Y.V.N.R. GOVERNMENT DEGREE COLLEGE
KAIKALURU

(NAAC GRADE "B+" CGPA : 2.61)
AN ISO 9001 : 2015 CERTIFIED INSTITUTION
AFFILIATED TO KRISHNA UNIVERSITY
ELURU DIST. A.P. INDIA

Proceedings of the International Webinar

Environmental Sustainability and Development

(Multidisciplinary)

On 9th & 10th NOVEMBER 2022

3-00 p.m to 5.00 p.m.

Organized By

DEPARTMENTS OF CHEMISTRY, PHYSICS ZOOLOGY, AQUACULTURE TECHNOLOGY & IQAC

IN ASSOCIATION WITH

SIR C.R. REDDY COLLEGE, (AUTONOMOUS), ELURU

&

SIR C.R. REDDY COLLEGE FOR WOMEN, VATLURU

INDEX

Sl. No.	Subject	Page No.
1.	Brouchure	3
2.	Programme Sheet	4
4.	Preface	6
5.	Acknowledgements	7
6.	Greetings	9
7.	Introduction	19
8.	Inaugural Session	23
9.	Principal's Message	24
10.	Inaugural Talk	25
11.	Invited Talk - 1	26
12.	Invited Talk - 2	28
13.	Invited Talk - 3	30
14.	Invited Talk - 4	32
15.	Valedictory Session	34
16.	Valedictory Note	35
17.	Message by RJD	36
18.	Annexure - I	40
19.	Annexure - II	42
20.	Annexure - III	42
21.	Annexure - IV	43

ABOUT THE COLLEGE

Y.V.N.R. Government Degree College, Kaikaluru is a public funded educational institution. This college, popularly known as GDC kaikaluru is located in the world famous wet land, Ramsar, Kolleru Lake. The college has a unique logo with the citation "Knowledge is Power". The citation depicts the ancient adage the "Knowledge is power". The logo is flagged by rising sun, Kolleru Lake, Kolleru fisher men, and Kolleru birds.

The required knowledge to cope with the current trends in the competitive world is bing inculcated to the students at various levels by the institute. The students are benefited with the power to sustain in the community. The rising sun in the logo is the symbol of knowledge. Like the sun shining the institute provides the radiance of knowledge to the community. The other parts of the logo i.e., Kolleru birds and Kolleru fisher men are the representations of the community. All of them depict communal approach with enriched knowledge is imarted to the stake holders in the institute.

The college was established in the year 1982. Sri Yerneni Raja Rama Chandar, Yerneni Nagendranath, Yerneni Sitha Devi (Former Education Minister, Govt. of A.P.) and Yerneni family members generously came forward and raised funds from the public for the estabilshment of this institution. The college development committee secretary Sri Gurajada Narasimha Rao coordinated the activities of the development committee and with in no time with the support of the state government under the Telugu Grameen Kranthi Padham, buildings were constructed. With the generous assistance of philanthropists and the elite of the village - Sri Kammili Vittal Rao, Sri Rama Raju, Sri Naidu, Sri Undukuri Satyanarayana Raj; CPDC members - Sri Gadiraju Bhaskara Varma, Sri Potluri Vijaya Bhaskar, Sri S. Satyanarayana Murthy, Sri Kare Sarat Babu, Sri B.D. Srinivas, Sri G. Chandra Mohan, Sri G. Udaya Sankar and Government funds, additional class rooms were built.

In the 2017, 2nd Cycle NAAC Accreditation, It is gratifying to see this college maintain a better position than the grade achieved in the previous first cycle by achieving a "B+" grade with 2.61 CGPA in Government Degree Colleges. Achieving this grade involves the hard work of lecturers and students under the leadership of the then principal. That is why the proverb that people become sages if they work hard does not come with ease. Most importantly, due to the efforts of the college governing body CPDC, with the help of donors and financial assistance for the infrastructure, Rs. 2 crores was obtained in RUSA 2.0 by getting a B grade in the 2nd cycle. Class rooms and labs are already under construction under RUSA Funds and the college computer lab is modernized with these funds. It is the result of the efforts of our CPDC.

WEBINAR CO-ORDINATORS

Dr. **K.A. EMMANUEL**
S.G. Lecturer in Chemistry

Dr. **P. PAUL DIVAKAR**
S.G. Lecturer in Physics

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Chief Patron :

Dr. **POLA BHASKAR** IAS,
Comissioner Collegiate Education, Mangalagiri

Patrons :

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Dr. **C. KRISHNA**, RJD of Colligiate Education, Rajamahendravaram
Dr. **M.B.S.V. PRASAD** M.S (Ortho), Secretary, Sir C.R. Reddy Educational Institutions, Eluru

Webinar Chairpersons :

Dr. **B. RAGHUNATHA REDDY**, M.Com., B.Ed., MPhil., PhD., Principal
Dr. **K.A. RAMA RAJU**, M.Sc., M.Phil, Ph.D., Principal Sir C.R. Reddy College
Smt. **P. SAILAJA**, M.A., M.Phil, Principal Sir C.R. Reddy College for Women

ORGANISING COMMITTEE

Organizing Secretaries :

Dr. **R. JALA BABU**, M.Sc., B.Ed, PhD., Dept. of Chemistry, IQAC Co-ordinator
Sri **K. RAMESH**, M.Sc., HOD, Department of Chemistry
Sri **N. SRINIVASA RAO**, M.Sc., B.Ed., M.Phil, HOD, Department of Physics
Dr. **V. SANDHYA**, M.Sc., PhD., HOD, Department of Zoology & Aquaculture Technology

Joint Secretaries :

Sri **D. UDAY PRAKASH**, M.Sc., M.Ed., Vice-Principal
Sri **A. ASIRVADAM**, M.Sc., Dept. of Physics
Sri **V.A.N. SATISH**, M.Sc., HOD, Dept. of Chemistry, Sir C.R.Reddy College, Eluru
Smt. **K. SIRISHA**, M.Sc., HOD, Dept. of Physics, Sir C.R.Reddy College for women, Vatluru

THEME OF THE WEBINAR

Now a days we observe Climate change is real, the actions of mankind are the origin of climate change, and there is no way to reverse climate change. Our food system, our economies, our cities and our communities are being affected by the changing climate. Can mankind adapt to the changes in environment caused by global climate change? Will mankind be wise enough to protect our planet for future generations? We can only hope to slow the change for the next thousand years. Our actions and our support can make a difference in how the world responds and adapts to its changing climate. It is in everyone's interest to come together to address the challenges we face. Practical and affordable solutions will help people slow the rate of climate change and deal with its unavoidable impact. Our goal is to facilitate a move towards sustainable living in the 21st century and beyond. In this context the Webinar provides a platform for eminent Professionals, Scientists, Researchers, Academicians and Entrepreneurs across the globe to participate and share their research advancements and new technologies in environmental sustainability.

SUB THEMES :

♦Renewable Energy to Mitigate Climate Change ♦ Conservation, restoration and management of biodiversity ♦Environmental Ethics and Laws ♦ Sustainability Policy and Practice ♦Green Technology and Climate Concerns ♦Energy efciency & Renewable Energy ♦Waste management & Recycling ♦Nanotechnology for sustainability

HONOURABLE GUESTS

Inaugural Address :	Dr. **POLA BHASKAR** IAS, Comissioner Collegiate Education, Vijayawada
Greetings by :	Dr. ***M.B.S.V. PRASAD*** *M.S (Ortho) Secretary, Sir C.R. Reddy Educational Institutions, Eluru*
Valedictory Address :	Prof. ***K. HEMACHANDRA REDDY*** *Chairman, APSCHE, Amaravathi, A.P.*
Greetings by :	Dr. ***R. DAVID KUMAR*** *Joint Director, Colligiate Education, Vijayawada, A.P.*
	Dr. ***C. KRISHNA***, *RJD, CCE,* Rajamahendravaram

SPEAKERS

Dr. **VIJAYA SRINIVASU VALLABHAPURAPU**
Professor of Physics, University of South Africa

Dr. **ARUL MANIKANDAN**
Research Fellow, National University of Ireland, Galway Ireland

Dr. **SRIKANTH VADLAMUDI**
Assistant Professor, Adama Science & Technology University, Adama, Ethiopia

Dr. **DOLLA THARUN**, Post Doc Fellow, Dept., of Civil Engineering, Indian Institute of Technology Bombay.

ADVISORY COMMITTE

Dr. **VIJAYA SRINIVASU VALLABHAPURAPU**
Professor of Physics, University of South Africa
Prof. **PAMU D**, PhD., Dept., of Physics, Indian Institute of Technology, Guwahati, Assam
Dr. **M. VIJAYA KUMAR**, M.Pharm, Ph.D., Lovely Professional University, Punjab

PLEASE NOTE :

- E-Certificates will be provided to the participants who successfully complete the webinar
- Registration is **FREE** and Last date for Registration : 5-11-2022
- Webinar will be organised through Zoom link.
- Registered participants will get the webinar link to your mail id and to your Whatsapp. webinar will be available in youtube https://youtube.com/channel/UCMcB2vM_pJCxDykyY5knbbA
- Online Registration link : https://forms.gle/Av4oBE5MQ7b1vfc9A
  For any queries please contact : **99495 49365, 98481 50912**
  99850 50696, 98493 06462

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In Association with Sir. C. R. Reddy College, (Autonomous) and Sir C. R. Reddy College for women, Eluru.

International Webinar On Environmental Sustainability and Development 09 -10 November 2022.

