

**Report on
Science Academies' Lecture Workshop
on**

GREEN CHEMISTRY FOR SUSTAINABLE DEVELOPMENT

Date: 29th – 30th April 2018

Venue: Conference Hall, Aryabhata Building



**Centurion
UNIVERSITY**

Organized by

**Department of Chemistry
School of Applied Sciences
Centurion University of Technology and Management
Jatni-752050, Khurda, Odisha, India**

Sponsored by



The National Academy of Sciences
Allahabad



Indian Academy of Sciences
Bangalore



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The National Academy of Sciences, Allahabad
Indian Academy of Sciences, Bangalore**

Submitted by

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School of Applied Sciences
Centurion University of Technology and Management

Jatni-752050, Khurda, Odisha, India

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Coordinator

Dr.Susanta Kumar Biswal
Professor, Department of Chemistry
School of Applied Sciences
**Centurion University of
Technology and Management**
Jatni-752050, Khurda, Odisha, India

Convener

Dr.Ashok Kumar Mishra, FNASc
Professor, Department of Chemistry
Indian Institute of Technology-Madras
Madras- 600036, India

Brief report on Science Academies' Lecture Workshop on "Green Chemistry for Sustainable Development"

Two days workshop on "Green Chemistry for Sustainable Development" was held during 29th - 30th April 2018 at Conference Hall, Aryabhata Building of Centurion University of Technology and Management (CUTM), Jatni-752050, Khurda, Odisha, India. The lecture workshop was organized by Department of Chemistry in association with Indian National Science Academy, New Delhi, The National Academy of Sciences, Allahabad and Indian Academy of Sciences, Bangalore.

Dr. Ashok Kumar Mishra, Fellow of National Academy of Sciences, India and Professor of Chemistry at Indian Institute of Technology Madras was the Convener of the workshop and Dr. Susanta Kumar Biswal, Professor, Department of Chemistry, School of Applied Sciences of Centurion University of Technology and Management, Jatni-752050, Khurda, Odisha, India was the Coordinator. Fellows from Science Academies and eminent academicians from reputed institutions/Universities have been invited for the workshop to disseminate the proposed concepts to the participants.

Resource Persons of the Workshop

Dr. Ashok Kumar Mishra, FNASc

Dr. Tarashankar Pal, FNASc

Dr. Prafulla Kumar Sahoo

Dr. Kunja Bihari Satapathy

1. Dr. Ashok Kumar Mishra, Fellow of National Academy of Sciences, India and Professor in Chemistry at Indian Institute of Technology Madras-600036, India
2. Dr. Tarashankar Pal, Fellow of National Academy of Sciences, India and Retired Professor in Chemistry from Indian Institute of Technology Kharagpur-721302, West Bengal, India
3. Dr. Prafulla Kumar Sahoo, Professor at Department of Chemistry, Utkal University, Odisha -751004, India
4. Dr. Kunja Bihari Satapathy, Retired Professor at Department of Botany, Utkal University, Odisha -751004, India

Students, Research Scholars and faculty members of Chemistry of different Colleges/Universities/Organizations have participated in this workshop.

Day-1: 29.04.2018 (Sunday)

The inaugural session of this two days Science Academies' Lecture Workshop started sharply at 9.30 A.M. with the floral ceremony by presenting the bouquets to the guests followed by ceremonial lighting of the lamp. Co-ordinator Prof. Susanta Kumar Biswal, Professor and Dean, School of Applied Sciences, CUTM, introduced the guests very briefly. Convener cum Resource Person, Dr. Ashok Kumar Mishra (Prof. IIT, Madras), Prof. Tarashanker Pal (Prof. IIT, Kharagpur), Prof. Jagannath Padhi, Director, CUTM and Dr. Dojalisa Sahu, Head, Dept. of Chemistry were present. In the welcome address Prof. Padhi, pointed out to develop a method to minimize the use of transformer oil as it is highly carcinogenic.



Green Chemistry for Sustainable Development Dignitaries during inauguration



Co-ordinator Dr. Susanta Kumar Biswal and Convener Dr. Ashok Kumar Mishra addressing the gathering during inaugural session

On the first day and in pre-lunch session of the lecture workshop Resource person Prof. Ashok Kumar Mishra elaborated about the “Role of Green Chemistry in sustainability”, “Chemistry and Sustainable Energy Management”, “Catalysis and Sustainable Water Management” and during his lecture he told that inequality is a greater driver of unsustainability and addressed for use of safe reliable energy.



