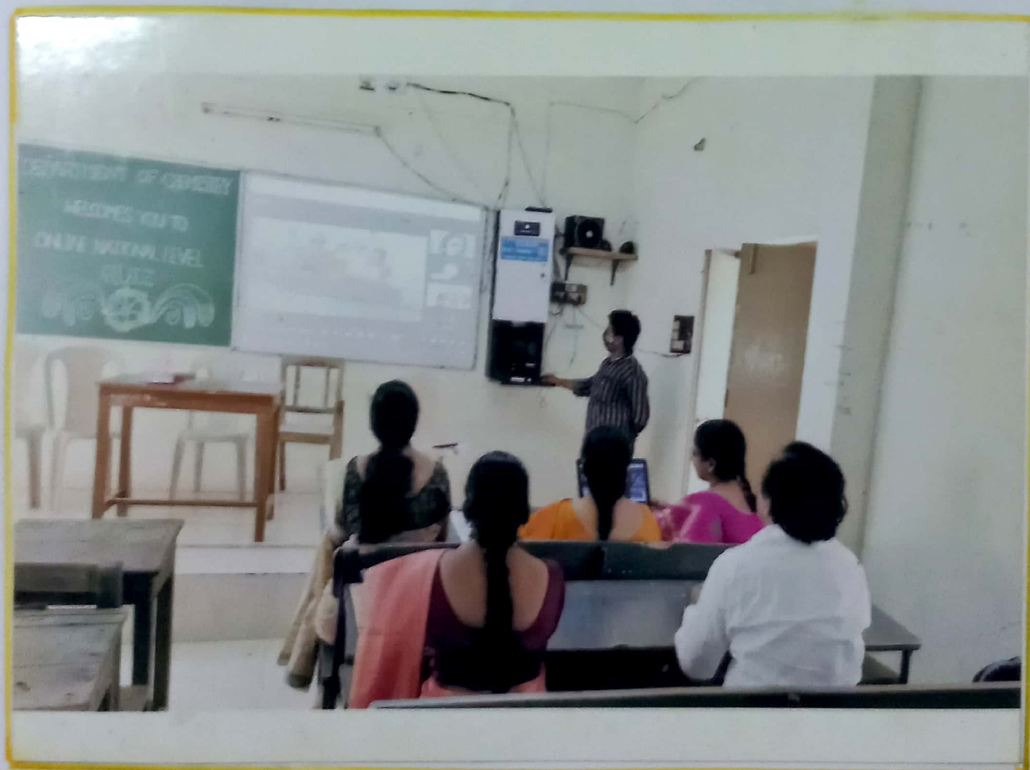
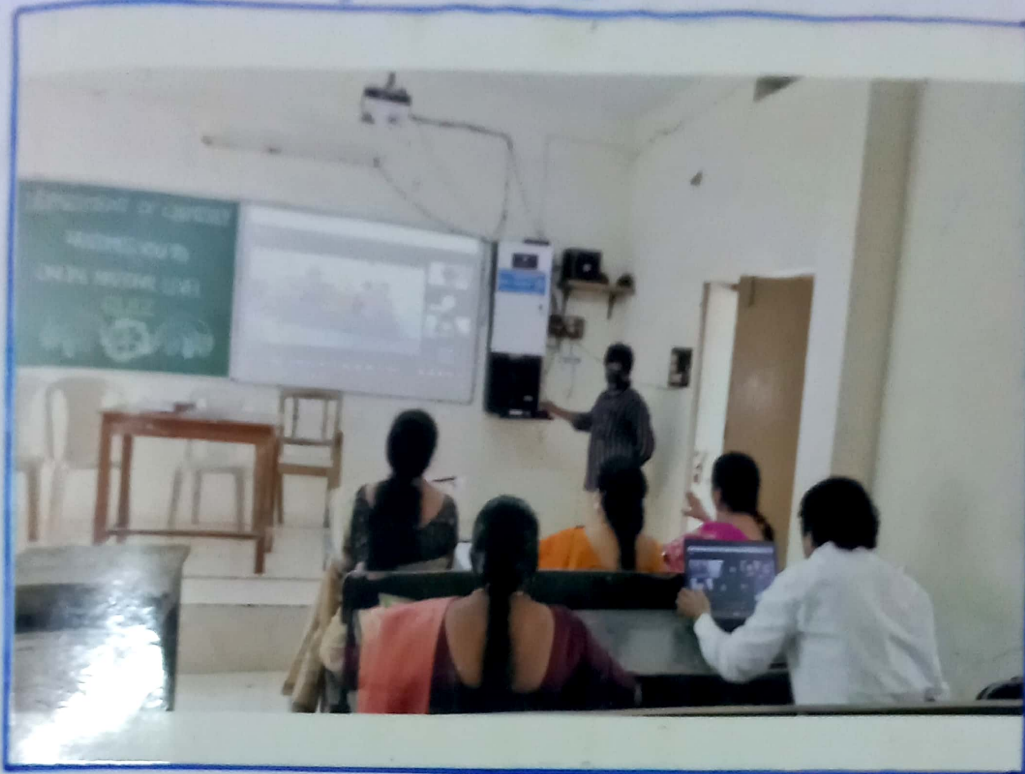
The department of chemistry has organized a National level Quiz in online mode. Since the inception of the college, the first of its kind.



Principal Dr. V. Anantha Lakshmi and Vice-principal Ms. M. Suvarchala along with faculty of chemistry excited to start the Quiz program online.



Mr. V. Mallikajana sharma, head department of chemistry, admitting the participants via google meet. Around students across the country have joined.



Nice-principal, Ms. M. Suvarchala guiding the students to download menti app for joining the quiz and access the meet.

A.S.D. GOVT. DEGREE COLLEGE FOR WOMEN (A)

LAKINADA - DEPARTMENT OF CHEMISTRY - COLLEGE  
LEVEL COMPETITIONS.

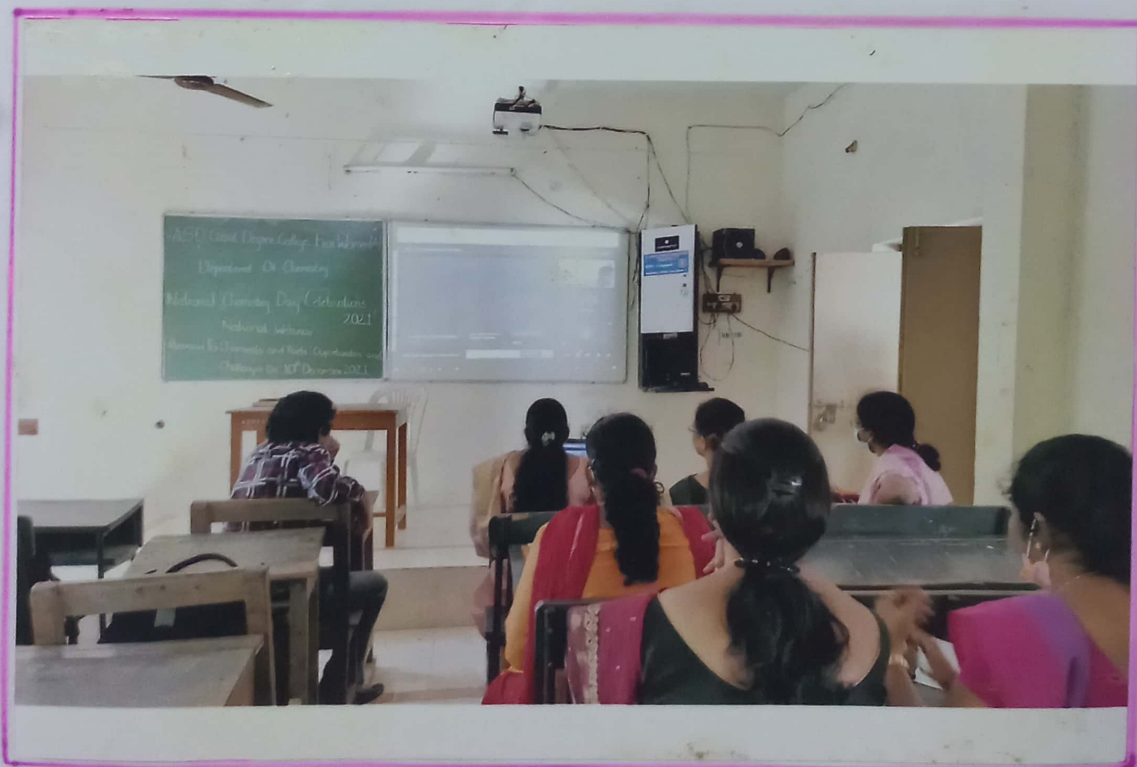
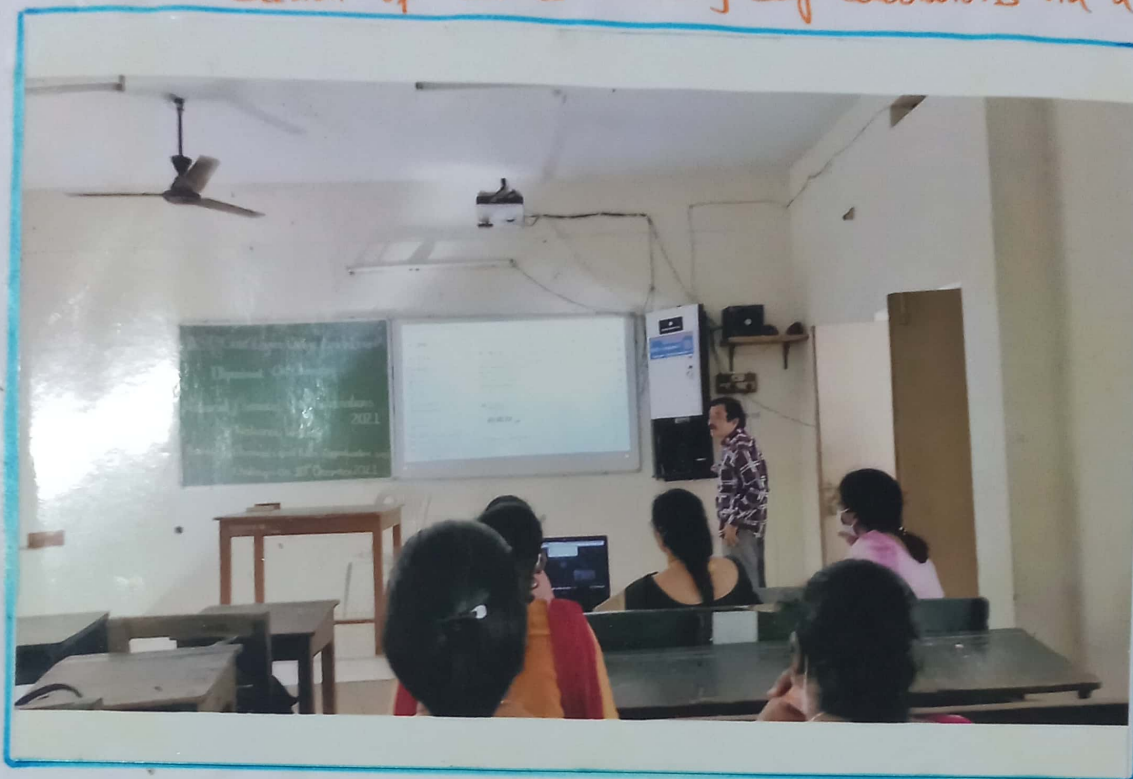


On the eve of National Chemistry Day, 10/12/2021, the department of chemistry has conducted college level competitions on essay writing, elocution and poster presentation. The topics are as follows.