Day	Time (IST)	Topic	Remarks
Day 1 - **09 November 2022**	2.45 PM- 2.55 PM	Welcoming the guests	**Dr.K.A.Emmanuel, SG Lecturer in Chemistry, Programme Coordinator.**
	2.55-3.00	Prayer and lighting the Lamp	**By the Dignitaries**
	3.00-3. 05	Principal opening marks	**Dr. B.Raghunatha Reddy**
	3.05-3. 10	Theme of the Webinar	**Dr. P. Paul Divakar, Lecturer in Physics and Programme Coordinator**
	3.10-3. 15	Greetings by	**Dr. M.B.S.V. Prasad, M.S (Ortho), Secretary, Sir.C.R.Reddy Educational Institutions, Eluru.**
	3.15-3. 20	Introducing the Honourable Guest	**Dr. K. Pankaj Kumar, Lecturer in English.**
	3.20- 3.35	Inaugural address by the chief guest (CCE)	**Dr. Pola Bhaskar, IAS, Commissioner of Collegiate Education, Mangalgiri**
	3.35- 3.40	Greetings	**Dr.K.A.Rama Raju, Principal, Sir C.R.Reddy College, Eluru.**
	3.40- 3.45	**Introducing the Speaker-1**	**Sri. A. Asirvadam, Lecturer in Physics & Joint Secretary of the International Webinar.**
	3.45-4.25	**Contributions of chemistry and Physics for Environmental sustainability.** by ***Prof. V.Vijaya Srinivasu*** Professor of Physics, University of South Africa, Johannesburg, South Africa.	
	4.25 PM-4.30 PM	Introducing Speaker 2	**Sri. G. Raviteja, Lecturer in Zoology**
	4.30-5.10	Talk 2 : Environmental Sustainability and Development. by ***Dr Arul Manikandan*** Research Fellow National University of Ireland, Galway,Ireland.	
	5.10- 5.15	Closing Remarks and End of Day 1	

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Day	Time (IST)	Topic	Remarks
Day 2 - 10 November 2022	2.45 PM -2.50 PM	Greetings	Smt. P.Sailaja, M,.A., M.Phil, Principal, Sir.C.R.Reddy college for Women, Vatluru
	2.50 PM -2.55 PM	Greetings	Dr K.S. Vishnumohan M.S.(Ortho), Correspondent, Sir.C.R.Reddy College (A) Eluru.
	2.55 PM -300 PM	Introducing the speaker 3	Sri. K. Visweswara Rao, Lecturer in Zoology and Vice Principal, Sir C.R.Reddy college, (A), Eluru
	3.00- 3.40	Talk 3: Sustainable cooling of residential and commercial spaces. ***Dr Srikanth Vadlamudi,*** Assistant Professor, Department of civil Engineering, Adama Science and Technology University, Adama, Ethiopia.	
	3.40 - 3.45	Introducing the speaker 4	**Smt. K. Sirisha**, HOD, Department of Physics, Sir. C.R. Reddy college for Women, Vatluru
	3.45 - 4.20	Talk 4: Environmental Sustainability and Development by ***Dr.Dolla , Tharun***, Post Doc Fellow, Dept., of Civil Engineering, Indian Institute of Technology Bombay.	
	4.20- 4.25	Welcoming the guests	Dr. P. Paul Divakar, SG Lecturer in Physics, Programme Coordinator.
	4.25- 4.30	Opening remarks by the principal	Dr. B. Raghunatha Reddy
	4.30- 4.40	Greetings by	Dr. R. David Kumar, Joint Director, CCE.
	4.40- 4.50	Greetings by	Dr. C. Krishna, Regional Joint Director, CCE, Rajamahendravaram
	4.50- 4.55	Report of the webinar	Dr.R.Jalababu, IQAC Coordinator & Organizing Secretary of the International Webinar.
	4.55- 5.00	Introducing the chief guest	Dr. V. Sandhya. NAAC Coordinator
	5.00- 5.10	Valedictory address by Chief guest.	Prof. K. Hema Chandra Reddy, APSCHE, Chairman, Amaravathi, A.P.
	5.10- 5.15	Feedback by the participants	
	5.15-5.20	Vote of thanks	Dr K.A. Emmanuel, Department of chemistry, & Programme Coordinator of the International Webinar

***

PREFACE

One of the greatest problems that the world is facing today is that of environmental pollution, increasing with every passing year and causing grave and irreparable damage to the earth. Environmental pollution consists of five basic types of pollution, namely, air, water, soil, noise, and light. Air pollution is by far the most harmful form of pollution in our environment. Air pollution is cause by the injurious smoke emitted by cars, buses, trucks, trains, and factories namely sulphur dioxide, carbon monoxide and nitrogen oxides. Evidence of increasing air pollution is seen in lung cancer, asthma, allergies, and various breathing problems along with severe and irreparable damage to flora and fauna. Chlorofluorocarbons (CFC), released from refrigerators, air-conditioners, deodorants, and insect repellents cause severe damage to the Earth's environment. This gas has slowly damaged the atmosphere and depleted the ozone layer leading to global warming. Water pollution caused industrial waste products released into lakes, rivers, and other water bodies, has made marine life no longer hospitable. Humans pollute water with large scale disposal of garbage, flowers, ashes, and other household waste. In many rural areas one can still find people bathing and cooking in the same water, making it incredibly filthy. Acid rain further adds to water pollution in the water. Noise pollution, soil pollution and light pollution too are the damaging the environment at an alarming rate. Noise pollution include aircraft noise, noise of cars, buses and trucks, vehicle horns, loudspeakers, and industry noise, as well as high-intensity sonar effects which are extremely harmful for the environment. Soil pollution, which can also be called soil contamination, is a result of acid rain, polluted water, fertilizers etc., which leads to bad crops. Soil contamination occurs when chemicals are released by spill or underground storage tank leakage which releases heavy contaminants into the soil. These may include hydrocarbons, heavy metals, MTBE, herbicides, pesticides, and chlorinated hydrocarbons. Environmental protection is a practice of protecting the natural environment on individual, organization controlled or governmental levels, for the benefit of both the environment and humans. Since the 1960s, activity of environmental movements has created awareness of the various environmental issues. There is no agreement on the extent of the environmental impact of human activity and even scientific dishonesty occurs, so protection measures are occasionally debated. In the light of the aforesaid challenging tasks, we believe that the present International webinar plays a vital role in identifying the thrust areas of research in assessing the pollution depth and evolving the methods for controlling the pollution. No doubt the fruitful deliberations in the webinar would yield the constructive suggestions and guidelines for the further developments in environmental sciences.

Dr. K.A. EMMANUEL M.Sc, M.Phil, Ph.D.
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Kaikaluru, Eluru District.

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Department of Physics
Y.V.N.R. Government Degree college
Kaikaluru, Eluru District.

ACKNOWLEDGEMENTS

The Two day International Webinar on “Environmental sustainability and Development” (INWESAD-2022) has been made possible with the support of many technical experts, individuals and organizations both in man power and finance. This support is gratefully acknowledged.

We are very much grateful to our Chief Patron Dr. Pola Bhaska, Commissioner, Collegiate Education, Mangalagiri for his constant encouragement given to us in organizing this type of academic activity for the welfare and development of the college.

We owe a deep sense of gratitude to Dr. R. David Kumar, Joint Director, Commissionerate college Education, Mangalagiri, for his constant Support, valuable guidance in organizing the International webinar in most efficient manner. We are very thankful to Dr. Ch. Krishna, Regional Joint Director, Rajamahendravaram for his precious cooperation in International Webinar.

Our sincere and special thanks go to Dr.B.Raghunatha Reddy, Principal Y.V.N.R Government Degree College, Kaikaluru, Eluru district for his encouragement, co-operation and meticulous guidance at every stage in organizing and planning the International Webinar and bringing out this book.

We are very thankful to Dr.M.B.S.V. Prasad, M.S.(Ortho), Secretary, Sir.C.R. Reddy Educational Institutions, Eluru of the National seminar for his precious support as Patron of this International webinar. Our sincere and special thanks to Dr. K.S. Vishnumohan, M.S.(Ortho) Correspondent, Sir. C.R. Reddy College (Autonomous), Eluru for his encouragement, co-operation and meticulous guidance at every stage in organizing and planning the International webinar. We are thankful to Sri C. Viswanadha Rao (Nanaji), Correspondent, Sir. C.R.Reddy College for women, Vatluru for encouragement in the success of International webinar.

Our deep sense of gratitude to. Dr. K.A. Rama Raju, Principal, Sir. C. R. Reddy College (Autonomous), Eluru, for his encouragement, in conducting the International webinar successfully.

We also express our gratitude to. Smt P.Sailaja, Principal, Sir. C. R. Reddy College for Women Vatluru, for his encouragement, in conducting the International webinar successfully.

We express our sincere thanks to Dr. S.D.V. Satyanarayana Physical Director and N.S.S.Programme Officer of Y.V.N.R Government Degree College, Kaikaluru for his constant support and having taken every responsibility for completing this task through various stages.

We also express our gratitude to Sri. N. Srinivasa Rao HOD. Department of Physics, Sri. K. Ramesh, HOD, Department of Chemistry Dr. R. Jalababu, IQAC Coordinator, Dr. V. Sandhya HOD, Departments of Zoology and Aquaculture Technology, Sri.V.A.N. Satish, HOD, Department of Chemistry, Sir.C.R.Reddy college, (Autonomous), Eluru, and smt K. Sireesha, HOD, Department of Physics, Sir.C.R.Reddy College for Women, Vatluru for their timely help in organizing the International Webinar in a successful manner.

We also express our deep sense of gratitude to Dr V. Srinivasu, Assistant Professor, University of South Africa, Dr V. Srikanth, Assistant professor, in the Department of Civil Engineering at Adama Science and Technology University, Ethiopia, Dr. Arul Manikandan Assistant Professor, Department of Microbiology, University of Galway, H91 TK33 Galway, Ireland, Dr. Tharun Dolla , post-doctoral fellow at the Department of Civil Engineering, Indian Institute of Technology Bombay, for accepting our invitation and delivered wonderful thought provoking lecturers in the International webinar in a successful manner.

Our sincere thanks to Ms. Dr. D. Lavanya, HOD, Department of Economics, Dr. V. Sandhya, HOD, Department of Zoology, who acted as Rapporteurs of various technical sessions of the International webinar. We owe special thanks to Sri. E. Ashok, Office Incharge and his staff for their constant support throughout the Webinar. We are very much grateful to my colleagues in the Departments of Commerce, Economics, History and English teaching and non-teaching members individually, for their continuous support in making this event successful.

Finally, we thank all the people by names who were directly and indirectly involved in organizing the International webinar, though we have not mentioned their names due to paucity of space.

We thank one and all.

Dr. K.A. EMMANUEL M.Sc, M.Phil, Ph.D.
Professor & Programme Coordinator
Department of chemistry
Y.V.N.R. Government Degree college
Kaikaluru, Eluru District.