Green Chemistry for Sustainable Development Dr. Ashok Kumar Mishra delivering his lecture

In the Post lunch session, Resource Person, Prof. Tarashankar Pal (IIT, Kharagpur) discussed on “Catalysis involving metal Nanoparticles”. He addressed the participants that one can start the research from the kitchen. During his lecture he discussed about the principles of spectrophotometer and also discussed about arsenic pollution and its impact on water and cement slurry can remove some Arsenic III from water, which is more toxic than Arsenic V. Total Arsenic III can be removed by adding Alumina with the cement slurry and then the hard lumps are broken into small pebbles and these were put in a column and the water containing arsenic III can be removed completely. By stirring with rusted iron rod Arsenic V can also be removed completely. He gave brief conceptual idea about soap, TEM etc.



Dr. Tarasankar Pal delivering his lecture

Day-2: 30.04.2018(Monday)

The second day of the Lecture Workshop started at 9.30 A.M with the opening talk of Prof. Kunja Bihari Satapathy, Retired Professor at Department of Botany, Utkal University Odisha. He elaborated the concept of Bio fertilizer for “Sustainable Agriculture and Environment Management” and pointed out the difference between organic compost and bio fertilizer and types of bio fertilizers, their uses in agriculture without any residual effect. After this the next two lectures were delivered by Prof. Prafulla Kumar Sahoo, Dept. of Chemistry, Utkal University. In his keynote address on ‘Green Nanotechnology’ he emphasized why plastic and polythene carry bags and other items are not biodegradable as microorganisms cannot degrade these plastics because of C-C bonds and suggested for production of synthetic chemicals which will not be harmful after their use and thereby we will live in a natural environment without disturbing our nature and of course we will save our future generation and our planet.



Dr. Kunja Bihari Satapathy delivering his lecture



Dr. Prafulla Kumar Sahoo delivering his lecture

In post lunch session Resource Person, Prof. Tarasankar Pal (IIT, Kharagpur) highlighted on Gel for Environmental Remediation followed by Prof. Kunja Bihari Satapathy, who delivered talk on “Herbal medicines for primary health care”. Various plant species with its images and traditional medicinal uses were focused and also pointed about the rare plants used during “Anabasara” of The Lord Jagannath and conservation of these plants.



Dr. Tarasankar Pal delivering his lecture in Day-2 of the workshop

In the Valedictory session, Deputy Vice Chancellor, Dr. Supriya Pattanayak, Dr. Smita Mishra Panda, Director, Research and Development Cell, CUTM, Prof. S.K. Biswal, Dean, SoAS, CUTM and Dr. Dojalisa Sahu, Head, Department of Chemistry, CUTM were present. Two days report was briefed by Dr. Sagarika Parida, Head, Dept. of Botany and Zoology. The meeting was concluded with the vote of thanks given by Dr. Dojalisa Sahu.



Dignitaries on the dias during Valedictory Session



Coordinator Dr. Susanta Kumar Biswal addressing the gathering during Valedictory Session



Deputy Vice Chancellor and Chief Guest of Valedictory Session Dr. Supriya Pattanayak addressing the gathering