- 1) Essay Writing :-
- 2) Elocution : "Chemistry - our life, our future"
- 3) Poster Presentation:



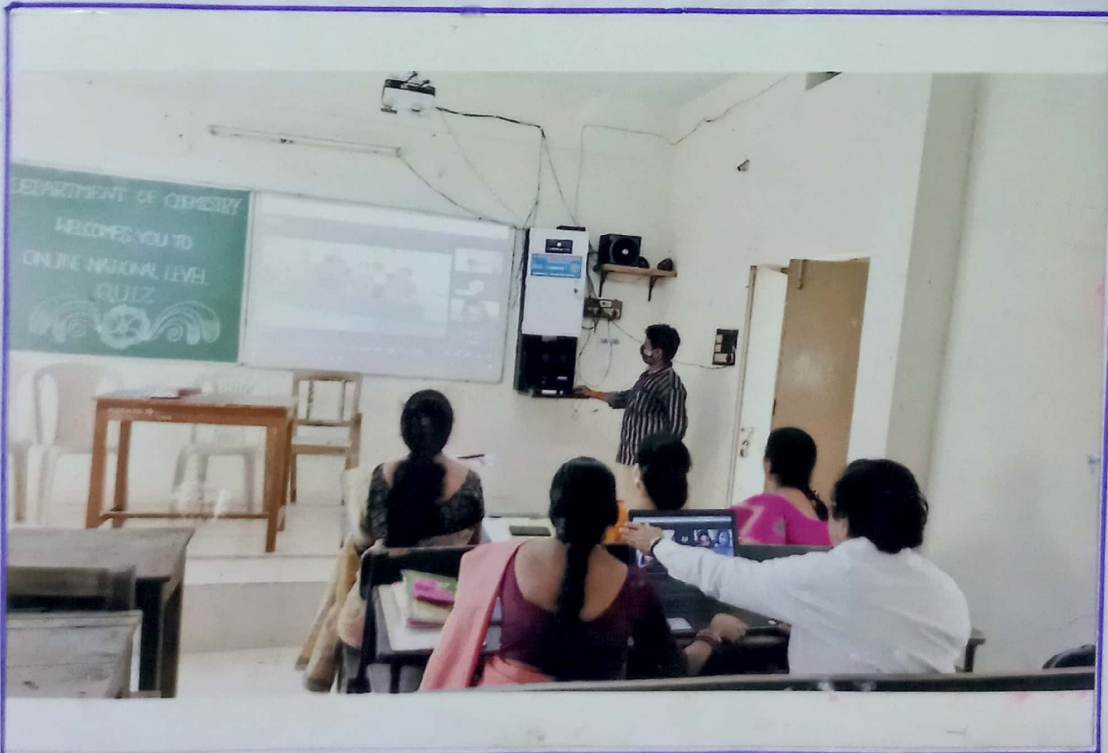
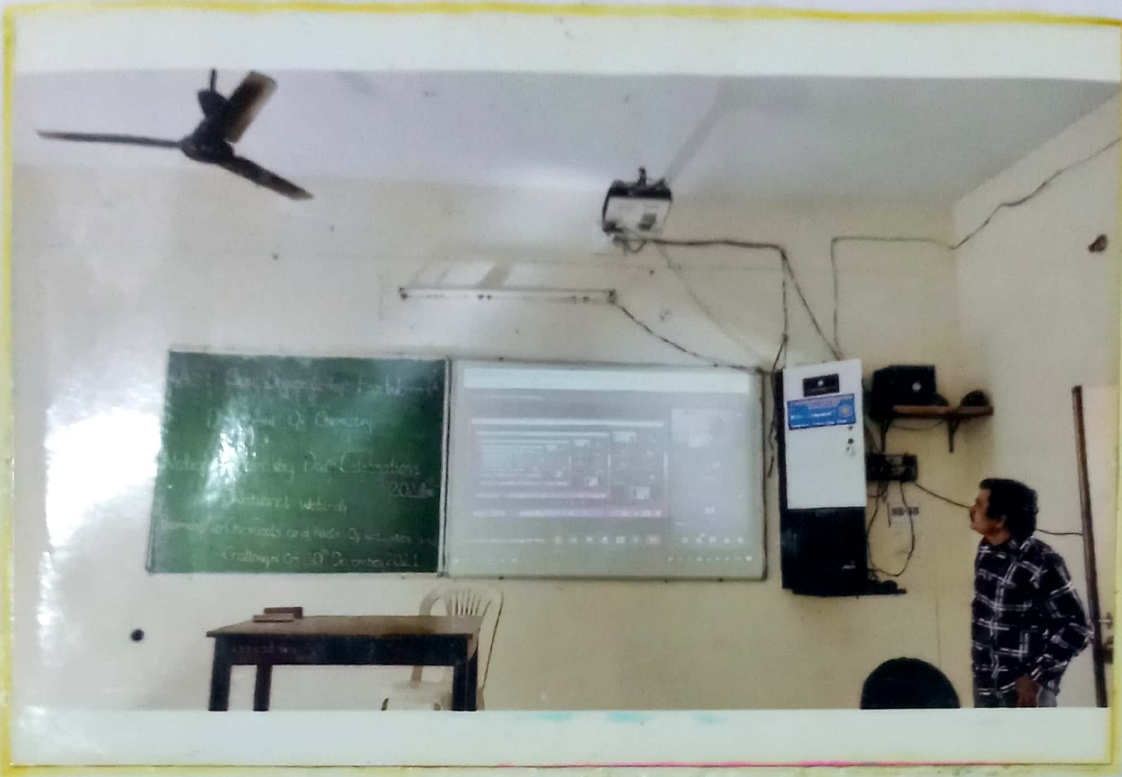
Department of chemistry along with the Principal Dr. V. Anantha Lakshmi and vice-principal Ms. M. Suvarchala attending the inaugural session of National chemistry day celebrations via G-meet.



Participants from various states joining the Google meet for National chemistry day celebrations on Dec-10, 2021.



Mr. V. Mallikarjuna Sharma, greeting all the participants joined via google meet for online national level quiz on "General Chemistry."



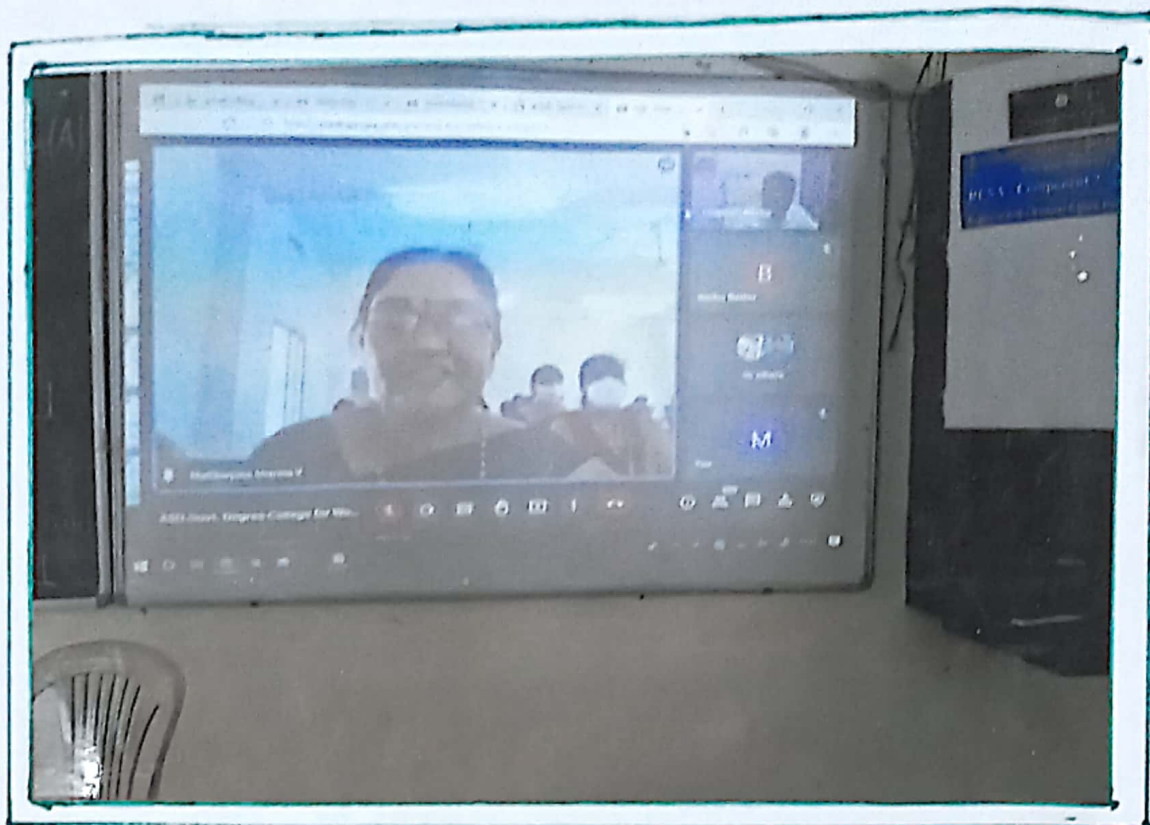
Displaying the questions on mentiapp, the student who answers fast secures more marks.