Dr. P. PAUL DIVAKAR M.Sc, Ph.D.
Professor & Programme Coordinator
Department of Physics
Y.V.N.R. Government Degree college
Kaikaluru, Eluru District.

Government of Andhrapradesh

Higher Education Department

Dr Pola Bhaskar IAS
Comissioner Collegiate Education,
Vijayawada, A.P.

Greetings

It is glad to know that the Departments of Physics, Chemistryand IQAC of YVNR Government Degree College, Kaikaluru is organizing an International WebinarProgramme on**Environmental Sustainability and Development** on 9th& 10thNov. 2022**.**

The topic for the programme chosen is very apt for the current situation of the global environment. As the topic of the webinar implies, the relation between environment and sustainable development is the primary factor in maintaining sustainability. We live in this world, which means we are using fuel, energy, materials, etc. from our mother nature. Thus, for maintaining such sustainability, we should ensure the limited usage of these sources. Some resources of our environment are abundant or renewable, but some have scarcity, which encourages us to sustain a balance between those materials.

I congratulate the organizers of the International Webinar for bringing eminent Professors,Scientists, Researchers and academicians to a common platform. I am sure that this programme would turn out to be successful and deliberations will beuseful which would provide many insights on the topic chosen.

I believe this International Webinar will be a landmark in the history YVNR Government Degree College, Kakaluru.

With the best wishes

Dr Pola Bhaskar IAS

Government of Andhrapradesh

Higher Education Department

Dr R. David Kumar Swamy
Joint Director, Colligiate Education,
Vijayawada, A.P.

GREETINGS

I am very happy to know that Departments of Chemistry, Physics and IQAC of YVNR Government Degree College, Kaikaluru is organizing an International Webinar Programme on**Environmental Sustainability and Development** on 9th& 10th Nov. 2022**.**I have also noted down and felt happy as this is a collaborative activity with Sir C R Reddy College (Autonomous) and Sir C R Reddy College for women, Eluru.

These types of seminars or webinars are very useful for the faculty and also student young minds. Now a days various stress matters for our globe, such as **water management, environmental pollution, climate change, soil erosion** and**renewable energy**, are under environmental sustainability. Further, most of the devastating problems are human-made. Some of them are industrialization, deforestation, depriving agricultural practices, and over-exploitation, which become the primary concern for environmental instability. Our ecosystem has a limited power to resist all these changes and leads to the destruction of various social factors; because it has sufficient potential to rejuvenate itself. To revive ourselves from natural disasters, we must stop further damage to our natural sources and should maintain ecological steadiness.

I hope the deliberations at the webinar, we can develop an action plan would be evolved that reduces the damage to our ecosystem and sustains community feelings. Moreover I believe this webinar will be of great importance and use to help and create general awareness among the students. I congratulate the organisers and the Principal of the college for conducting the webinar.

I wish all the Best.

Dr R. David Kumar Swamy

Government of Andhrapradesh

Higher Education Department

Dr. Ch. Krishna RJD,
Collegiate Education, AP
Rajamahendravaram

Greetings

I consider it a great privilege to note that Department of Physics, Chemistry, Life Sciences and IQAC of YVNR Government Degree College, Kaikaluru is organizing an International Webinar Programme on Environmental Sustainability and Developmenton 9th& 10th Nov. 2022.

Human wellbeing is closely linked to the health of the environment. People need clean air to breathe, fresh water to drink, and places to live that are free of toxic substances and hazards. As we begin to experience the long-term consequences of exponential industrial growth and energy use, we must act to reverse these effects and prevent further damage, ensuring we have healthy places to live for generations to come.

Environmental sustainability is the responsibility to conserve natural resources and protect global ecosystems to support health and wellbeing, now and in the future. Because so many decisions that impact the environment are not felt immediately, a key element of environmental sustainability is its forward-looking nature.

So the initiation taken up by the college is appreciable.

I believe that it as a memorable and successful event in the history of YVNR GDC,Kaikaluru.

With the best wishes

Dr. Ch. Krishna

Government of Andhrapradesh

Higher Education Department

Prof. K. Hema Chandra Reddy
Chairman,
AP State Council of HIgher Education
Mangalagiri

Greetings

I am very much delighted to know that Department of Physics, Chemistry, Life Sciences and IQAC of YVNR Government Degree College, Kaikaluru is organizing an International Webinar Programme on Environmental Sustainability and Developmenton 9th& 10th Nov. 2022.I alsofelt happy as this is a collaborative activity with Sir C R Reddy College (Autonomous) and Sir C R Reddy College for women, Eluru.

The idea of environmental conservation gains real momentum if we are able to conserve resources and use them in a manner that they are sufficiently available for the coming generation as well. UNO explains sustainable development as a process that provides for the present generation without compromising on the needs of the future generations.

Sustainable development has gained momentum as a larger movement over the years. We now associate it with improving living standards, poverty alleviation, nutritional improvements, minimizing social and cultural instability and resource depletion.

I hope the talks at the webinar will be helpful and create general awareness. I congratulate the organisers and the Principal of the college for conducting the webinar.

With the Best Regards

Prof. K. Hema Chandra Reddy

Government of Andhrapradesh

Higher Education Department

Dr. MBSV Prasad, M.S. (Ortho)
Secretary
Sir C R Reddy Educational Institutions
Eluru

Greetings

I am very happy to know that Departments of Chemistry, Physics and IQAC of YVNR Government Degree College, Kaikaluru is organizing an International Webinar Programme onEnvironmental Sustainability and Developmenton 9th& 10th Nov. 2022.I have also noted down and felt happy as this is a collaborative activity with our institutions, Sir C R Reddy College (Autonomous) and Sir C R Reddy College for women, Eluru.

In the present world, climate change began making a profound impact on the consciousness of humanity. With the polar ice caps melting, global sea levels rising and cataclysmic weather events increasing in ferocity, no country in the world is safe from the effects of climate change.Building a more sustainable global economy will help reduce the greenhouse gas emissions that cause climate change. It is, therefore, critically important that the international community also tries for reducing emissions.Sustainable development and climate action are linked – and both are vital to the present and future well-being of humanity.

I hope the talks at the webinar will be helpful and create general awareness. I congratulate the organisers for conducting the webinar for empowering the faculty and students as well.

Dr. MBSV Prasad, M.S. (Ortho)

Government of Andhrapradesh

Higher Education Department

Dr. **K.S. VISHNU MOHAN**, M.S (Ortho)
Correspondent
Sir C.R. Reddy College (Autonomous), Eluru

Greetings

I am delighted to note that Departments of Chemistry, Physics and IQAC of YVNR Government Degree College, Kaikaluru is organizing an International Webinar Programme onEnvironmental Sustainability and Developmenton 9th& 10th Nov. 2022.It also a great pleasure for our college to collaborate with GDC Kaikalurufor this International webinar.

Environment and economy areinterdependent and need each other.Hence, development that ignores itsrepercussions on the environment willdestroy the environment that sustainslife forms. What is needed is sustainabledevelopment: development that will allow all future generations to have apotential average quality of life that isat least as high as that which is beingenjoyed by the current generation. Sustainabledevelopment as one which is directlyconcerned with increasing the materialstandard of living of the poor atthe grass root level — this can bequantitatively measured in terms ofincreased income, real income,educational services, health care,sanitation, water supply etc.

I hope the deliberations at the webinar, we can develop an action plan would be evolved that reduces the damage to our ecosystem and sustains community feelings. Moreover I believe this webinar will be of great importance and use to help and create general awareness among the students. I congratulate the organisers and the Principal of the college for conducting the webinar.

Dr. **K.S. VISHNU MOHAN**, M.S (Ortho)

Government of Andhrapradesh

Higher Education Department

Dr. K.A. Rama Raju
Principal
Sir C R Reddy College (Autonomous)
Eluru

Greetings

I am delighted to note that Departments of Chemistry, Physics and IQAC of YVNR Government Degree College, Kaikaluru is organizing an International Webinar Programme onEnvironmental Sustainability and Developmenton 9th& 10th Nov. 2022.It also a great pleasure for me to collaborate withthis International webinar.

Now a days it may seem that environmental sustainability and sustainable development are one in the same, there is quite a few ways in which they diverge in their goals. They do have the same overall goal that of conserving natural resources and creating more energy efficient projects and practices – but the two groups that are focused on them may find themselves in disagreement about what the priorities of actions are. Having a better understanding of how they are different and the same can help you do know how to navigate dealing with both. So this platform of webinar also gives some fruitful discussions.

I congratulate each one who is actively involved in organizing the webinar. I wish a grand success!

Dr. K.A. Rama Raju

Government of Andhrapradesh

Higher Education Department

Dr. B. Raghunatha Reddy
Principal
Y.V.N.R. Government Degree College
Kaikaluru, Eluru Dist.

Greetings

It gives me an immense pleasure to note that Departments of Chemistry, Physics, Zoololgy, Aqua culture Technology and IQAC of YVNR Government Degree College, Kaikaluru is organizing an International Webinar Programme on Environmental Sustainability and Developmenton 9th& 10th Nov. 2022**.**

Traditionally, Indian peoplehave been close to their environment.They have been more a component ofthe environment and not its controller.If we look back at our agriculturesystem, healthcare system, housing,transport etc., we find that allpracticeshave been environment friendly. Onlyrecently have we drifted away from thetraditional systems and caused largescale damage to the environment andalso our rural heritage. Now, it is timeto go back. In this context the topic chosen is very apt and I believe the discussions and deliberations will be very useful for the researchers and the students.

I thank the Sir C R Reddy college management to associate with us for conducting this webinar.

I congratulate the organisers. I wish a grand success.

Dr. B. Raghunatha Reddy

Government of Andhrapradesh

Higher Education Department

Chalasani Viswanadha Rao
Correspondent
Sir C R Reddy Collegefor Women
Vatluru

Greetings

I am delighted to note that Departments of Chemistry, Physics and IQAC of YVNR Government Degree College, Kaikaluru is organizing an International Webinar Programme onEnvironmental Sustainability and Developmenton 9th& 10th Nov. 2022.It also a great pleasure for our college to collaborate with GDC Kaikalurufor this International webinar.