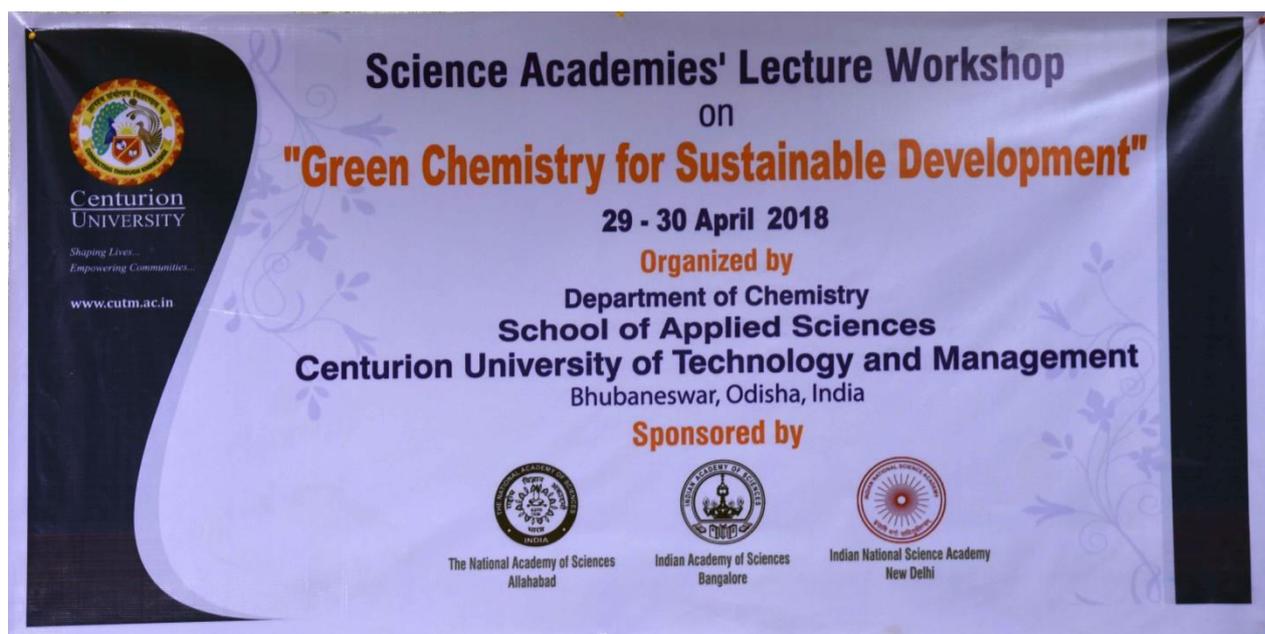


Resource Person Dr. Tarasankar Pal expressing his views in the workshop during Valedictory Session



Dr. Dojalisa Sahu, Head, Dept. of Chemistry giving vote of thanks during Valedictory Session

Banner of the workshop



COMMENTS FROM CONVENER/COORDINATOR ABOUT THE WORK SHOP

Science Academies' Lecture Workshop on "Green Chemistry for Sustainable Development" was held during 29th – 30th April 2018 at Department of Chemistry, School of Applied Sciences, Centurion University of Technology and Management, Jatni-752050, Khurda, Odisha, India. The workshop was organized successfully with valuable lectures delivered by eminent speakers from various reputed institutes and universities. The program covered the key concepts and theme of the proposed workshop in terms of Role of Green Chemistry in Sustainability, Chemistry and Sustainable Energy Management, Chemistry and Sustainable Water Management, Catalysis involving metal Nanoparticles, Catalysis in Micelle, Bio Fertilizers for sustainable Agriculture and Environment Management, Green Nanotechnology: Nanotechnology based Water Purification, Sustainable Assessment of Green Polymer based Nanocomposites and Hydrogels, Gel for Environmental Remediation and Herbal Medicines for Primary Health Care. The sessions on Role of Green Chemistry in Sustainability, Nanotechnology based Water Purification, Bio Fertilizers for sustainable Agriculture and Environment Management and Herbal Medicines for Primary Health Care gained popularity among the participants. The sessions also addressed the benefits of Catalysis involving metal Nanoparticles and Gel for Environmental Remediation.

The sessions were well organized and the theme was conveyed effectively to disseminate the objectives of the lecture workshop. The also enlightened the participants with the current scenario of Green Chemistry for Sustainable Development.



Coordinator
Dr.Susanta Kumar Biswal



Convener
Dr.Ashok Kumar Mishra

Number of Participants who attended the lecture workshop

The list of participants including faculty members, research scholars and students from various institutions in and around the host institution participated in the lecture workshop. A total of One hundred and fifty participants attended the workshop. No registration fee has been charged from the participants for attending the lecture workshop.

Sl. No	Name of the College	Number of Students	Number of faculties	Total
1	CUTM,Jatni,Khurda	94	17	111
2	CET,BBSR	0	3	03
3	SOA,BBSR	2	1	03
4	KIIT,BBSR	0	1	01
5	OUAT,BBSR	3	2	05
6	Utkal University,BBSR	4	2	06
7	CUTM,Paralakhemundi	0	2	02
8	Orissa Engineering College, BBSR	0	2	02
9	Indian Oil Corporation Ltd.,BBSR	0	1	01
10	CSIR-IMMT,BBSR	0	2	02
11	Tata Steel Ltd, Kalinganagar, Jajpur, Odisha	0	1	01
12	Ravenshaw University, Cuttack	3	1	04
13	Jatni College, Jatni	0	1	01
14	Khetra Basi DayanandaAngolo Vedic College,Nirakarpur, Khurda	0	2	02
15	Ranapur College, Nayagada, Odisha	0	1	01
16	Rajendra Autonomous College, Bolangir, Odisha	0	3	03
17	Mukunda Patra Degree College, Chandikhol, Cuttack	0	2	02
			Total	150