A.S.D. GOVT. DEGREE FOR WOMEN (A) KAKINADA

DEPARTMENT OF CHEMISTRY

NATIONAL CHEMISTRY DAY CELEBRATIONS

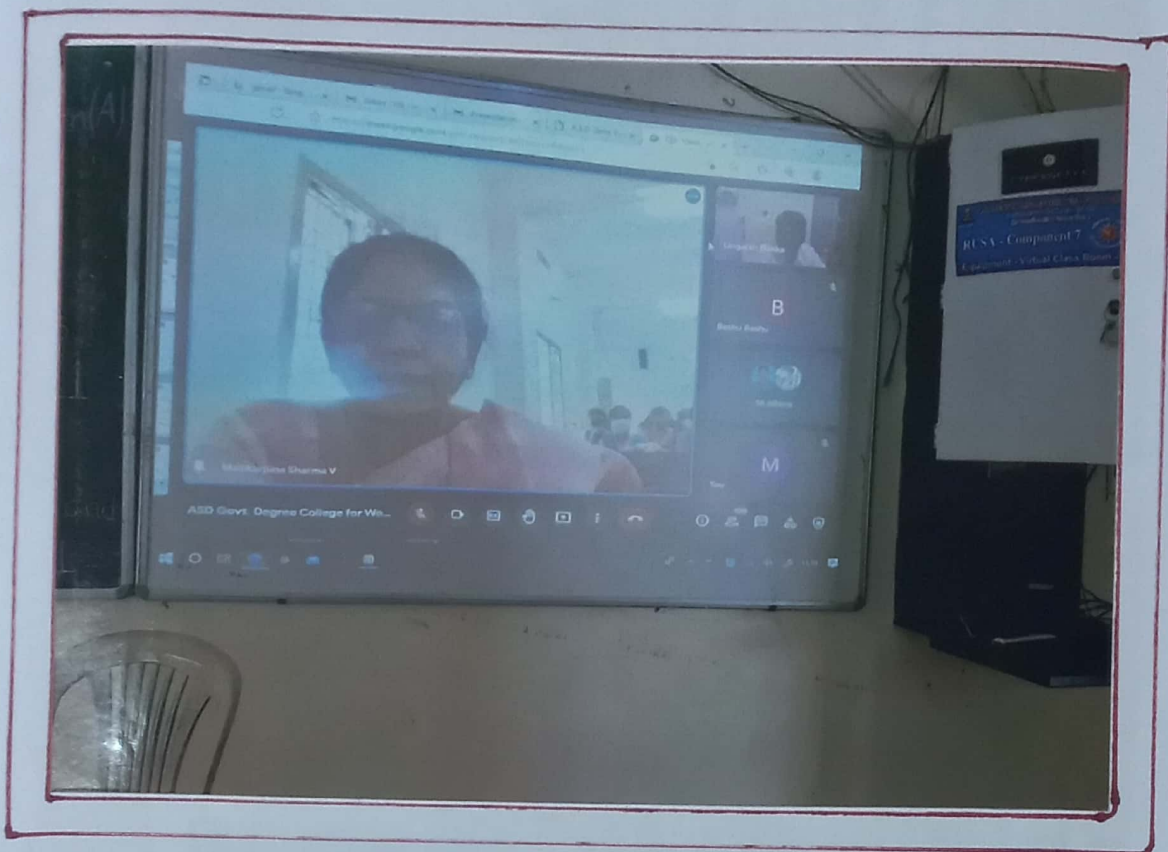
DATE :- 10-12-2021



Dr. V. Anantha Laluhmi, Principal, A.S.D. Govt. Degree College for Women (A), Kakinada addressed the gathering on National Chemistry Day celebrations 2021. via google meet. She congratulated whole heartedly the department of chemistry for organizing such a wonderful event on online, where 153 participants have joined from various states.



Ms. M. Suvarchala, vice-principal, A.S.D. Govt. Degree college for Women (A), Kalkinada gave her comment on this program. She quoted that "Fast or



Slow ..... Chemistry Makes it to Go! ". the theme of National chemistry week 2021. She emphasized the role of chemistry and need of chemistry in day to day life. She wished all the participants to gain sufficient knowledge and disseminate the same to many.

As many number of participants around were registered to join NCD-2022. Display of people who joined.



Dr. V. Ananthalakshmi, Principal, A.S.D. Govt Degree college for Women (A) addressing the participants of NCD celebrations 2022 via google meet.





A glimpse of National level online quiz organised  
in view of National chemistry day celebrations 2021.

ONLINE QUIZ DATE - 07-12-2021



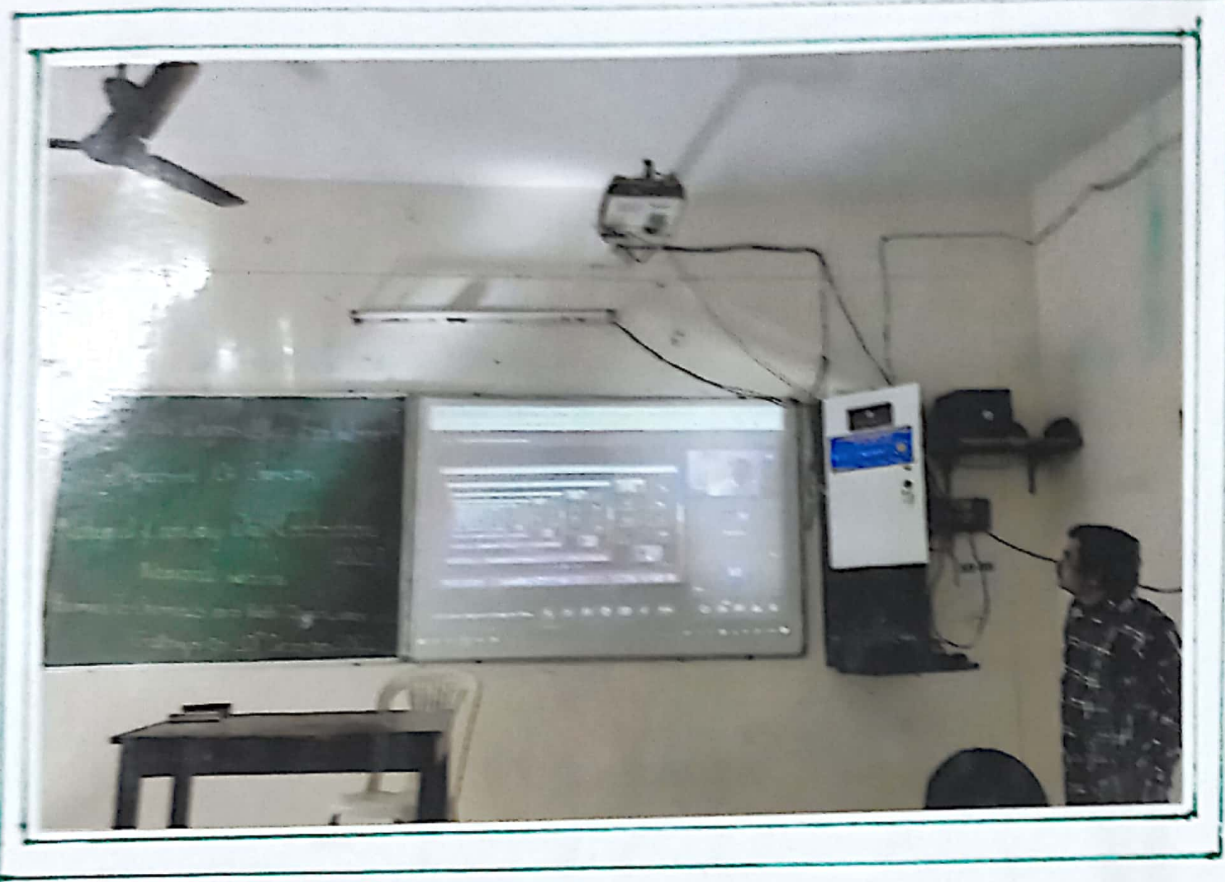
Dr. V. Ananthalakshmi, Principal, welcoming the chief guest.



# A TALK ON "BIOMASS TO CHEMICALS AND FUELS: OPPORTUNITIES AND CHALLENGES."

BY

DR. N. LINGAJAH



An invited talk was arranged as a part of National chemistry day celebrations on 10/12/2021 at 11:00 am by the chief guest of the NCD - 2021 celebrations, Dr. N. Lingiah, Senior Principal scientist & co-chair, Department of Catalysis and Fine chemicals, CSIR-Indian Institute of Chemical Technology, Hyderabad. The invited talk was delivered through Google meet and around candidates participated.



FACULTY AND STUDENTS AT A GLANCE : CHIEF  
GUEST DR. N. LINGIAH ADDRESSING THE GATHERING.