The healthy living of a man on the earth is closely linked to the health of the environment. People need clean air to breathe, fresh water to drink, and places to live that are free of toxic substances and hazards.As we begin to experience the long-term consequences of exponential industrial growth and energy use, we must act to reverse these effects and prevent further damage, ensuring we have healthy places to live for generations to come.

I believe this webinar will be of great importance and use to help and create general awareness among the students. I congratulate the organisers and the Principal of the college for conducting the webinar.

Chalasani Viswanadha Rao

Government of Andhrapradesh

Higher Education Department

Smt P. SAILAJA
Principal
Sir C R Reddy College for women
Vatluru.

Greetings

I am very happy to know that Departments of Chemistry, Physics and IQAC of YVNR Government Degree College, Kaikaluru is organizing an International Webinar Programme onEnvironmental Sustainability and Developmenton 9th& 10th Nov. 2022.I feel happy to associate with this International event as joint organiser.

Environmental sustainability is fundamental to sustainable development. This series covers current and emerging issues in order to promote debate and broaden the understanding of environmental challenges as integral to equitable and sustained economic growth.

Sustainable development has gained momentum as a larger movement over the years. We now associate it with improving living standards, poverty alleviation, nutritional improvements, minimizing social and cultural instability and resource depletion.

I hope the talks at the webinar will be helpful and create general awareness among the young minds and the faculty.

I congratulate every one who is actively involved in organizing the webinar.

I wish all the best!

Smt P. SAILAJA

INTRODUCTION

Environment is living things and what is around them. It includes physical, chemical and other natural forces. Living things do not simply exist in their environment. They constantly interact with it. Organisms change in response to conditions in their environment. In the environment there are interactions between plants, animals, soil, water, temperature, light and other living, and non-living things. Now a day's People afraid of threat of III World war. But there are so many problems which attacking the world in several ways. Terrorism, Unemployment, Financial crisis and Environmental disasters etc., are also other problems which is going to be destroy the world. Out of them Environmental pollution is one of the dangers which now the globe is facing. It is very dangerous than nuclear weapons. Therefore, it is the responsibility of every citizen of the world to protect our environment carefully inorder to give life to future generations.

Inaugural Session:

Dr. Pola Bhaskar IAS, Commissioner, Commissionerate of Collegiate Education, Mangalagiri, was the chief guest of the session. He said water and environment are one of the most important natural elements on earth. Water and environmental quality directly and indirectly influence human lives and development. Water and environmental technologies provide a wide variety of professional and civil and environmental services with emphasis on surface water, ground water and remediation issues. Due industrialisation and urbanisation the water bodies are contaminated in a larger way which causes the non-availability drinking water. If we are not protecting the water bodies no doubt, there is going to wars between the nations and states for the sake drinking water. He also pointed out about incoming danger due to carbon dioxide and greenhouse gases. Global warming is caused partly by Carbon dioxide (CO_2) in the atmosphere. Carbon dioxide is held responsible for "green house effect". This effect is confined to the troposphere, whose bottom is the earth. It is needless to emphasize that human activity on earth releases large quantities of CO_2. Fortunately green plants on our earth convert a good part of the CO_2 into carbohydrates by the well Know Photosynthesis process. However, large quantities of CO_2 still remain in the upper region of troposphere and this becomes responsible for the formation of CO_2 layer. Carbon dioxide acts as a window to infrared radiations released by solar system. All these infrared radiations move towards the earth and interact with materials on the earth and lose their energies to some degree and become weak. The weak infrared radiations get reflected back by the materials. They move towards the carbon dioxide layer in troposphere. This acts as a closed window. Hence these infrared radiations are once again reflected back to the earth. This event becomes responsible

for increase in the temperature on the earth. This effect has been named as "greenhouse effect" as people thought that it is similar to the high temperature inside a greenhouse. As it was considered as one-way filtering action of glass in glass house. In order to reduce this effect plant trees as many as possible such that they absorb green house gases to protect the environment form global warming. Dr.B.Raghunatha Reddy, Principal Y.V.N.R.Government Degree College, Kaikaluru, Dr.K.A.Ramaraju, Principal, Sir C.R.Reddy College, Dr. M.B.S.V.Prasad, Secretary, Sir.C.R.Reddy Educantional Institutions, Eluru, and Dr. K.V.S.Vishnumohan M.S.(Ortho) Correspondent Sir.C.R.Reddy College (A), Eluru were present and spoke about the Protection of Environment and Sustainable development.

First Technical session:

The session was chaired by Dr.K.A.Emmanuel, Department of chemistry, Y.V.N.R.Government Degree College, Kaikaluru. Professor V.Vijaya Srinivasu University of South Africa gave invited talk on Contributions of chemistry and physics for Environmental Sustainability. He has explained that environmental sustainability has become the most important aspect of human life on earth in recent times. One has to control and minimize the environmental pollition in scientific ways. Physics and Chemistry plays key roles in this important aspect of human life. In my talk, we take you on a tour of success stories in the fields of microwave/rf pollution and control, water purification with new moving pole reactors and the use of functionalized nano particles, then the development of biodegradable electronic components to eliminate the electronic pollution. One of the emerging areas is 'Green Computing'. He discussed the recent development in the field of biodegradable ReRAM. Essentially, we bring in the recent contributions of Physics and Chemistry to control environmental pollution and thereby the achievement of environmental sustainability.

Second Technical session:

This session chaired by Dr.B.P.Paul Divakar, professor of Physics Y.V.N.R.Government Degree College, Kaikaluru. Dr. N. Arul Manikandan Assistant Professor, Department of Microbiology, University of Galway, H91 TK33 Galway, Ireland, acted as lead speaker in this session. He discussed on Biorefining and bioprocessing of marine macro algal biomass. The global crisis for arable land due to the population explosion questioned the sustainability of biological commodities obtained through terrestrial agriculture. Though recovery of biological resources from the ocean is known throughout human history, the present crisis led to the re-discovery of marine biomass for various purposes. In that regard, green macroalgal biomass is found to be promising feedstocks for several essential ingredients. It can be an apt replacement for different land-based high-tech biomaterials like biosorbents and hydrogel. However, at the moment, both high and low-value compounds from macroalgal biomass are used as biofertilisers. The

biorefining of green macroalgal biomass to separate high-value compounds from medium and low-value products will help to enhance both the value of the seaweed and the well-being of the coastal communities. Thus, the present project aims to diversify the scope of blue-bioeconomy activities by biorefining of seaweed to separate high-value sulfated polysaccharides (ulvan) from low-value carbohydrates and protein. Sulfated polysaccharides from seaweed are extracted, esterified using citric acid, and turned into a hydrogel. Ulvan-based hydrogel exhibited an excellent swelling ratio of 248.7 (±4.32) %, and the swelling ratio was further boosted to 387.5 (±63.6) % upon adding carboxymethyl cellulose. The low-value carbohydrate and protein-rich stream are used as a biosorbent for the adsorptive recovery of rare earth elements (REEs). Excellent adsorptive recovery of more than 90% was observed for all the REEs, viz. lanthanum, neodymium and dysprosium. Thus, the present discussion is expected to support the emerging blue-bioeconomy activities by adding value to various biological compounds extracted from marine macroalgal biomass.

Third Technical session:(10th November2022)

This session chaired by Dr.R.Jalababu, Department of chemistry, Y.V.N.R.Government Degree College, Kaikaluru. Dr. Srikanth Vadlamudi Assistant professor, in the Department of Civil Engineering at Adama Science and Technology University, Ethiopia acted as lead speaker in this session. He spoke on sustainability. Climate change is an undeniable reality of our times and the underlying influencing factors are too many. The interactions between these factors are complicated and difficult for a private citizen to fully comprehend. If there is one thing that everybody irrespective of their intellectual/ scientific capacity understands is that the summers are becoming unbearably hotter in our part of the country. With our conventional home/ commercial space building techniques, it is becoming increasingly difficult to have a comfortable living space temperature wise, making the need for an air conditioner/cooler any necessity, which is an economically and energy intensive problem. The current talk would briefly focus on the various sustainable methods used by traditional societies around the world to tackle the problem of cooling/ heating their living spaces. The talk would briefly focus on methods of cooling the living spaces, prevalent in the animal kingdom. The talk would also shine some light on conventional sustainable practices for creation of comfortable living spaces.

Fourth Technical session:

This session chaired by Dr.V.Sandhya HOD of Zoology and Aquaculture technology Y.V.N.R.Government Degree College, Kaikaluru. Dr.Tharun Dolla post-doctoral fellow at the Department of Civil Engineering, Indian Institute of Technology Bombay, as lead speaker in this session. Dr. Tharun Dolla on his invited talk mainly focused on sustainable development agenda has come up in the main agenda of the global research, policy and practice with the conception by the Brundtland commission. It aims at meeting the present generational needs but ensuring

that future needs are not compromised. This talk focusses on introducing the basic of the agenda of sustainable development, sustainable development goals, various theories that undergird and the agenda and a few directions on the way forward. The talk will help develop future research goals and objectives in light of the SDGs including framing of research questions, objectives, positioning the paper and the contributions not only to garner acceptance in publication houses but also contribute the policy and practice.

Valedictory Session: (10th November.2022)

Dr.B.Raghunatha Reddy, Principal, Y.V.N.R. Government degree College, Kaikaluru, Eluru District presided over the function. Dr K.S.Vishnumohan M.S.(Ortho), Correspondent Sir.C.R.Reddy College (Autonomous), Eluru appreciated the departments of chemistry, Physics, Zoology , Aquaculture technology and IQAC of Y.V.N.R Government college, and also Sir.C.R.Redy College,(Autonomous) ,Sir. C.Reddy College for Women, Vatluru for their efforts in bringing the experts and research scholars together on a single platform to discuss about the Environmental Sustainability and Development. Prof. K.Hemachandra Reddy, Chairman, APSCHE, Mangalagiri attended as a chief guest of the function and addressed the gathering. In his valedictory talk he mainly focused on Indoor environmental air quality: case studies. Indoor air quality deals with the essence of interior air that could affect health and comfort of building occupants including those in residential, public or private organizations. A wide spectrum of pollutants including toxic gases or particles has been recognized within the ix air inside that can harm your health. The effects of indoor air pollutants range from short term effects including eye and throat irritation to respiratory diseases and cancer abiding in the fullness of time. The health impacts of many chemical components in building are not well understood. Many chemicals present in indoor air environment have not been thoroughly tested and little is known about their long-term health effects. Apart from homes, other microenvironments small scale industries and schools were pointed as an area of utmost concern of indoor air quality. All the case studies undertaken highlights that there exists a paramount requirement to collect better and systematic information concerning actual exposure levels experienced by household and other defined workplaces in different parts of the country and develop a model for predicting the exposure levels based on fuel use and other households / occupational data therein (exposure atlas) to protect the health of children, women, workers and elderly persons. Among which the corner stone of control truly relies upon the education and awareness of the masses and also amalgamation of government policies to create pollution less ‘cleaner’ indoor environment.