Program Schedule

Date	Timing	Programme
29.04.2018 [Sunday]	9.30AM -10.00AM	Inaugural session
	10.00AM-10.10AM	Tea Break
Lecture Session - Day1		
	10.10AM-11.25AM	Role of Green Chemistry in Sustainability: Dr.Ashok Kumar Mishra, FNASc
	11.25AM-12.40PM	Chemistry and Sustainable Energy Management: Dr. Ashok Kumar Mishra, FNASc
	12.40PM-1.40PM	Lunch Break
	1.40PM-2.55PM	Catalysis involving metal Nanoparticles: Dr.Tarashankar Pal, FNASc
	2.55PM-4.10PM	Chemistry and Sustainable Water Management: Dr. Ashok Kumar Mishra, FNASc
	4.10PM-4.20PM	Tea Break
	4.20PM-5.35PM	Catalysis in Micelle: Dr.Tarashankar Pal, FNASc
Lecture Session- Day 2		
30/4/2018 [Monday]	9.30AM-10.45AM	Bio Fertilizers for sustainable Agriculture and Environment Management: Dr. Kunja.Bihari Satapathy
	10.45AM-12.00PM	Sustainable Assessment of Green Polymer based Nanocomposites and Hydrogels: Dr.Prafulla Kumar Sahoo
	12.00PM -12.10PM	Tea Break
	12.10PM -1.25PM	Gel for Environmental Remediation: Dr.Tarashankar Pal, FNASc
	1.25PM-2.25PM	Lunch Break
	2.25PM-3.40PM	Green Nanotechnology: Nanotechnology based Water Purification: Dr. Prafulla Kumar Sahoo
	3.40PM-4.55PM	Herbal Medicines for Primary Health Care:Dr. Kunja.Bihari Satapathy
	4.55PM-5.05PM	Tea Break
	4.05PM-5.35PM	Valedictory Session

List of Resource Persons with topics

Name of Resource persons	Lecture -1	Lecture -2	Lecture -3
Dr.Tarashankar Pal	Catalysis involving metal Nanoparticles	Catalysis in Micelle	Gel for Environmental Remediation.
Dr.Ashok Kumar Mishra	Role of Green Chemistry in Sustainability	Chemistry and Sustainable Energy Management	Chemistry and Sustainable Water Management
Dr. Prafulla Kumar Sahoo	Green Nanotechnology: Nanotechnology based Water Purification	Sustainable Assessment of Green Polymer based Nanocomposites and Hydrogels	XXXXXXXXXXXXXXXX
Dr. Kunja.Bihari Satapathy	Bio Fertilizers for sustainable Agriculture and Environment Management.	Herbal Medicines for Primary Health Care	XXXXXXXXXXXXXXXX

Program Card



Convener

Dr. Ashok Kumar Mishra
Professor, Department of Chemistry
Indian Institute of Technology Madras
(Fellow of National Academy of Sciences, Allahabad)

Coordinator

Dr. Susanta Kumar Biswal
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Centurion University of Technology and Management
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'Science Academies' Lecture Workshop on "Green Chemistry for Sustainable Development"

29 - 30 April, 2018

**Organized by
Department of Chemistry
School of Applied Sciences
Centurion University of Technology and Management
Bhubaneswar, Odisha, India**

Sponsored by



The National Academy of Sciences
Allahabad



Indian Academy of Sciences
Bangalore



Indian National Science Academy
New Delhi



About the Academies

The Indian Academy of Sciences, Bangalore, was founded in 1934 by Sir C.V. Raman. Its objectives include promoting the progress and upholding the cause of science in pure and applied branches. Major activities include publication of scientific journals and special volumes, organizing meetings of the Fellowship and discussions on important topics, recognizing scientific talent, improvement of science education and taking up other issues of concern to the scientific community. Summer Research Fellowships for students and teachers, Refreshers Courses for teachers, Lecture Workshops for students and teachers etc. are part of the programmes under Science Education.

Indian National Science Academy, New Delhi, founded in 1935, is a premier science Academy in the country, plays crucial role in promoting, recognizing and rewarding excellence. Another important task is to publish journals, organize scientific discussions and bring out proceedings and monographs.

The National Academy of Sciences, Allahabad, was founded in 1930. The main objective of the Academy is to provide a national forum for the publication of research work carried out by Indian scientists and to provide opportunities for exchange of views among them.