CAPTURED THE AUDIENCE ATTENTION TOWARDS  
THE SIGNIFICANCE OF CHEMISTRY

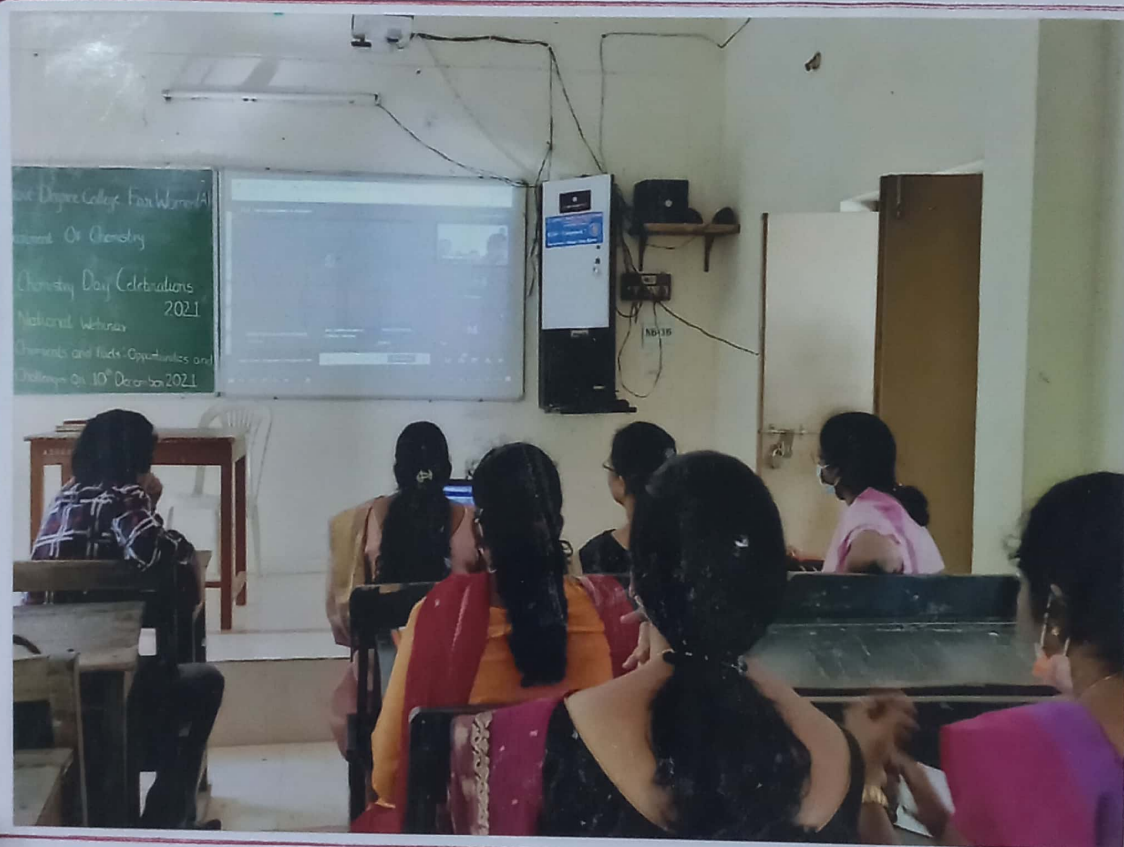


A.S.D. GOVT. DEGREE COLLEGE FOR WOMEN (A)

IKARINADA

DEPARTMENT OF CHEMISTRY

NCD - 2021



THE CHIEF GUEST OF THE FUNCTION DR. N. LIN  
GIAH PRESENTING A PAPER ON "BIOMASS".  
A RENEWABLE ENERGY SOURCE THAT IS DERIVED  
FROM LIVING OR RECENTLY LIVING ORGANISMS.  
IT IS A DEAD ORGANIC MATTER. HE CLEARLY  
ELUCIDATED THE TYPES OF BIOMASS WITH A  
NUMBER OF EXAMPLES AND EMPHASIZED ON THE  
NEED FOR RENEWABLE ENERGY.



# Biomass to Chemicals and Fuels: Opportunities and Challenges

Dr. N. Lingaiah

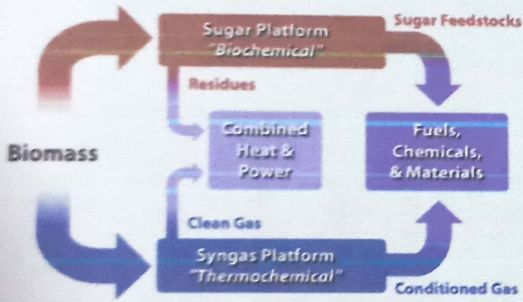
Department of Catalysis & Fine Chemicals

Email: nakalingaiah@iict.res.in

## Advantages of biomass:

- Can be stored
- Provides rural income & employment
- Potentially cleaner than coal for most pollutants
- Can be irrigated and fertilized with sewage water
- Can be cultivated in such a way as to improve the landscape and remediate soils
- Can make use of animal wastes and agricultural residues while providing an effective fertilizer byproduct

## Biorefinery Concept

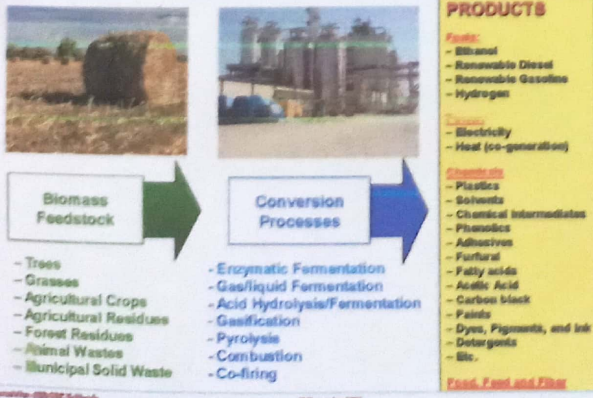


## Uses of biomass



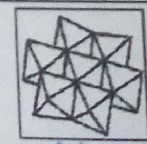
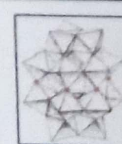
Source: Renewables 2017: Global Status Report

## Biomass to Chemicals/Fuels



## Types of Heteropoly compounds

Types	Molecular formula	Building units	Type of sharing	Central groups
Keggin	$X^{n+}M_{12}O_{40}^{(8-2n)}$	$M_5O_{13}$	Edge	$XO_4$
Dawson	$X_2^{n+}M_{18}O_{62}^{(16-2n)}$	$M_3O_{13}$	Edge	$XO_4$
Anderson	$X^{n+}M_6O_{24}^{(12-2n)}$	$M_2O_{10}$	Edge	$XO_6$

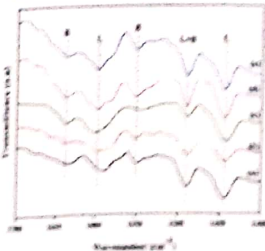


Among these Keggin HPAs are stable and widely used as catalysts



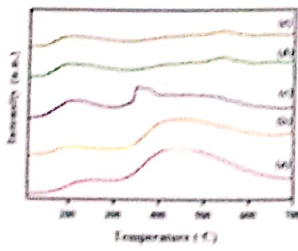
### Characteristics of the catalysts

Pyridine adsorbed FT-IR spectra of catalysts



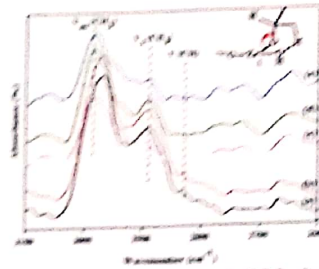
(a) Zeo-zeolite (b) Al-Z-zeolite (c) Fe-Z-zeolite (d) Cu-Z-zeolite (e) Ni-Z-zeolite

CO<sub>2</sub> TPD of the catalysts



Reaction temp: 150, 200, 250 °C  
 Flow rate: 100, 200, 300 ml/min  
 Catalyst weight: 100 mg

### Basicity of the catalysts: Z-zeolite adsorbed FT-IR

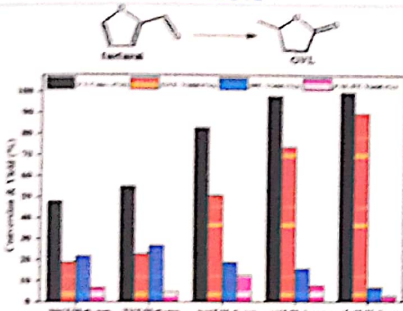


- Zeo-zeolite ..... 2957 cm<sup>-1</sup>
- Al-Z-zeolite ..... 2977 cm<sup>-1</sup>
- Ti-Z-zeolite ..... 2995 cm<sup>-1</sup>
- Ni-Z-zeolite ..... 2995 cm<sup>-1</sup>
- Cu-Z-zeolite ..... 2996 cm<sup>-1</sup>

(a) Zeo-zeolite (b) Al-Z-zeolite (c) Ti-Z-zeolite (d) Ni-Z-zeolite (e) Cu-Z-zeolite

The shift of the ν<sub>2</sub> (CO<sub>2</sub>) band is due to the strong interaction of Z-zeolite with the Lewis sites on catalyst surface.

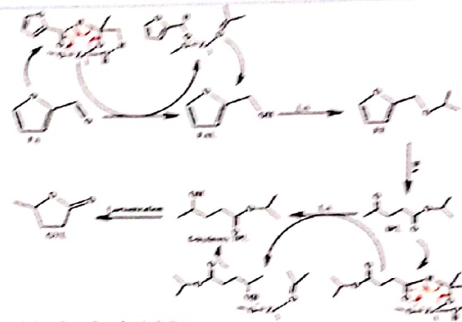
### Catalyst screening for the one pot conversion of furfural to GVL



Reaction conditions: Furfural (0.1 M), Z-zeolite (20 wt%), Temperature (170 °C), Catalyst Weight (150 mg), Time (24 h)

Low conversion of furfural was obtained with Cu-Z-zeolite catalyst. In contrast, Ni-Z-zeolite catalyst exhibited the best reaction.