Dr.R.Jalababu, IQAC Co-ordinator and Organizing Secretary of International Webinar presented a brief report on the Webinar. The webinar concluded with the vote of thanks Proposed by Dr.K.A.Emmanuel, Programme Coordinator.

Inaugural

Session

Principal's Message

Environment is defined as the total planetary inheritance and the totality of all resources. It includes all the biotic and abiotic factors that influence each other. While all living elements—the birds, animals and plants, forests, fisheries etc.—are biotic elements, abiotic elements include air, water, land etc. Rocks and sunlight are examples of abiotic elements of the environment. A study of the environment then calls for a study of the inter-relationship between these biotic and abiotic components of the environment.

The environment performs four vital functions (i) it supplies resources: resources here include both renewable and non-renewable resources. Renewable resources are those which can be used without the possibility of the resource becoming depleted or exhausted. That is, a continuous supply of the resource remains available. Examples of renewable resources are the trees in the forests and the fishes in the ocean. Non-renewable resources, on the other hand, are those which get exhausted with extraction and use, for example, fossil fuel (ii) it assimilates waste (iii) it sustains life by providing genetic and bio diversity and (iv) it also provides aesthetic services like scenery etc. The environment is able to perform these functions without any interruption as long as the demand on these The environment, left to itself, can continue to support life for millions of years. The single most unstable and potentially disruptive element in the scheme is the human species. Human beings, with modern technology, have the capacity to bring about, intentionally or unintentionally, far-reaching and irreversible changes in the environment. In the light of the aforesaid challenging tasks, we believe that the present International webinar plays a vital role in identifying the thrust areas of research in assessing the pollution depth and evolving the methods for controlling the pollution. No doubt the fruitful deliberations in the webinar would yield the constructive suggestions and guidelines for the further developments in environmental sciences. I am appreciating the efforts of organizers and I wish a grand success.

***

Thank you all.

INAUGURAL TALK :

Government of Andhrapradesh

Higher Education Department

Dr Pola Bhaskar IAS
Comissioner Collegiate Education,
Vijayawada

Environment is defined as the circumstances, objects or conditions by which one is surrounded. The complex of physical, chemical and biotic factors (as climate, soil, and living things) that act upon an organism or an ecological community and ultimately determine its form and survival. The aggregate of social and cultural conditions that influence the life of an individual or community. Environmental effects are felt, and modified, in 3 main ways through the flows of materials, energy, information fundamental 'spheres of influence' for sustainability. For sustainable development we must use materials in continuous cycles. Use continuously reliable sources of energy. He is mainly pointing out about incoming danger due to carbon dioxide and green house gases. Global warming is caused partly by Carbon dioxide (CO_2) in the atmosphere. Carbon dioxide is held responsible for "green house effect". This effect is confined to the troposphere, whose bottom is the earth. It is needless to emphasize that human activity on earth releases large quantities of CO2. Fortunately green plants on our earth convert a good part of the CO_2 into carbohydrates by the well Know Photosynthesis process. However, large quantities of CO_2 still remain in the upper region of troposphere and this becomes responsible for the formation of CO_2 layer. Carbon dioxide acts as a window to infrared radiations released by solar system. All these infrared radiations move towards the earth and interact with materials on the earth and lose their energies to some degree and become weak. The weak infrared radiations get reflected back by the materials. They move towards the carbon dioxide layer in troposphere. This acts as a closed window. Hence these infrared radiations are once again reflected back to the earth. This event becomes responsible for increase in the temperature on the earth. This effect has been named as "greenhouse effect" as people thought that it is similar to the high temperature inside a greenhouse. As it was considered as one-way filtering action of glass in glass house. In order to reduce this effect plant trees as many as possible such that they absorb green house gases to protect the environment form global warming.

Invited Talk – 1

Prof. **VIJAYA SRINIVASU VALLABHAPURAPU**

Professor of Physics, University of South Africa

Honorary Professor, IIT Guwagati

CONTRIBUTIONS OF CHEMISTRY AND PHYSICS FOR ENVIRONMENTAL SUSTAINABLITY

ABSTRACT

Environmental sustainability has become the most important aspect of human life on earth in recent times. One has to control and minimize the environmental pollitionin scientific ways. Physics and Chemistry plays key roles in this important aspect of human life. In my talk, we take you on a tour of success stories in the fields of microwave/rf pollution and control, water purification with new moving pole reactors and the use of functionalized nano particles, then the development of biodegradable electronic components to eliminate the electronic pollution. One of the emerging area is 'Green Computing'. I discuss the recent development in the field of biodegradable ReRAM. Essentially, we bring in the recent contributions of Physics and Chemistry to control environmental pollution and thereby the achievement of environmental sustainability.

DAY - 1, SESSION - I

Invited Talk –2

Dr. Arul Manikandan
Assistant Professor
Department of Microbiology
University of Galway, H91 TK33 Galway
Ireland

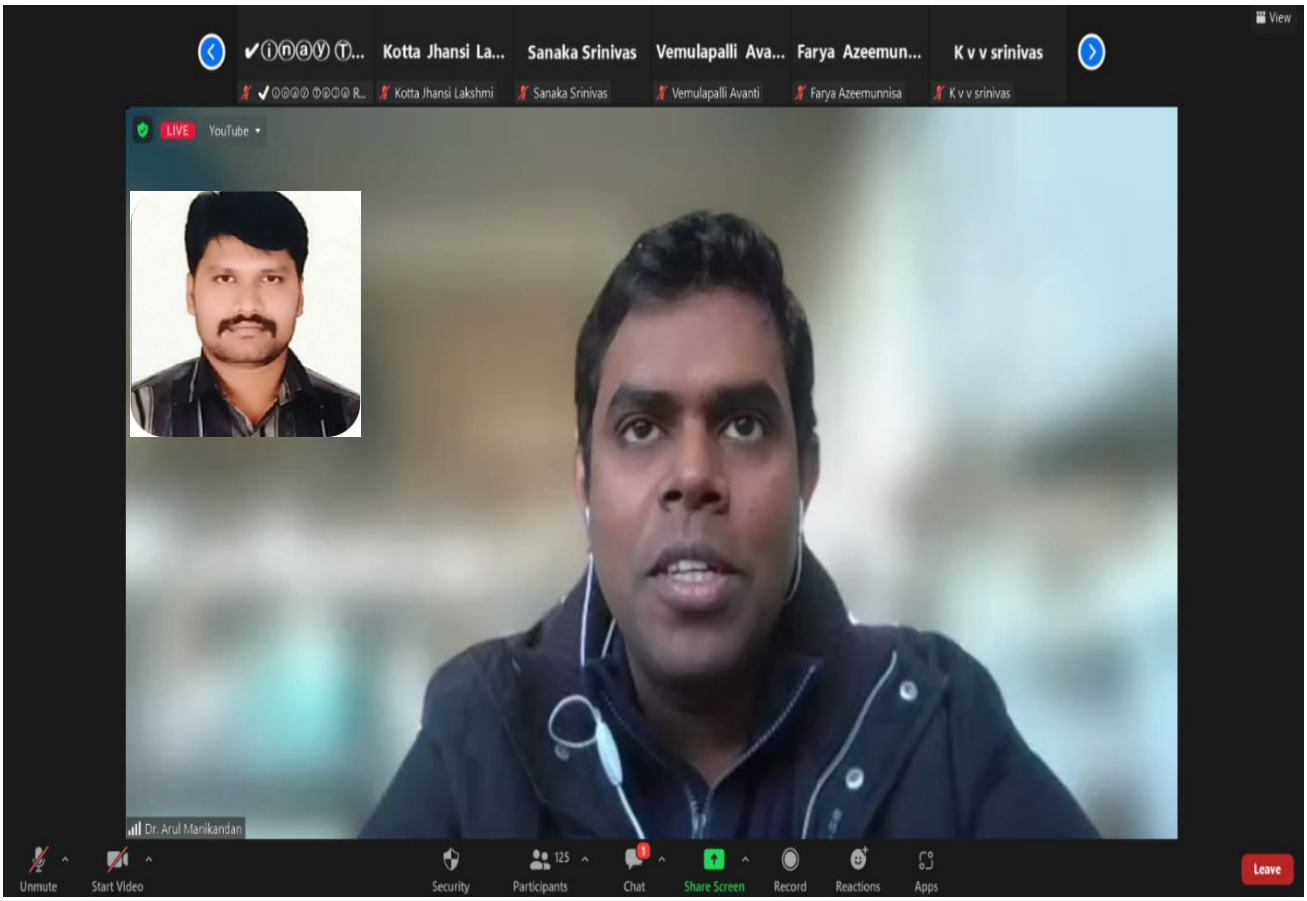
BIOREFINING AND BIOPROCESSING OF MARINE MACROALGAL BIOMASS (*ULVA* SP.) TO PRODUCE BIOCOMMODITIES FOR HI-TECH APPLICATIONS

Abstract

The global crisis for arable land due to the population explosion questioned the sustainability of biological commodities obtained through terrestrial agriculture. Though recovery of biological resources from the ocean is known throughout human history, the present crisis led to the re-discovery of marine biomass for various purposes. In that regard, green macroalgal biomass is found to be promising feedstocks for several essential ingredients. It can be an apt replacement for different land-based high-tech biomaterials like biosorbents and hydrogel. However, at the moment, both high and low-value compounds from macroalgal biomass are used as biofertilisers. The biorefining of green macroalgal biomass to separate high-value compounds from medium and low-value products will help to enhance both the value of the seaweed and the well-being of the coastal communities. Thus, the present project aims to diversify the scope of blue-bioeconomy activities by biorefining of seaweed to separate high-value sulfated polysaccharides (ulvan) from low-value carbohydrates and protein. Sulfated polysaccharides from seaweed are extracted, esterified using citric acid, and turned into a hydrogel. Ulvan-based hydrogel exhibited an excellent swelling ratio of 248.7 (±4.32) %, and the swelling ratio was further boosted to 387.5 (±63.6) % upon adding carboxymethyl cellulose. The low-value carbohydrate and protein-rich stream are used as a biosorbent for the adsorptive recovery of rare earth elements (REEs). Excellent adsorptive recovery of more than 90% was observed for all the REEs, viz. lanthanum, neodymium and dysprosium. Thus, the present study is expected to support the emerging blue-bioeconomy activities by adding value to various biological compounds extracted from marine macroalgal biomass.