About the University

The journey of Centurion University of Technology and Management (CUTM) began in the year 2005 by a group of ambitious academicians with aspirations to provide high quality education both nationally and internationally. The first step in this direction was to take over an ailing engineering Institute, the Jagannath Institute for Technology and Management (JITM) in one of the most challenging tribal districts of Odisha and one which was considered to be a left-wing extremist affected area. Subsequently, **JITM was transformed into Centurion University of Technology and Management in August 2010, through an act of Odisha Legislative Assembly. It became the First Multi-Sector State Private University and the first Skill University in the State of Odisha.** The University has five campuses and a number of social entrepreneurial outreach wings that, along with collaborating institutions and networks form its ecosystem. The campuses are located at Paralakhemundi, Bhubaneswar, Rayagada, Bolangir and Chatrapur which house a number of Schools. **Bhubaneswar campus spreads over 40 acres land in the foothill of Barunei hills, near Jatni town. The campus is adjacent to National Institute of Science Education and Research (NISER), Indian Institute of Technology (IIT) Bhubaneswar, All India Institute of Medical Sciences (AIIMS) and Xavier University. The famous 11th-century Lingaraj temple is about 20 kms from this campus. It's about 3Kms from Khurda Road Junction (nearest railway station), 30 Kms from Bhubaneswar Railway Station and 25Kms from Biju Patnaik International Airport to reach the campus.**

Objectives of the Workshop

This Lecture Workshop is substantially intended to benefit the Postgraduate and Doctoral students and faculty members teaching at college and university level. It has been designed to have useful relevance to the curriculum covered in the post-graduate and undergraduate programmes and will also cover some topics at the research level.

Topics to be covered

- Catalysis involving metal Nanoparticles
- Catalysis in Micelle
- Gel for Environmental Remediation
- Role of Chemistry in Sustainability
- Chemistry and Sustainable Energy Management
- Chemistry and Sustainable Water Management
- Green Nanotechnology: Nanotechnology based Water Purification
- Sustainable Assessment of Green Polymer based Nanocomposites and Hydrogels
- Bio Fertilizers for sustainable Agriculture and Environment Management
- Herbal Medicines for Primary Health Care

Resource Persons

1. Dr. Ashok Kumar Mishra, FNASc, Convener
Professor, Department of Chemistry
Indian Institute of Technology Madras, Chennai - 600036
2. Dr. Tarashankar Pal, FNASc
Professor (Retd.), Department of Chemistry
Indian Institute of Technology Kharagpur
Kharagpur-721302
3. Dr. Prafulla Kumar Sahoo
Professor, Department of Chemistry
Utkal University, Odisha - 751004
4. Dr. Kunja Bihari Satapathy
Professor (Retd.), Department of Botany
Utkal University, Odisha - 751004

How to Apply

Faculty members at University/College level and students at the post graduate & doctoral level are requested to apply for participation by sending an application mentioning educational qualifications, address of communication, mobile number and e-mail address to the workshop coordinator by post/e-mail on or before **22nd April, 2018**. **There is no registration fee to attend the workshop.** No TA/DA will be provided to the participants.

Invitation Card

<p>You are cordially invited to join us in the</p> <p>Science Academies' Lecture Workshop on GREEN CHEMISTRY FOR SUSTAINABLE DEVELOPMENT</p> <p>29th and 30th April 2018</p>  <p>Centurion UNIVERSITY</p> <p>Organized by Department of Chemistry School of Applied Sciences Centurion University of Technology & Management Bhubaneswar, Odisha</p> <p><u>Inaugural Session</u></p> <p>Date : 29.04.2018 Time : 9.30 a.m. Venue : Conference Hall, Aryabhata Building</p> <p>Chief Guest Prof. Jagannath Padhi Director, Centurion University of Technology and Management Bhubaneswar, Odisha</p> <p>Guest of Honour Prof. Tarasankar Pal Retd. Prof. at Dept. of Chemistry, IIT Kharagpur</p>	<p><u>Valedictory Function</u></p> <p>Date : 30.04.2018 Time : 4 p.m. Venue : Conference Hall, Aryabhata Building</p> <p>Chief Guest Prof. Supriya Pattanayak Deputy Vice Chancellor, CUTM, Odisha</p> <p>Guest of Honour Prof. Smita Mishra Panda Director, Research and Development Cell, CUTM, Odisha</p> <p>Dr. Susanta Kumar Biswal Coordinator</p> <p>Dr. Ashok Kumar Mishra Convener</p> <p>Sponsored by:</p>    <p>The National Academy of Sciences Allahabad</p> <p>Indian Academy of Sciences Bangalore</p> <p>Indian National Science Academy New Delhi</p>
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PHOTO GALLERY