### Possible reaction mechanism



- Z-zeolite adsorption on the surface under basic
- Reaction of furfural adsorbed species with H<sub>2</sub> under acidic sites on Zeo
- 5-hydroxy furfural is formed on the surface of the catalyst, which is further converted to GVL
- Further desorption of GVL is observed by long reaction time for the catalyst
- Hydrogen transfer takes place in the last step

### Catalyst screening: FA hydrogenation to THF



Catalyst	FA Conv. (%)	THFAL Yield (%)	FAL Yield (%)	THF Yield (%)
MPPV <sub>2</sub>	90	51	25	10
PdMPPV <sub>2</sub>	95	75	6	11
PdMPPV <sub>2</sub> /ZrO <sub>2</sub>	100	93	3	0
PdMPPV <sub>2</sub> /TiO <sub>2</sub>	98	76	19	0
PdMPPV <sub>2</sub> /SnO <sub>2</sub>	100	83	14	3
PdMPPV <sub>2</sub> /NiO <sub>2</sub>	95	72	19	2
PdMPPV <sub>2</sub> /CuO <sub>2</sub>	97	66	69	0

Reaction conditions: Furfural (0.1 M), H<sub>2</sub> pressure 2.5 MPa, catalyst 0.2 g, Z-zeolite 0.2 g, temperature 150 °C

### Optimization of reaction conditions

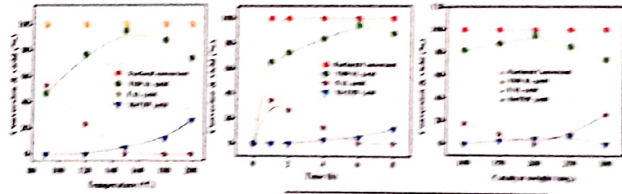


Table 1. Reaction Parameter Optimization

Order	Reaction Parameter	Optimised Value
1	Reaction Temperature	120 °C
2	Reaction Time	6 h
3	Catalyst weight	100 mg
4	H <sub>2</sub> pressure	2.5 MPa



### ZrP-supported tungstophosphoric acid catalytic fructose conversion to ethyl levulinate

**Series of catalysts prepared**

- ZrP
- 5%TPA/ZrP
- 10%TPA/ZrP
- 15%TPA/ZrP
- 20%TPA/ZrP
- 25%TPA/ZrP
- 30%TPA/ZrP

### Reaction mechanism

**Scheme: Reaction mechanism for the preparation of EL from glucose & fructose**

### Screening of the catalysts

Catalyst	Fructose Conv. (%)	EMF Yield (%)	EL Yield (%)	Total acidity (mmol/g)
TPA	100	18	61	2.03
ZrP	47	11	19	1.230
5% TPA/ZrP	69	21	25	1.345
10% TPA/ZrP	74	24	32	1.468
15% TPA/ZrP	86	22	38	1.480
20% TPA/ZrP	90	16	42	1.665
25% TPA/ZrP	100	7	54	1.695
30% TPA/ZrP	100	15	47	1.476

The yield of EL was depended on of acidity of the catalysts.

N. Lingmah et al., Molecular Catalysis, 448 (2018) 108-115

### Optimization of reaction conditions

#### Effect of catalyst weight

#### Effect of temperature

#### Effect of reaction time

#### Reusability of the catalyst

Entry	Reaction Parameter	Optimum Value
1	Reaction temperature	140°C
2	Reaction time	1h
3	Catalyst weight	5.0%
4	Ethanol volume	5 mL

### Modification of Heteropoly acids: Influence on acid catalyzed reaction

Reaction	Catalyst used	Acidity (mmol/g)	Yield (%)
Fructose to 5-ethyl methylfurfural	TiTPA/SnO <sub>2</sub> , SnSTA/SBA-15	0.41, 0.82	72%
Fructose to Ethyl levulinate	TiTPA, TPA/ZrP	2.11, 1.69	65%
Fructose to 5-hydroxymethylfurfural (HMF)	ZrO <sub>2</sub> /TPA/H-β-Zeolite, ZrO <sub>2</sub> /TPA/SBA-15	1.67, 1.28	90%
Fructose to 2-ethyl-2-butanol	PdMPPAV/Al <sub>2</sub> O <sub>3</sub>	1.313	95%
Fructose to Alkyl levulinate	TiTPA, ZnTPA/Nb <sub>2</sub> O <sub>5</sub>	2.21, 0.90	97%

### Conclusions

- ✓ Biomass is a rich source to produce chemicals and fuels
- ✓ Design of selective catalysts is the key in biomass valorization
- ✓ Heteropoly acids like TPA, STA can be readily modified in their secondary structure with different metal ions
- ✓ The strength and nature of acidity mainly depends on the exchangeable metal ion and also support
- ✓ Acid or neutral supports are suitable supports for heteropoly acids. Mesoporous supports are better supports to enhance the surface area of the catalysts
- ✓ Depending upon the nature of reaction one can tune the properties of heteropoly acids by modification in their primary, secondary structures

## Keggin Heteropoly acids: Molecular Solids

**Keggin general formula:**  $X^m[M_{12}O_{40}]^{n-}$

**Primary structure:**  $H_2[M_{12}O_{40}] \cdot n H_2O$

**Criteria for addenda atoms:**

- High charge (+5 or +6) and small size
- ionic radius:  $0.53 \text{ \AA} < r < 0.70 \text{ \AA}$
- Expandable coordination number from 4 to 6
- Ability to form double bonds with unshared oxygen atoms

**central atom:** P, Si, B  
**addenda atom:** Mo, W or V

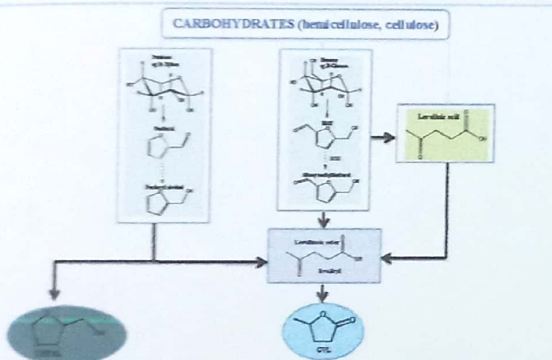
The Keggin ion consists of a central cation (P, Si) that is surrounded by 12 metal oxide cations.

Each metal oxide possesses one terminal M=O bond, 4 bridging M-O-M bonds and one long M-O-P bond.

## Modification of Keggin Heteropoly acids

- Incorporation of metal ions in to Keggin ion structure:**  
eg:  $H_2PW_{11}M_1O_{40}$  M = V, Nb, Bi, Sb
  - Exchange of metal ions**  
(a) Metal ion eg: Cu, Ag, Al, Fe  
(b) Salts eg:  $NH_4^+$ ,  $Cs^+$
  - Incorporation of metals & exchangeable protons!**  
eg:  $CuH_2PW_{11}V_1O_{40}$ ;  $FeH_2PW_{11}V_1O_{40}$
  - Incorporation of Keggin HPA into the pores of mesoporous materials:**  
eg:  $H_2PW_{12}O_{40}$  supported on SBA-15, COK-12 etc. Mesoporous material
- 

## Modified heteropoly acid catalysts: Biomass to chemicals



## Sn exchanged STA supported on SBA-15: Etherification of fructose

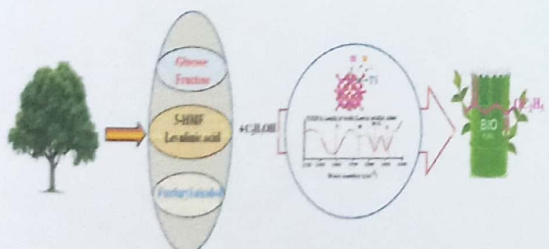
**Reaction:** Fructose  $\rightarrow$  5-ethoxy methylfurfural  $\rightarrow$  ethyl levulinate

Conversion	Product Yield (%)	5-EMF Yield (%)	Yield (%)	Yield (%)
STA/SBA-15	100	26	18	29
Sn/SBA-15	32	8	7	2
Sn <sub>2</sub> /STA/SBA-15	92	44	31	12
Sn <sub>4</sub> /STA/SBA-15	96	34	48	4
Sn <sub>6</sub> /STA/SBA-15	100	-	54	15
Sn <sub>8</sub> /STA/SBA-15	100	-	56	31

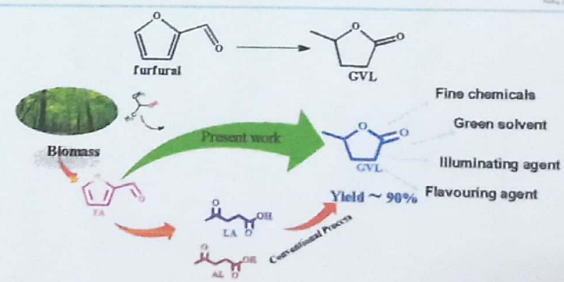
Reaction conditions: Fructose 180 mg, Catalyst: 1.6 wt%, Ethanol: 4 mL, Temperature: 140 °C, time: 3 h.

The high yields of EMF depended on the amount of Sn exchanged with the protons of STA.

## One pot selective conversion of biomass derived chemicals into alkyl levulinates



## One pot conversion of furfural to $\gamma$ -valerolactone: $ZrO_2$ /TPA/H- $\beta$ -Zeolite catalysts





ONLINE REGISTRATIONS FOR THE PARTICIPATION

OF NATIONAL LEVEL ONLINE QUIZ AND

NATIONAL LEVEL WEBINAR

NAME OF THE STUDENT	GENDE R	CLASS STUDYIN G/	GROUP	NAME OF THE INSTITUTION	CITY	PIN CODE	STATE	MOBILE NUMBER
K.Prabhakar	MALE	Bsc final year	BZC	Silver jubilee government college (A) kurnool	Kurnool	518002	Andrapradesh	8688789817
Ayan Koner	MALE	B Sc	Chemistr y Honours	Banwarilal Bhalotia College, Asansol	Durgapur	713148	West Bengal	7318850191
Ganesh	MALE	Degree 3rd year	B.sc	P.s.g.d.c ....penukonda	Penukonda	515123	Andhra Pradesh	9441387436
Jitendra sahu	MALE	Msc 1st year	Chemistr y	G.N.A PG COLLEGE BHATAPARA	Bemetara	491340	Chhattisgarh	9174388698
CH Ramakrishna	MALE	1st year UG	BZC	GDCMEN,srikakulam, Andhrapradesh	Srikakula m	532001	Andhra Pradesh	+916302933576
M. Manipriya	FEMALE	III B. Sc	MPC	ASD Govt degree college for women	kakinada	533002	Andhra Pradesh	9542143977
R Nagalakshmi	FEMALE	III B. sc	MPC	AsDGDC	Kakinada	533002	Andhra Pradesh	9347917245
ALLURI VARSHITA	FEMALE	B. Sc	MPC	A S D GOVT DEGREE COLLEGE FOR WOMEN	KAKINA DA	533002	ANDHRA PRADESH	7601085021
P. Ananthalakshmi	FEMALE	IIIBSC	MPC	ASD govt degree college for women	Kakinada	533002	Andhra Pradesh	9505505706
KASIPU MANIKANTA	FEMALE	B. SC	MPC	A S D GOVT DEGREE COLLEGE FOR WOMEN	KAKINA DA	533002	ANDHRA PRADESH	9398739673
Vanka. Haritha	FEMALE	I BSC	Mpc	ASD GOVT DEGREE COLLEGE FOR WOMEN	KAKINA DA	533002	ANDHRA PRADESH	9392648144
VASAMSETTI JAGADEESWARI	FEMALE	III B.SC	MPC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINA DA	533002	Andhra Pradesh	9505605429
DOMA MAHESWARI	FEMALE	B.Sc	MPC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINA DA	533002	Andhara pradesh	9908272998