Keywords: Sulfated polysaccharide; Biorefining; Bioprocessing; Macroalgae; Rare earth elements

DAY - 1, SESSION - II



Invited Talk –3

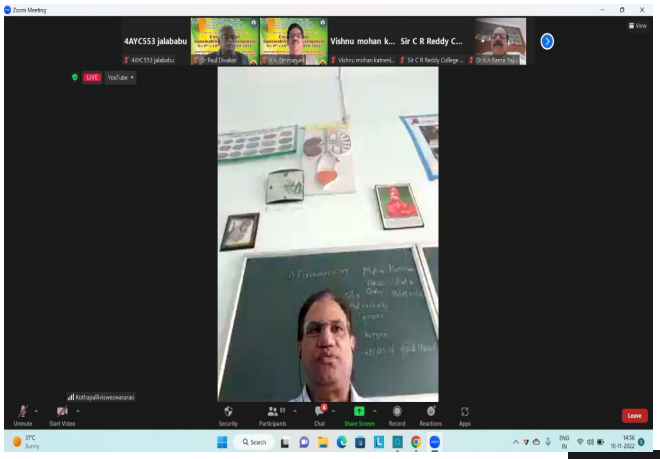
Dr V. Srikanth
Assistant professor
Department of Civil Engineering
Adama Science and Technology University
Ethiopia

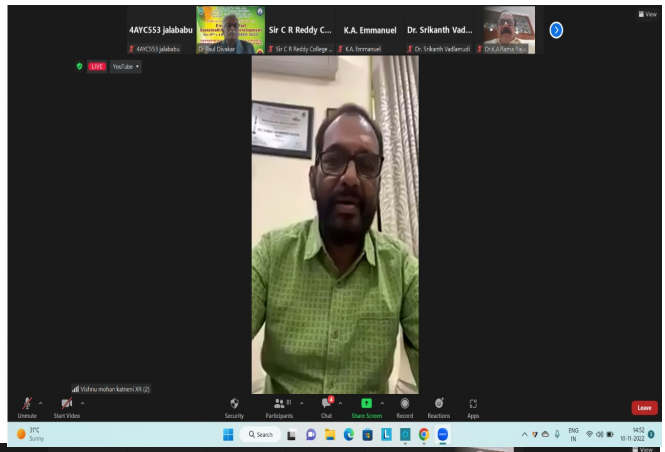
SUSTAINABLE COOLING OF RESIDENTIAL AND COMMERCIAL SPACES

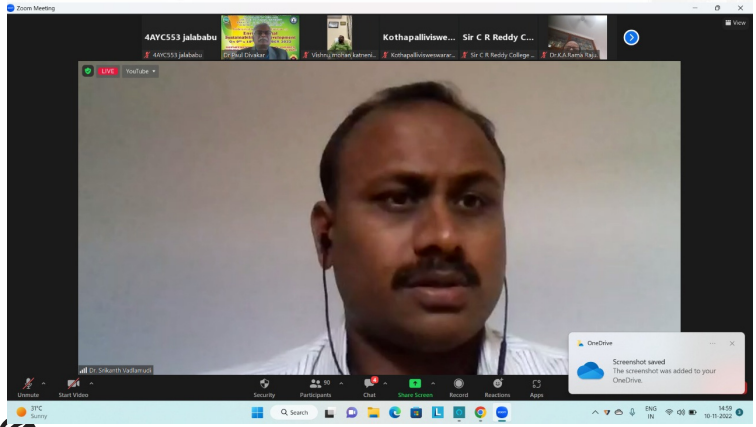
ABSTRACT

Climate change is an undeniable reality of our times and the underlying influencing factors are too many. The interactions between these factors are complicated and difficult for a private citizen to fully comprehend. If there is one thing that everybody irrespective of their intellectual/ scientific capacity understands is that the summers are becoming unbearably hotter in our part of the country. With our conventional home/commercial space building techniques, it is becoming increasingly difficult to have a comfortable living space temperature wise, making the need for an air conditioner/cooler any necessity, which is an economically and energy intensive problem. The current talk would briefly focus on the various sustainable methods used by traditional societies around the world to tackle the problem of cooling/ heating their living spaces. The talk would briefly focus on methods of cooling the living spaces, prevalent in the animal kingdom. The talk would also shine some light on conventional sustainable practices for creation of comfortable living spaces.

DAY - 2, SESSION - III







Invited Talk –4

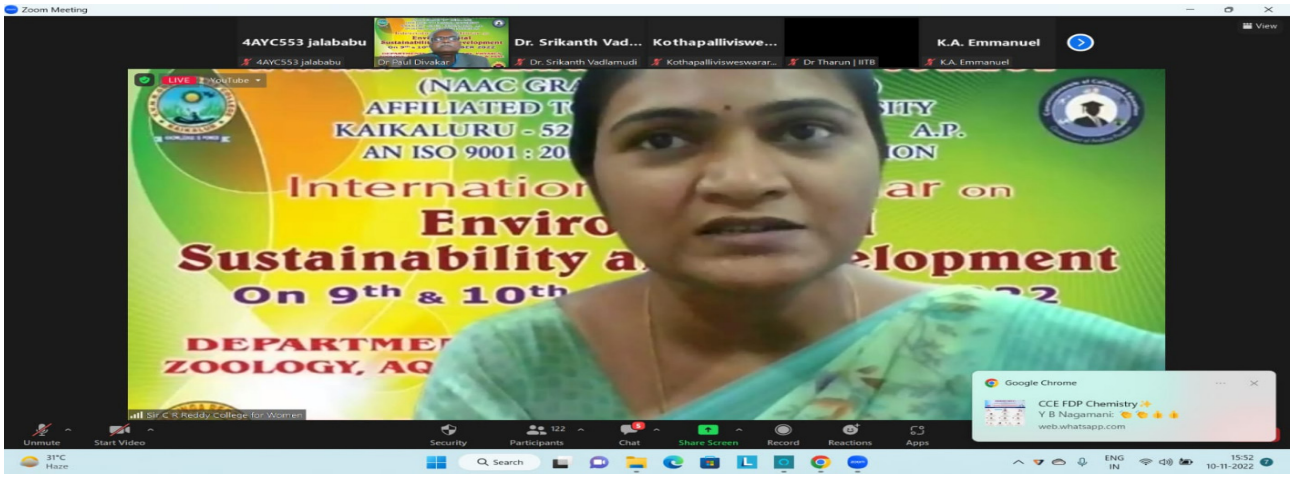
Dr. Tharun Dolla
Post - Doctoral fellow
Department of Civil Engineering
Indian Institute of Technology
Bombay

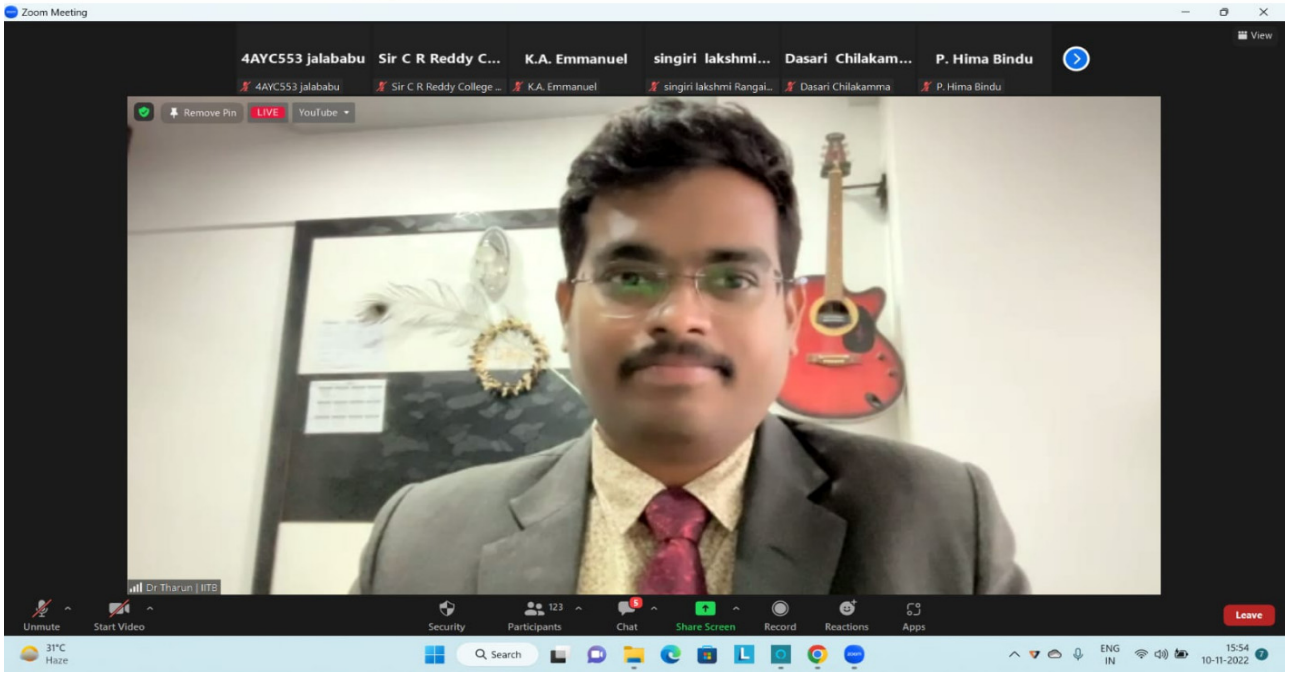
INTRODUCTION TO SUSTAINABLE DEVELOPMENT: TAKING STOCK AND LOOKING FORWARD

ABSTRACT

Sustainable development agenda has come up in the main agenda of the global research, policy and practice with the conception by the Brundtland commission. It aims at meeting the present generational needs but ensuring that future needs are not compromised. This talk focusses on introducing the basic of the agenda of sustainable development, sustainable development goals, various theories that undergird and the agenda and a few directions on the way forward. The talk will help develop future research goals and objectives in light of the SDGs including framing of research questions, objectives, positioning the paper and the contributions not only to garner acceptance in publication houses but also contribute the policy and practice.

