



हंसराज कॉलेज
— दिल्ली विश्वविद्यालय —

HANSRAJ COLLEGE
University Of Delhi
NAAC Grade A+ with CGPA 3.62

2021-2022

Name of Society : Chemical Society-Rasayanatva

Name of the Event : Webinar on “Environmentally benign solvents for sustainable development”

Date of the Event : 23.10.2021

Resource person: Prof. Ramesh L. Gardas

On October 23, 2021, a webinar was conducted from 11:00 am onwards, through Google Meet by the Department of chemistry, Hansraj College together in collaboration with IQAC. Dr. Indrani (Co-ordinator) and Dr. Satish Chand (Convenor, Chemical Society) organized the webinar which went underway with the welcome address by Dr. Satish Chand, Associate Professor, Hansraj College. In this webinar, Prof. Ramesh L. Gardas was the resource person.

Prof. Ramesh L. Gardas currently joined with IIT Madras as an associate professor in chemistry has more than 19 years of research and 9 years teaching experience. His major research interests include Ionic Liquids, Chemical Thermodynamics; Fluid Phase Equilibria, Group Contribution methods; Structure-Property correlations. He started the webinar by introducing the audience with the sustainable development goals which should be acceptable, equitable and viable considering social, environmental and economic aspects. He discussed what the concept of Green Chemistry is and how it is effectively reduces negative human health and environment effects while offering a strategic pathway to build a sustainable future. He discussed the problems with volatile organic compounds (VOCs), need for alternative solvents as well as strategies of VOCs replacement. He threw light on history of Ionic liquids and showed comparison between various organic solvents and ionic liquids in order to show how they can bring a lot of possibilities for sustainable development. He discussed how Ionic liquids are very useful in various fields including synthesis and catalysis, process technology, electrochemical and thermodynamic applications and many more. He ended his lecture through a simple quote “Be Positive, No negative”. After the lecture, questions from the attendees were taken up. Dr. Satish Chand thanked him for his undeniably excellent lecture and the webinar ended with vote of thanks from Dr. Indrani.

Feedback of the session were secured in the feedback form.

Chemical Society: Rasayanatva [2021-22]



FEEDBACK ANALYSIS

TOTAL NO. OF PARTICIPANTS: 90-100

FEEDBACK OBTAINED: 65

FEEDBACK RESPONSE OBSERVATIONS

- ★ 77% of the participants found the session to be very useful.
- 71% of the attendees rated the webinar as excellent.
- ★ 75% of the participants appreciated the knowledge of the speaker as excellent.
- ★ 83% of the participants found the session overall interesting, informative and engaging.

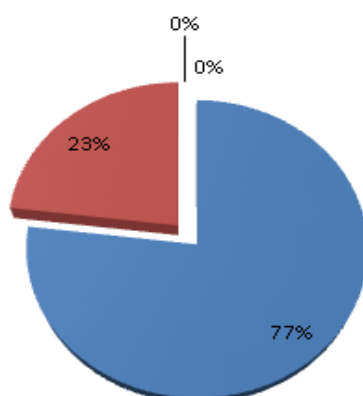
FEEDBACK DATA

WEBINAR	EXCELLENT	VERY GOOD	GOOD	AVERAGE
USEFULNESS	50	15	--	--
LECTURE EFFECTIVENESS	46	18	1	--
KNOWLEDGE OF PRESENTER	49	16	--	--
OVERALL REMARKS	54	9	2	--

PICTORIAL REPRESENTATION OF FEEDBACK ANALYSIS

USEFULNESS

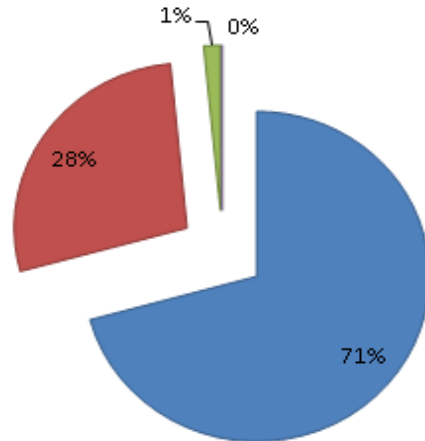
■ EXCELLENT ■ VERY GOOD ■ GOOD ■ AVERAGE