SASIKUMAR A	MALE	3rd BSC	CHEMISTRY	KARAN ARTS AND SCIENCE COLLEGE	THENMA THUR, THIRUVAN NAMALA I	606603	Tamil Nadu	8807332388
Chinnanagari parimala	FEMALE	Degree	B.sc(B.Z. C)	Government degree college for women, madanapalli	Madanapalli	517325	Andhra pradesh	9704337898
AKILESWARAN S	MALE	3rd CHEMISTRY	BSC CHEMISTRY	KARAN ARTS AND SCIENCE COLLEGE	THENMA THUR THIRUVAN NAMALA I	606603	Tamil Nadu	63856 64257
Chekka.Raja Rajeswari	FEMALE	Degree 3rd year	Pharmaceutical chemistry	P.R.G.C	Kakinada	533002	Andhra Pradesh	9652891358
Gummididi.Bhanu Akshay	MALE	Degree 3rd year	Pharmaceutical chemistry (bvoc)	P.R.G.C	Kakinada	533001	Andhrapradesh	7993090682
S N INDRANATH	MALE	DEGREE	BSC	UNIVERSITY	NAGARI	517592	ANDHRA PRADESH	9182603946
P.SANTHI KUMARI	FEMALE	III B.Sc MCCs	B.Sc.MC Cs	PR govt College kakinada	Kakinada	533463	Andhra Pradesh	9182602909
Kada.Divyaasree Durga	FEMALE	BSC 3rd year	Mccs	PR Govt college (Autonomous) kakinada	Tallarevu	533463	Andhara Pradesh	8186961902
M.V.K.Bhagyasri	FEMALE	BSC 3rd year	MCCS	P.R.Govt. college	Kakinada	533004	Andhra Pradesh	8790411223
T Srikrishna	MALE	Bsc 3 year	MBC(microbiology)	PVKN government degree College (A)	Chittoor	517419	Andra Pradesh	9390123919
KATIKAM SIVA PRASAD	MALE	Degree final year	B.Sc	GOVT DEGREE COLLEGE	RAJAMPETA	516115	ANDHRA PRADESH	9703782937
ARTHUR DIVYA	FEMALE	Degree final year	Bsc BHC	PVKN Govt.(A) Degree College, chittoor.	Chittoor	517002	Andhra Pradesh	7680006577



Rashmitha Maddimsetti	FEMALE	Third BSC BCZ	BCZ	Sri DNR Government Degree College For Women.	Palakollu.	534260	Andhra Pradesh.	9491758759
Yadla Usharani	FEMALE	Degree 1st year- 2nd Sem	MPC	Govt Degree College ( Men's)	Srikakulam	532484	AndhraPradesh	9502822387
Janarthanan V	MALE	M.Sc	Chemistry	JKKN college of arts and science College	Komarapalayam, Namakkal, Tamil Nadu.	638183	Tamilnadu	9047237094
MAHESHWARI T	FEMALE	Msc chemistry	Chemistry	J. K. K. Nataraja college of arts and science komarapalayam, Namakkal	Salem	636454	Tamilnadu	6380726233
Dharani V	FEMALE	2nd M.Sc Chemistry	Chemistry	J.K.K.Nataraja College of Arts and Science	Salem	637303	Tamilnadu	9345751144
Pathivada Pavani	FEMALE	Bsc	MPC	Silver jubilee government degree college, kurnool	Kurnool	518002	Andhra Pradesh	9652108587
PISINI DURGA PRASAD	MALE	Bsc	MPC	AP RESIDENTIAL DEGREE COLLEGE	VIJAYAPURI SOUTH	522439	Andhra Pradesh	9490867342
INDUKURI SURYA NITHISH VARMA	MALE	3rd year	B.Sc[M.P.C]	Government degree college	Seethanagaram	533287	Andhra pradesh	9885056507
CH VAINAVI	FEMALE	B. Sc	CBZ	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINADA	533002	ANDHRA PRADESH	8985462777
Y SAI NIKITA	FEMALE	B. Sc	MPC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINADA	533002	ANDHRA PRADESH	9133938767
G NAVYA	FEMALE	B. SC	MPC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINADA	533002	ANDHRA PRADESH	6300336384
M MALINI	FEMALE	B .SC	MPC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINADA	533002	ANDHRA PRADESH	7989793903
K SANDHYA	FEMALE	B. SC	MPC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINADA	533002	ANDHRA PRADESH	8688199090
P LAVANYA	FEMALE	B. SC	MPC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINADA	533002	ANDHRA PRADESH	9492356275

K NEELAVENI	FEMALE	B. SC	MPC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINA DA	533002	ANDHRA PEADESH	8106439334
D RATNAM	FEMALE	B. SC	MPC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINA DA	533002	ANDHRA PRADESH	9491399487
Kothuru srinivasu	MALE	Degree	Bsc comp	Govt degree college	Mandapeta	533308	Andhra pradesh	9701261316
P PUSHPA LATHA	FEMALE	B. SC	AQUAZC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINA DA	533002	ANDHRA PRADESH	9100560396
Malladi sudhasri	FEMALE	1st bsc	Mpc	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINA DA	533002	Andhrapadesh	8790030498
K RAMYA KUMARI	FEMALE	B. SC	CBMB	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINA DA	533002	ANDHRA PRADESH	9652311401
Bikkavolu Suvama kumari	FEMALE	Bsc(MPC) final year	MPC	DRG govt degree college tadepalligudem	Pentapadu	534166	Andhra pradesh	9652311401
SETTI MANIRATNAM	MALE	DEGREE	BSC	GOVERNMENT	MANDAPETA	533308	ANDHRA PRADESH	7993407494
P SELSHI	FEMALE	B. SC	CBMB	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINA DA	533002	ANDHRA PRADESH	6301440876
Pamarthi Devi Sri prasad	MALE	Degree	Bsc	Govt degree collegr	Mandapeta	533308	Andhra pradesh	7330714176
N USHA RANI	FEMALE	B. SC	AQUAZC	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINA DA	533002	ANDHRA PRASEH	9603758979
Nallamilli Meena Sai Prasanna	FEMALE	Bsc MBC 3rd year	Bsc MBC	Aditya Degree college for women,kakinada	Kakinada	533005	Andhra Pradesh	6302118366
Keerthi Nelli	FEMALE	Bsc Third year	Mbc	Aditya degree college for women	Kakinada	533004	Andhra Pradesh	8008565665
Lanka Jnaneswari	FEMALE	Bsc 2 year	Mpc	Aditya degree college for women	Kakinada	533003	Andhra Pradesh	8977799592
Durga Praveen Botcha	MALE	III B.Sc	MCCs	AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE	Vuyyuru	521165	Andhrapadesh	8179989961
G.D.N.S.S.Sowjanya	FEMALE	Bsc 2 year studying	Mpc	Aditya degree college for women's _kakinada	Kakinada	533003	Andhra pradesh	9949488109
V.l.n.s chandrika	FEMALE	B.se 2nd year	MPC	Aditya degree college for women's	Kakinada	533003	Andhra Pradesh	6302455963



Varri.mamatha	FEMALE	Bsc . MBC 3 rd year	Bsc MBC	ADITYA DEGREE COLLEGE FOR WOMEN	KAKINA DA	533001	ANDRAPRADESH	9390605375
Oleti Veera veni	FEMALE	Degree 3rd	B.sc MBC	Aditya degree college for women	Gadimoga	533463	Andhra pradesh	9392385836
Pragada.mohini.sai	FEMALE	bsc(bzc)	Bzc	G.D.C.seethanagaram	Seethanag aram	533287	Andhra Pradesh	8074591010
Ch. Sahithi	FEMALE	3 rd Bsc	Bzc	Government degree College tuni (A)	Tuni	533401	Andrapradesh	7672051381
D.naga.lakshmi	FEMALE	3 rd bsc	3 rd BZC	Government degree College (A) tuni	Tuni	533401	Andra Pradesh	9390485764
D. Yashoda.kanaka.durga	FEMALE	3 rd Bsc	3rd Bzc	Government degree college (A) Tuni	Tuni	533401	Andhrapradesh	9666201685
G.H.VL.Phaneendra	FEMALE	III B.Sc	CZAqt	ASD GOVERNMENT COLLEGE FOR WOMEN	KAKINA DA	533002	Andhra pradesh	9441327744
Sahitha Vangalapudi	FEMALE	Degree 3rd year	BBC	Aditya Degree College for Women, Kakinada	Kakinada	533001	Andhra Pradesh	9182855930
P.VAISHNAVI	FEMALE	Degree third year	BSC (BZC)	PVKN GOVERNMENT NAAC A DEGREE COLLEGE	Chittoor	517002	Andhra Pradesh	9491394638
L.v.v.Ravindra	MALE	Degree	CBZ	Government degree College maredupaka	Mandapeta	533308	Andhra Pradesh	9515877283
Pedapati. Uma Satya Durga Devi	FEMALE	I BSC Chemistry	MPC	Government Degree College , maredupaka	Mandapeta	53308	Andhrapradesh	9963322581
K.Roshini	FEMALE	Degree 3rd year	Bbc	Aditya degree college for women	Pithapura m	533450	Andhra Pradesh	9494782456
SUNITHA	FEMALE	Degree 3rd year	Bsc. MPC	Kvr, kvr and Mkr college	Khajipalea m	522329	AP	8143928033
Payyavula mahesh	MALE	BSC MPC final year	Mpc bsc	SRR CLG KARIMNAGAR	Manchirial	505001	Telangana	9381843267
Uddandi Lalitha Devi	FEMALE	Degree 2nd year	Bsc (Mpc)	Government Degree college Mandapeta	Mandapeta	533308	Andhra Pradesh	9347046455
PRASHANT SUBHASH VIRKAR	MALE	Ty Bsc	Chemistr y	Annasaheb Vartak College Vasai	Vasai	401201	Maharashtra	7517611890