DAY - 2, SESSION - IV





VALEDICTORY

SESSION

Government of Andhrapradesh

Higher Education Department

Prof. K.HEMACHANDRA REDDY
Chairman
APSCHE
Mangalagiri

VALEDICTORY TALK

Sustainable development aims at promoting the kind of development that minimises environmental problems and meets the needs of the present generation without compromising the ability of the future generation to meet their own needs. In his Valedictory talk he mainly focused on Indoor environmental air quality: case studies. Indoor air quality deals with the essence of interior air that could affect health and comfort of building occupants including those in residential, public or private organizations. A wide spectrum of pollutants including toxic gases or particles has been recognized within the ix air inside that can harm your health. The effects of indoor air pollutants range from short term effects including eye and throat irritation to respiratory diseases and cancer abiding in the fullness of time. The health impacts of many chemical components in building are not well understood. Many chemicals present in indoor air environment have not been thoroughly tested and little is known about their long-term health effects. Apart from homes, other microenvironments small scale industries and schools were pointed as an area of utmost concern of indoor air quality. All the case studies undertaken highlights that there exists a paramount requirement to collect better and systematic information concerning actual exposure levels experienced by household and other defined workplaces in different parts of the country and develop a model for predicting the exposure levels based on fuel use and other households / occupational data therein (exposure atlas) to protect the health of children, women, workers and elderly persons. Among which the corner stone of control truly relies upon the education and awareness of the masses and also amalgamation of government policies to create pollution less ‘cleaner’ indoor environment.

Government of Andhrapradesh

Higher Education Department

Dr. Ch. Krishna RJD,
Collegiate Education, AP
Rajamahendravaram

Good evening, Dear Participants. Congratulation to Organising Committee of this International webinar.

It is need of the hour to focus on the Sustainable Development. It recalls our (human) approach towards environment and environmental resources. Sustainable development is a BUZZ word, along with Biodiversity, Ecotourism related to human perception of environment. On one end we are receiving various services from the environment with out any

The 'environment' refers to the totality of resources and the total planetary inheritance we have received. It includes biotic (animals, plants, birds, etc.) and abiotic (sun, land, water, mountains, etc.) components. It explains the inter-relationship that exists between the abiotic and biotic components.

The environment performs four crucial functions :

1. Supplying Resources: The environment contains both renewable (air, water, land) and non-renewable (fossil fuels) resources. While the former is re-usable and do not get depleted soon, non-renewable resources come with the fear of depletion.

2. Assimilating Waste: Economic activities generate waste which the environment absorbs through natural processes.

3. Sustenance of Life: The environment comprises abiotic components that aid the living of biotic components. In the absence of elements such as air, water, land, etc. there would be no life on the planet.

4. Aesthetic Value: The environment adds aesthetic value to life. The mountains, oceans, seas, landmasses and other scenery of the environment enhance the quality of life.

Sustainable Development:

The idea of environmental conservation gains real momentum if we are able to conserve re-

sources and use them in a manner that they are sufficiently available for the coming generation as well. The United Nations Conference on Environment and Development (UNCED) defines this using the concept of sustainable development. It explains sustainable development as a process that provides for the present generation without compromising on the needs of the future generations.

Sustainable development has gained momentum as a larger movement over the years. We now associate it with improving living standards, poverty alleviation, nutritional improvements, minimizing social and cultural instability and resource depletion.

Sustainable development emphasis on the idea of passing on an environment with enough and good-quality resources to the future generation, just as we have given from our previous generations.

The features of sustainable development include a

Sustained rise in per capita income (PCI) worldwide,

Rational usage of resources,

Pollution checks,

Population control and relative dependence on renewable sources of energy to meet future generations' needs.

To achieve the above

We must shift to renewable sources of energy as compared to the regular thermal or hydropower plants that lead to climatic degradation.

Solar energy is an effective alternative that we can harness using photovoltaic cells. It is less costly and environmentally friendly.

A shift to wind energy is also an option. Setting up windmills in areas with high-speed wind can help convert the natural resource into electricity for commercial or household usage.

Another effective solution can come through the use of natural manure or bio-compost as a substitute for chemical fertilizers. This helps avert soil erosion and soil pollution.

Subsidized LPG as a fuel in rural areas and CNG as a fuel for vehicles in urban areas could lead the way forward.

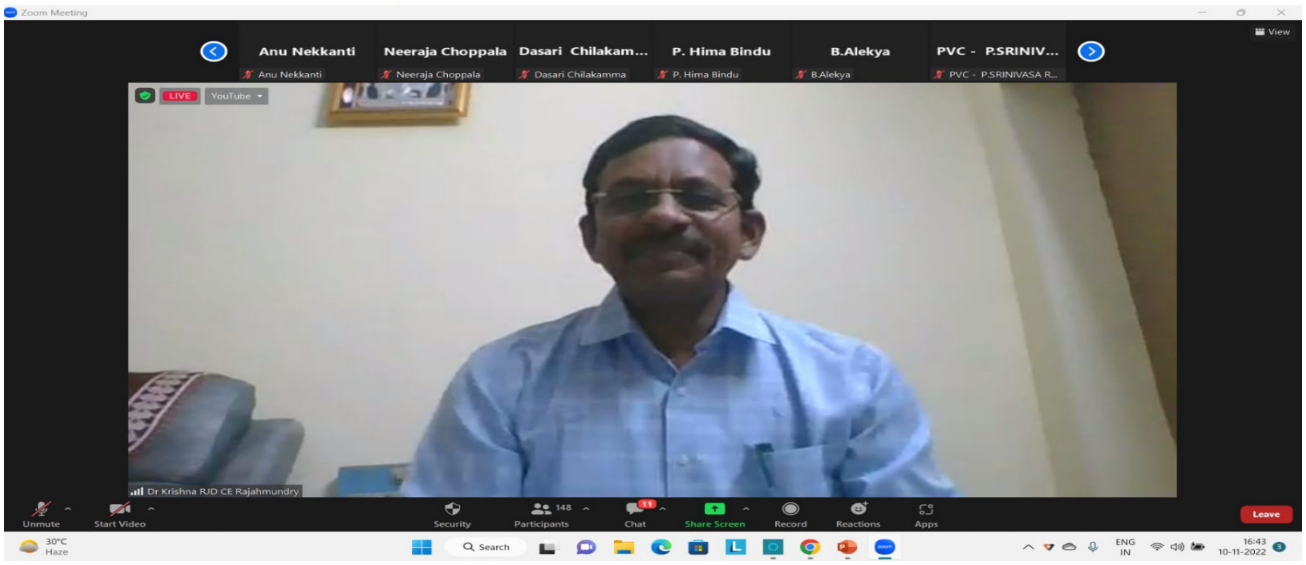
The rest of the change can come majorly through increased awareness and consciousness. Only when the gravity of the situation and a moral responsibility towards forthcoming generations is realized can we pass on a healthy environment to them. It is the responsibility of the mankind to design sustainable goals in all walks of their life.

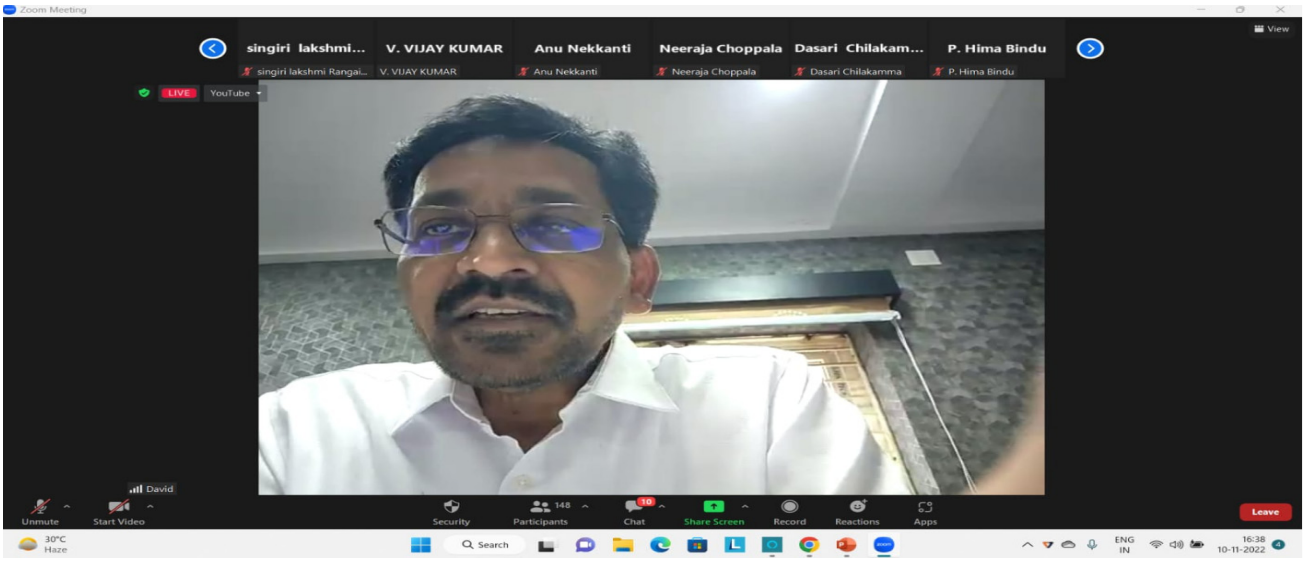
Hope this webinar will focus on lime lighting new avenues of sustainable development.