LECTURE EFFECTIVENESS

■ EXCELLENT ■ VERY GOOD ■ GOOD ■ AVERAGE



KNOWLEDGE OF PRESENTER



OVERALL REMARKS

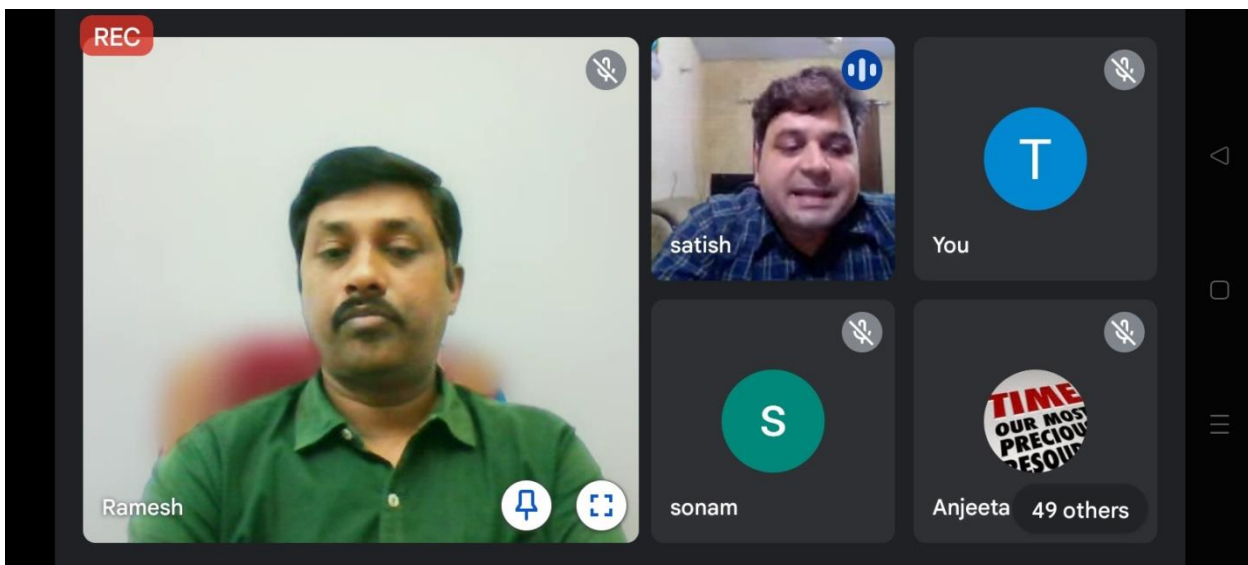




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GLIMPSES OF THE WEBINAR





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REC

Environmentally benign Solvents
for
Sustainable Developments

Ramesh L. Gardas
Department of Chemistry
Indian Institute of Technology Madras
gardas@iitm.ac.in

23 Oct 2021

Ramesh is presenting

satish

You

sonam

Anjeeta 48 others

REC

SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD

<https://www.un.org/sustainabledevelopment>

Ramesh is presenting

satish

You

Ramesh

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Problems with VOC's

- ❖ VOCs have high vapour pressure and low water solubility.
- ❖ major contributor to
 - air pollution
 - ozone depletion
 - global warming
 - climatic changes and
 - human health-related problems.

Ramesh is presenting

Ramesh

You

satish

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Searching for Green Solvents

- Low Polarity
- High Polarity
- Low Basicity
- High Basicity
- Aprotic
- Protic

Ramesh is presenting

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You

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Literature Overview

78,113 document results

Documents by subject area

Subject area	Documents
Chemistry	14312
Materials Science	26118
Chemical Engineering	26447
Public and Economic	26789
Engineering	15893
Biotechnology, Genetics and Molecular Biology	1887
Energy	1988
Environmental Science	1525
Pharmaceutical Technology and Pharmaceutics	1214

Documents by subject area

- Pharmaceutics (21.4%)
- Chemical Engin. (21.4%)
| Materials Sci. (21.4%) |
| Pharmaceutics (21.4%) |
| Engineering (21.4%) |
| Biotechnology, Genetics and Molecular Biology (21.4%) |
| Energy (21.4%) |
| Environmental Science (21.4%) |
| Public and Economic (21.4%) |
| Chemical Engineering (21.4%) |
| Materials Science (21.4%) |
| Chemistry (21.4%) |

78,113 document results

86 on 01 OCT 2022

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ILs - Applications

Chemical Processing

Cellulose Processing

Engineering Fluids

Electrolytes

Functional Liquids

www.basf.de

BASF

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ILs for Petroleum Industry

- Ionic Liquids for Enhanced Oil Recovery
- Dissolution of Tank Bottom Sludge - Oil India Limited
- Synthesis and characterization of ionic liquids various families
- Solubility study of ionic liquids with the tank bottom sludge at the in-situ conditions, typically, close to room temperatures.
- Rheology study of ionic liquids in combination with the tank bottom sludge
- Study the effect of co-solvent

Enhanced Oil Recovery

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ILs as Electrolytes for DSSC Application 7
DST-SERI

➤ Ionic Liquids as Electrolytes for DSSC - DST (SERI)

➤ Stability issues with electrolyte :

- Freezing at low temperature
- Expansion or evaporation at high temperature
- Contains VOCs so must be well sealed
- Solvents permeate plastics used in manufacture of cells

Synthesis suitable ILs and study their physical properties

Due to low vapour pressure, ILs beneficial : can reduce concerns about electrolyte loss from the cell.

In addition to the development of novel electrolytes, there is a drive to replace I_2/I_3^- as the solution-phase redox species, as it is corrosive and absorbs visible radiation.

Ramesh is presenting

Ramesh

You

satish

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