Koppiseti Durgaprasad	MALE	Degree final year (3rd-Bsc)	Bsc (mcp)	PR government college (A)	Kakinada	533005	Andhra Pradesh	7286970142
GUDIMALLAM HARIPRIYA	FEMALE	Third year BZC	BSc.BZC	PVKN Government Degree College	Chittoor	517001	Andhra Pradesh	8464968620
CHERUKURI HARIKA	FEMALE	DEGREE MPC Final year	BSC MPC	KVR KVR AND MKR COLLEGE,KHAJIPALEM	Bapatla	522329	ANDHRAPRADESH	7673933574
k.Lalitha	FEMALE	1BSc mpc	1 BSc mpc	Government Degree College	Teki	533307	Kavuri vari palem bridge	7013940792
G.Gangothri	FEMALE	3rd year	Mpc	Government degree college	Tuni	533401	Andhrapradesh	9666750637
Yamuna Kumari chollangi	FEMALE	Bsc 2 nd year	Bsc(mpc)	Adhi kavi nannaya university (AKNU)	Mandapeta	533308	Andhra pradesh	9182620736
K.Reshma	FEMALE	3 rd BSc	BZC	PRGC	KAKINA DA	533001	Andhra pradesh	8919486308
Chollangi Yamuna Kumari	FEMALE	Degree 2nd Year	BSC [ MPC ]	Government Degree College , Mandapeta	Mandapeta	533308	Andhra Pradesh	9182620736
Didla mani	FEMALE	Bsc chemistry 1 st year	Mpc	Government degree college	Mandapeta	533308	Andhrapradesh	8688528225
Kadim Lalitha Devi	FEMALE	3rd Bsc	MPC	Aknu	Ganapavaram	534198	Andhrapradesh	8185828437
M.Sri Manjunadh	MALE	III BZC (E.M)	BSc BZC	P.R degree collage kakinada	Kakinada	533001	Andhra Pradesh	9133243676
Krishna Harshitha Dandumenu	FEMALE	3rd year B.Sc.	BZC	PRG(A) Government degree college	Kakinada	533005	Andhra Pradesh	8247090416
PITTU SRIKANTH REDDY	MALE	Ug final year	(M. P. C)	K. V. R, K. V. R, &M.K.R COLLEGE KHAJIPALEM	Guntur	522314	Andhra Pradesh	8341952754
KANIMOZHI C	FEMALE	III year	B.Tech Chemical Engineering	Nandha Engineering College	Erode	638052	Tamil Nadu	8754002281



Udatha.Satya Durga	FEMALE	Degree 1st year	Bzc	Government degree college Maredupaka	Yeditha seethanagar	533234	Andhra Pradesh	9963491567
Charuhasini	FEMALE	Msc	Organic chemistry	Kbn college	Vijayawada	520001	Andhra Pradesh	8500041299
Narendra Moka	MALE	MSc 2nd yr	Organic chemistry	K.B.N College	Vijayawada	520001	Andhra Pradesh	8897460195
Satish	MALE	Msc	Organic chemistry	KBN college	Vijayawada	520001	Andhra pradesh	9390538031
Pavan Kumar yandrapragada	MALE	Msc 2nd yr	Analytical chemistry	KBN PG college Vijayawada	Vijayawada	520001	Andhra Pradesh	7601031911



Salutation	Full Name (in Block Letters)	Class Studying/Studied	Admission Number	Name Of the Institute	City	State	Whether initiatives like this type of Quizzes should be organized in the coming future or not?	Do you think that this Quiz will help in enhancing your interest in Chemistry?	After the Participating Online Quiz Program, how did you feel?	Overall rating	Comments (If any)
Mr.	AYAN KONER	B.Sc (Chemistry Honours)	G-688834 9/20	Banwarilal Bhalotia College, Asansol	Durgapur	West Bengal	Yes	Yes	Excellent	5	too much good. It's helps us for future prospects.
Ms.	KANIMOZHIC	III YEAR - CHEMICAL	19CT10 14	NANDIA ENGINEERING COLLEGE	BRODE	TAMILNADU	Yes	Yes	Very Good	4	Nil
Mr.	PAYYAVULA MAHESH	BSC MPC final year	2E+13	SRIRAJA RAJESWARA ARTS AND SCIENCE COLLEGE	Karimnagar	Telangana	Yes	Yes	Good	3	The way conducting quizzes that improves the quest on chemistry of students
Ms.	Krishna Harshutha Dandamenu	3rd year B.Sc.	2E+06	PR(A) Government degree college	Kakinada	Andhra Pradesh	Yes	Yes	Good	3	
Ms.	POOJARI VAISHNAVI	Degree third year	7869	PVRN GOVERNMENT NAAC A DEGREE COLLEGE	Chittoor	Andhra Pradesh	Yes	Yes	Excellent	5	No comments
Ms.	Chekka sabithi	3rd bze (bsc)	8298	Government degree College tuni (A)	Tuni	Andrapradesh	Yes	Yes	Excellent	5	Awesome
Mr.	VARMA	B.Sc[M.P.C]	2114	Government degree college	Seethanagara m	Andhra Pradesh	Yes	Yes	Excellent	5	

FEEDBACK

FEEDBACK GIVEN BY THE STUDENTS AND STAFF OF VARIOUS COLLEGES, WHO PARTICIPATED IN BOTH NATIONAL LEVEL ONLINE QUIZ ON 07-12-2021 AND NATIONAL LEVEL WEBINAR CONDUCTED ON 10-12-2021 IN VIEW OF NATIONAL CHEMISTRY DAY CELEBRATIONS 2021.





Ms.	M.V.K BHAGYASRI	3rd BSC (MCCS)	63912	P.R.Government degree college	Kakinada	Andhra pradesh	Yes	Yes	Excellent	5	This quiz programme helped us a lot to improve our skills and compitative spirit as well.Thank u so much for conducting this online quiz programme.
Ms.	PEDAPATI UMA SATYA DURGA DEVI	1st BSCchemistry	pedapati.uma@gmail.c	Government Degree College,Maredupaka	Mandapeta	Andhrapradesh	Yes	Yes	Good	4	Good quiz
Mr.	KURUVA PRABHAKAR	III BZC	19614	SILVER JUBILEE GOVT COLLEGE (A) KURNOOL	KURNOOL	Andrapradesh	Yes	Yes	Excellent	5	Im so happy to participate this type of knowledge providing programme
Mr.	Janarthanan Venkatesan	M.Sc Chemistry	20PCH 1023	JKKN college of arts and science	Komarapalayam, Namakkal Dt.	Tamil Nadu	Yes	Yes	Excellent	4	and excellent experience in online chemistry quiz. Though there are little discomforts in time lag and other issues it a wonderful session.I request you to conduct more and more quizzes and webinars.
Mr.	PRASHANT SUBHASH VIRKAR	Ty Bsc	77	Annasaheb Vartak College Vasai	Vasai	Maharashtra	Yes	Yes	Excellent	5	Nice quize test
Ms.	T. MAHESHWARI	Msc chemistry	20PCH 1029	J. K. K. Nataraja college of arts and science, komarapalayam, Namakkal	Salem	Tamil nadu	Yes	Yes	Excellent	5	Thanks for given opportunity, i was utilized competition
Ms.	P. MOHINI SAI	3rd bsc (bzc)	2111	Government degree college	Seethanagara	Andhra Pradesh	Yes	Yes	Very Good	4	
Mrs.	GUÐIMALLAM HARIPRIYA	BSc.BZC	7843	PVKN Government Degree College Autonomous	Chittoor	Andhra Pradesh	Yes	Yes	Excellent	5	

Mr. Beedanapalli	B sc final year	2E+08	P.s.g.d.college	Penukonda	Andhra Pradesh	Yes	Yes	Excellent	5	limitations in the quiz one is time time management and other is using the questions in apposite way.(. tuffest priority.)
Mr. LEGA VERA VENKATA RAVINDRA	Degree	5383	Mandapeta Degree College maredupaka	Mandapeta	Andhra Pradesh	May be	Maybe	Excellent	5	Wonderful Quiz I am so happy this quiz participating tqg
Ms. G.D.N.S.S.Sowjanya	Studying Bsc 2 year	2E+09	Aditya degree college for women's kakainda	Kakinada	ANDHRA PRADESH	Yes	Yes	Excellent	4	
Ms. DHARANI V	M.Sc Chemistry	20PCH 1026	J.K.K.Nataraja College of Arts and Science	Salam	Tamilnadu	Yes	Yes	Very Good	4	I thank you so much for Conducting Quiz program like this.. It is very Interesting & Informative..
Mr. T Srikrishna	BSc (MBC) 3 year	7919	PVKN government degree College autonomous	CHITTOOR AP	Andhra Pradesh	Yes	Yes	Satisfied	5	This is excellent program questions is very beautiful
Ms. KOSETTI LALITHA	1st BSC chemistry	lalilalitha708@gmail	Government Degree College, Maredupaka	Teki	Andhrapradesh	Yes	Yes	Good	4	Excellent
Ms. KONDA RAMYA KUMARI	3rd B. Sc	10876	Adikavi Nannaya University	Kakinada	Andhrapradesh	Yes	Yes	Good	3	
Ms. PENKEY SELSHI	3rd B.Sc CBMB	11110	A.S.D. Govt Degree College For Women (A)	KAKINADA	ANDHRA PRADESH	Yes	Yes	Very Good	4	
Mr. Koppiseti Durgaprasad	3rd Bsc(mpc)	64078	PR Government college (A)	Kakinada	Andhra Pradesh	Yes	Yes	Excellent	5	This quiz is wonderful and excellent, make me inspire and also help for got more knowledge in chemistry
Mr. KATIKAM SIVA PRASAD	III B.Sc (BZC)	279	GOVERNMENT DEGREE COLLEGE	RAJAMPET A	ANDHRA PRADESH	Yes	Yes	Excellent	5	
Ms. Chollangi yamuna kumari	Degree second year Bsc(mpc)	2E+10	Adhi kavi nannaya university	Mandapeta	Aandra pradesh	Yes	Yes	Excellent	5	This is a best oportunity to me