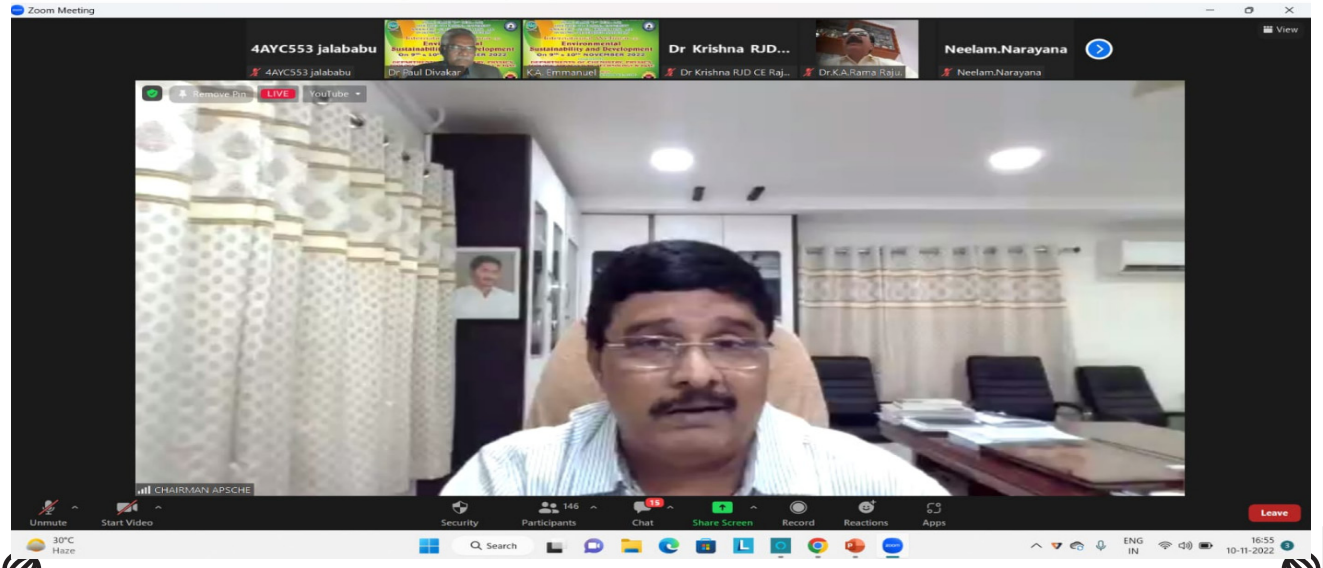
Congratulations to the team for organising this webinar

Dr. Ch. Krishna

VALEDICTORY TALK







VALEDICTORY PHOTO

Annexure - I

Feedback Form

International Webinar on
Environmental Sustainability and Development (IWESAD NOV 2022)
9th & 10th November 2022 conducted by Y.V.N.R. Government Degree College, Kaikaluru, and in Association with Sir C. R. Reddy College (A) & Sir C. R. Reddy College for Women, Eluru, Eluru district, Andhra Pradesh, India.

* Required

1. Full Name *

2. Designation / Class (For students) *

3. Name of the Institution & Place *

4. E-mail address *

Feedback

Please give your Feedback about International Webinar for further improvement

5. 1. Do you feel the Resource persons are helpful to improve your knowledge on Environment sustainability and Development. *

Mark only one oval.

- Yes
- No

6. 2. How clear were the ideas and concepts Resource persons presented *

Mark only one oval.

- Excellent
- Good
- Fair
- Poor

7. 3. How do you feel about International webinar on Environment sustainability and Development. *

Mark only one oval.

- Excellent
- Good
- Fair
- Poor

8. Any suggestions, Please *

Annexure - II

Y.V.N.R GOVERNMENT DEGREE COLLEGE
KAIKALURU, ELURU DIST., A.P – 521333.
AFFILIATED TO KRISHNA UNIVERSITY
NAAC GRADE "B+" [GCPA 2.61], ISO CERTIFICATION 9001: 2015.

Certificate of Participation

International Webinar on

Environmental Sustainability and Development

Organized by

Departments of Chemistry, Physics, Zoology, Aquaculture Technology & IQAC

in Association with

Sir. C.R. Reddy College (A) & Sir. C.R. Reddy College for Women, Eluru

This is to Certify that

has participated in International Webinar on Environmental Sustainability and Development- on 9th & 10th November 2022.

Dr. R. Jalababu, IQAC CO-ORDINATOR
P. Sailaja, PRINCIPAL, Sir. C.R. Reddy College for Women, Eluru
Dr. K. A. Rama Raju, PRINCIPAL, Sir. C.R. Reddy College (A) Eluru
Dr. B. Raghunatha Reddy, PRINCIPAL

Annexure - III

Y.V.N.R. GOVERNMENT DEGREE COLLEGE
(NAAC GRADE "B+" CGPA : 2.61)
AFFILIATED TO KRISHNA UNIVERSITY
KAIKALURU - 521 333, KRISHNA DIST. A.P.
AN ISO 9001 : 2015 CERTIFIED INSTITUTION

International Webinar on

Environmental Sustainability and Development

On 9th & 10th NOVEMBER 2022

Organized By

DEPARTMENTS OF CHEMISTRY, PHYSICS ZOOLOGY, AQUACULTURE TECHNOLOGY & IQAC

IN ASSOCIATION WITH

SIR C.R. REDDY COLLEGE, (AUTONOMOUS), ELURU
&
SIR C.R. REDDY COLLEGE FOR WOMEN, VATLURU

Annexure - IV

గురువారం, నవంబరు 10, 2022 సేన

పర్యావరణ పరిరక్షణతోనే మానవమనుగడ సాధ్యం

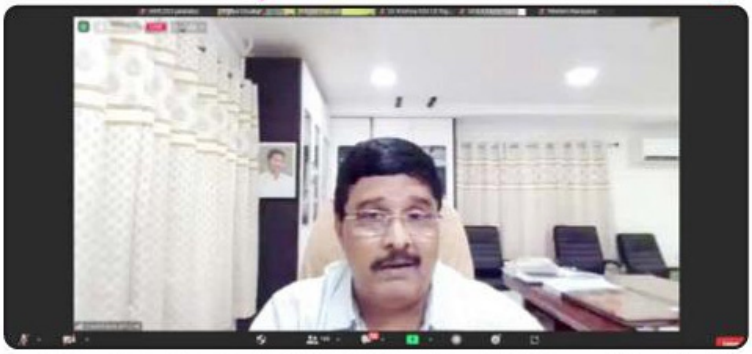
అంతర్జాతీయ వెబినార్‌లో కాలిగేట్ ఎడ్యుకేషన్ కమీషనర్ భాస్కర్

కైకలూరు, నవంబరు 9 (సేన) : పర్యావరణ పరిరక్షణకు ప్రతి ఒక్కరూ కృషి చేయాలని, పర్యావరణ పరిరక్షణతోనే మానవమనుగడ సాధ్యపడుతుందని, పర్యావరణాన్ని నిర్లక్ష్యం చేస్తే తగిన మూల్యం చెల్లించుకోకతప్పదని కాలిగేట్ ఎడ్యుకేషన్ కమీషనర్ పోలా భాస్కర్ హెచ్చరించారు. స్థానిక వైవిఎన్ఆర్ ప్రభుత్వ డిగ్రీకాలేజీ, ఏలూరు సిఆర్‌రెడ్డి అటానమస్, సర్ సిఆర్‌రెడ్డి మహిళా కళాశాలల సంయుక్త ఆధ్వర్యంలో 'పర్యావరణ కొనసాగింపు-అభివృద్ధి' అనే అంశంపై రెండురోజులపాటు అంతర్జాతీయ వెబినార్ నిర్వహిస్తున్నారు. ఈ వెబినార్‌లో మంగళగిరి నుంచి పోలా భాస్కర్ పాల్గొని మాట్లాడుతూ.. నేడు ప్రపంచంలోని ప్రజలంతా పర్యావరణ పరిరక్షణపై దృష్టిసారించాలన్నారు. పర్యావరణ పరిరక్షణ మానవజాతి మనుగడకు ఎంతో అవసరమన్నారు. ప్రతి ఒక్కరూ పర్యావరణ పరిరక్షణకు పాటుపడాలన్నారు. వెబినార్‌లో సిఆర్‌రెడ్డి విద్యాసంస్థల కార్యదర్శి డా. ఎంబిఎస్‌వి ప్రసాద్, కైకలూరు ప్రభుత్వ డిగ్రీ

కళాశాల ప్రిన్సిపాల్ డా.బి.రఘునాధరెడ్డి, కళాశాల ఫిజికల్ డైరెక్టర్ ధనుంజయ, డా. విజయశ్రీనివాస్, డా.శ్రీకాంత్ వడ్లమూడి తదితరులు మాట్లాడారు.

శుక్రవారం, నవంబరు 11, 2022 సేన

పర్యావరణ పరిరక్షణ అందరి బాధ్యత : హేమచంద్రారెడ్డి



కైకలూరు, నవంబరు 10 (సేన) : పర్యావరణ పరిరక్షణ అందరి బాధ్యతని, ప్రతి ఒక్కరూ పర్యావరణాన్ని పరిరక్షించాలని ఎపిఎస్‌సిహెచ్‌సి (అమరావతి) చైర్మన్ ప్రొ॥ కె.హేమచంద్రారెడ్డి సూచించారు. స్థానిక ప్రభుత్వ వైవిఎన్ఆర్ డిగ్రీ కళాశాల, ఏలూరు సర్ సివి రెడ్డి అటానమస్ కళాశాల, మహిళా కళాశాలల సంయుక్త ఆధ్వర్యంలో నిర్వహిస్తున్న అంతర్జాతీయ వెబినార్ గురువారం నాటికి రెండో రోజుకు చేరుకుంది. వెబినార్‌లో హేమచంద్రారెడ్డి పాల్గొని మాట్లాడారు. కార్యక్రమంలో కైకలూరు ప్రభుత్వ డిగ్రీ కళాశాల ప్రిన్సిపాల్ డా. బి.రఘునాధరెడ్డి, డా. కెఎస్ విష్ణుమోహన్, ఎన్ఎస్ఎస్ ప్రోగ్రామ్ అధికారి ధనుంజయ, డా.కెవి రామరాజు, పి.శైలజా, ఉదయప్రకాషరావు, ఆర్. జాలాబాబు, డా. వి.సంధ్య తదితరులు పాల్గొన్నారు.