Ms.	Gudipati Hiranmai Vijayalakshmi Phanendra	3rd B.Sc CZAqt	11084	ASD Government Degree college	Kakinada	Andhra Pradesh	May be	Yes	Very Good	5	Intresting
Ms.	KONA RESHMA	3 rd BSc BZC	64502	PRGC	Kakinada	Andhra pradesh	Yes	Yes	Very Good	4	
Mr.	PITTU SRIKANTH REDDY	U.G final year(M.P.C)	5547	K. V. R, K. V. R & MKR COLLEGE KHAJIPALEM.	GUNTUR	Andhra pradesh	Yes	Yes	Very Good	4	Very good
Mr.	DURGA PRAVEEN BOTCHA	III BSc MCCs	12322	AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE	YAKAMURU	Andhra Pradesh	Yes	Yes	Very Good	5	Thank for conducting such a beautiful and inspiring quiz and
Ms.	RASHMITHA MADDIMSETTI	III Bsc CBZ	4372	Sri DNR Government Degree College for women	Palakol	Andhra Pradesh	Yes	Yes	Good	3	
Mr.	SETTI MANIRATNAM	BSC 1ST YEAR	449	GOVERNMENT DEGREE COLLEGE MANDAPETA	MANDAPE TA	ANDHRA PRADESH	Yes	Yes	Average	3	Every failure is stepping stone to success
Ms.	PALIVELA SANTHI KUMARI	III B.Sc.MCCs	63870	PR govt College kakinada	Kakinada	Andhra Pradesh	Yes	Yes	Very Good	5	
Ms.	CHEKKA RAJA RAJESWARI	Degree third year	64907	P.R.G.C	Kakinada	Andhra Pradesh	Yes	Yes	Good	5	It's better to speedup for some more time saving.
Ms.	DAVANI NAGA LAKSHMI	3 rd BSC (bzc)	8292	Government degree College (A) tuni	Tuni	Andhrapradesh	Yes	Yes	Excellent	5	Excellent
Ms.	KADA DIVYASREE DURGA	3rd	63914	PR Govt college (Autonomous)	Kakinada	Andhra Pradesh	Yes	Yes	Excellent	5	
Ms.	LANKA JNANESWARI	B.sc MPC 2nd year	2E+09	Aditya degree college for womens	Kakinada	Andhra pradesh	Yes	Yes	Excellent	5	This quiz really boosted up my energy and increased my confidence level
Mr.	M.SRI MANJUNADH	BSc BZC (E.M)	64470	P.R degree collage kakinada	Kakinada	Andhra Pradesh	Yes	Yes	Good	4	
Mr.	M.SRI MANJUNADH	BSc BZC (E.M)	64470	P.R degree college kakinada	Kakinada	Andhra Pradesh	Yes	Yes	Good	4	
Ms.	NALLAMILLI MEENA SAI PRASANNA	Bsc MBC 3rd year	2E+11	Aditya degree college for women	Kakinada	Andhra Pradesh	Yes	Yes	Good	4	
Ms.	UDATHA SATYA DURGA	1st year CBZ	udathas atya123@gmail	Government Degree college Maredupaka	Yeditha sethanagara m	Andhra Pradesh	Yes	Yes	Very Good	4	Good
Ms.	ARTHUR DIVYA	Degree final	7926	PVKN Govt (A) Degree College	Chittoor	Andhra Pradesh	Yes	Yes	Excellent	5	
Ms.	VARSHITA ALLURI	III Bsc (MPC)	10881	A.S.D Government Degree College For Women (A)	Kakinada	Andhra Pradesh	Yes	Yes	Very Good	5	
Ms.	R.Nagalakshmi	III BSC (MPC)	11141	ASD govt degree college for women	Kakinada	Andhra Pradesh	Yes	Yes	Excellent	5	No comments sir
Ms.	CHITTUMURI VAINAVI	Degree 1st year	11847	ASD women's degree college kakinada	Kakinada	Andhrapradesh	Yes	Yes	Very Good	5	
Ms.	PUSHPALATHA PYLA	3td B.sc (CZAqT)	11195	ASD Government Degree College for Women's ( Autonomous)	KAKINADA	Andhra Pradesh.	Yes	Yes	Excellent	5	We really learn more
Ms.	K. NEELA VENI	III BSC( MPC)	11112	A. S. D govt degree college for women	Kakinada	Andhrapradesh	Yes	Yes	Excellent	5	No comments sir

Ms.	SUBITHA VANGALAPUDI	Bsc Final year	2E+11	Aditya Degree College for Women	Kakinada	Andhra Pradesh	Yes	Yes	Excellent	5	The execution is extraordinary sir.. It really helps us to enhance our
Ms.	GANTA GANGOTHRI	B.sc MPC 3rd year	8190	Government Degree College (Tuni)	Tuni	Andrapradesh	Yes	Yes	Very Good	5	This is very use full
Ms.	VEDIRESWARAPU LAXMI NAGA SAI CHANDRIKA	Degree 2nd year MPC	2E+09	Aditya degree college for women's	Kakinada	Andhra Pradesh	Yes	Yes	Excellent	5	chemistry I felt very Happy for participating in quiz I learned some more subject due this quiz
Ms.	K RUSHINI	Degree 3rd year, Bsc bbe	2E+11	Aditya degree college for women	Pithapuram	Andhrapradesh	Yes	Yes	Excellent	5	This is a very innovative
Ms.	YELUGU BANITI SAINIKITA	1st year Bsc	11812	ASD degree college for women	Kakinada	Andhra Prndesh	Yes	Yes	Satisfied	5	Good experience
Ms.	BIKKAYOLU SUVARNA KUMARI	Bsc(mpc) 3rd	4727	DRG govt degree college	Pentapadu	Andhrapradesh	Yes	Yes	Good	4	
Ms.	S N INDRANATH	3 BZC E/M	7332	GOVT DEGREE COLLEGE	NAGARI	ANDHRA PRADESH	Yes	Yes	Excellent	5	
Ms.	VANKA HARITHA	1 year B. Sc mpc	11857	GDC (W) (A) (ASD) kakinada	East godavari(kakinada)	Andhra pradesh	Yes	Yes	Good	5	EXCELLENT
Ms.	NEERTHI NELLI	Bsc third year	2E+11	Aditya degree college for womens	Kakinada	Andhra Pradesh	Yes	Yes	Good	3	
Ms.	Naredumitisharami	Bsc	192222	Asd womens	Kakinada	Andhra Pradesh	Yes	Yes	Excellent	5	
Ms.	VASAMSETTI JAGADEESWARI	III B.SC(MPC)	11151	ASD GOVERNMENT COLLEGE FOR WOMEN'S	Kakinada	Andhra Pradesh	May be	Yes	Excellent	5	
Ms.	KADIM LALITHA DEVI	3rd BSC	6713	S. CH. V. P. M. R Govt Degree College	Ganapavaram	Andhrapradesh	Yes	Yes	Excellent	5	All the question formation is very easy to understand
Ms.	KARRI SANDHYA	1BSc MPC	11758	ASD GOVERNMENT DEGREE COLLEGE FOR WOMEN	KAKINADA	ANDHRA PRADESH	Yes	Yes	Very Good	5	
Ms.	VARRI MAMATHA	Mbc	2E+11	Aditya degree college for women	kakinada	Andrapradesh	Yes	Yes	Excellent	5	
Ms.	VEERA VENI OLETI	B.sc MBC	2E+11	Aditya degree college for women	Kakinada	Andhrapradesh	Yes	Yes	Excellent	5	Must conduct competitions like this.. helps us to learn new things
Ms.	GEDELA NAVYA	1st BSc(mpc)	11757	ASD govt junior college	Kakinada	Andhra Pradesh	Yes	Yes	Excellent	5	It is very useful, thankyou for conducting quiz





A S.D.GOV.T.DEGREE COLLEGE(W), KAKINADA  
DEPARTMENT OF CHEMISTRY

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STUDENTS WHO ATTENDED IN THE PROGRAMME

Sl.No.	Signature of the Student	Sl.No.	Signature of the Student
1	K. Pamyra CBZ (EM)	20	K. Mallewavi - CBZ [EM]
2	P. Aparina Manegne. CBZ (E.M)	21	P. Manasa - CBZ - EM
3	P. Bhargavi (CBZ) em	22	P. reghana - CBZ (EM)
4		23	P. Nagalaxmi - CBZ (EM)
5	P. Himma Bindu (CBZ) (EM)	24	P. Navya - CBZ (E.M)
6	P. Kavya Varshini (CBZ) EM.	25	S. Ranyasri - CBZ (EM)
7	Ch. Swathi Sree (CBZ) e.m	26	Gr. Sandhya Rani - CBZ (E.M)
8	G. Vana Lakshmi	27	S. Sri latha Durga - CBZ (EM)
9	K. Bhavana CBZ (E.M)	28	K. Sri devi
10	S. Yamini CBZ [EM]	29	A. Tejasri
11	V. Anjali CBZ [E.M]	30	K. Usha Satya Swarupa Rani - CBZ (EM)
12	P. Chandini devi CBZ (EM)	31	
13	G. Chirana CBZ (EM)	32	
14	P. Devi Sri (CBZ) em.	33	
15	k. Durga meenakshi (CBZ) em.	34	
16	v. Indhu Priyadarshini (CBZ) em.	35	
17	B. Kamala - CBZ (EM)	36	B. Kamala
18	P. Kusuma - C.B.2 (EM)	37	
19	J. Lava Kumari CBZ [EM]	38	