



# Centre for Green Chemistry and Sustainability (Pioneering Scientific Excellence-PSE)

## About

The department of Chemistry proudly hosts the **Centre for Green Chemistry and Sustainability**, a pioneering initiative dedicated to addressing pressing environmental challenges through innovative chemical science solutions. This center fosters interdisciplinary collaborations and builds partnerships with renowned institutions, organizations, and NGOs on both national and international fronts, driving sustainable advancements for a better future.



Front View of CGCS



Centre for Green Chemistry and Sustainability is also Madhya Pradesh Chapter of Green Chemistry Network Centre, Delhi established by Prof. R.K. Sharma by collaboration of American scientist Prof. Paul Anastas and Prof. John C. Warner. Prof. Paul Anastas, often called the **"father of green chemistry."**



Prof. Paul Anastas



Prof. John C. Warner



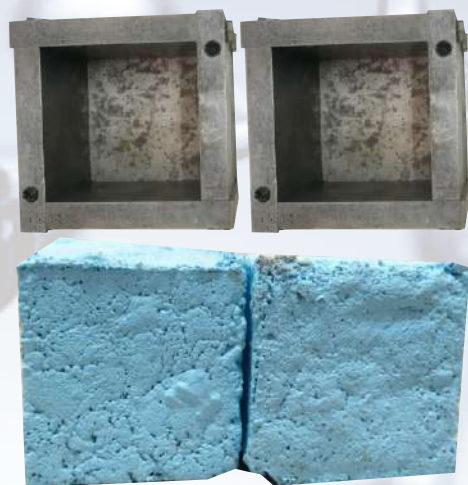
Prof. R.K. Sharma



## Product Development

### Product Development Plastic Waste Utilization:

Manufacturing of hydrocarbon oil from plastic waste which is being utilized in paint production



### Plastic Waste Bricks

Manufacturing bricks for building construction using plastic waste, sand, fly ash, and coke with the above machine (R&D stage)

### Manufacturing of Night Glowing Emulsion Paint

A newer utilization of colorless hydrocarbon oil obtained from plastic waste



- This paint is free from toxic heavy metal
- Cost effective
- Eco-friendly
- High durability



### Utilization of Bio-Waste

Manufacturing of Green Distemper Paint and Wall Putty





## Arsenic Removal Device

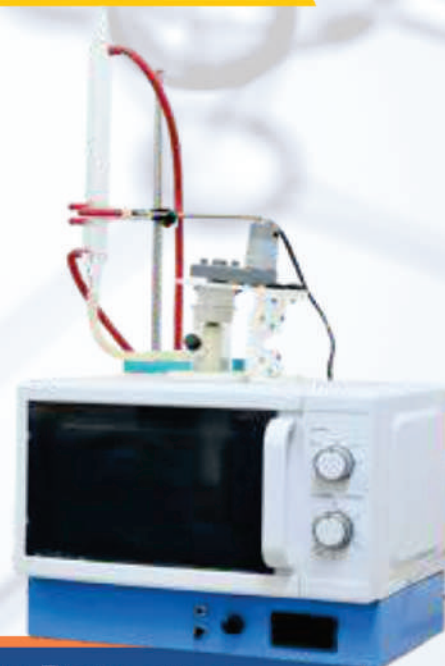
Assembly for arsenic removal from drinking water



We have developed an assembly for removal of arsenic from drinking water and published patent of this assembly

## Mechanical grinding assisted microwave assembly

Development of New Green Method for Synthesis of Organic/ Inorganic Compounds



## Smart Humidity Detector

Design and manufactured Smart Humidity Detector

Technology of Smart Humidity Detector has been transferred to ISO- Tech Pvt. Ltd.

They manufacture humidity detector using our technology and a sample of the instrument provided to us which is available at our centre





## Centre for Green Chemistry & Sustainability AKS University, Satna



**Manufacturing Different Types of Wall Paints and Wall Putty Without Generating any Waste**

(Maximum Production 200L Per Day)

### Green distemper paint

- Cost effective
- Manufactured from fallen leaves of plants
- Non-hazardous and Eco-friendly
- This paint is free from toxic heavy metals
- High durability
- Patent filed



### Acrylic emulsion

- Cost effective
- Acrylic emulsion
- Non-hazardous chemical used in manufacturing
- Free from toxic heavy metals



### Night glowing emulsion paint

- Cost-effective night-glowing paint manufactured by utilizing plastic waste-based hydrocarbon oil
- Free from toxic heavy metals
- Patent published



**Manufacturing Wall Putty (Maximum Production 200kg Per Day)**

- Water Proof Wall Putty
- White Cement Based Wall Putty
- Acrylic Wall Putty



**Good Quality  
at Low Cost**

**Environmentally Benign**

**Applied in Entire University Campus**

**Local People are also Purchasing & Using**

## International Conference on Advances in Science & Technology for Sustainable Development Goals(IC-ASTSDGs-2024)

**1000+  
Participants**

**Hybrid  
Mode**



**Proceedings**

ISBN:978-  
8197130304

**Organized by:  
Basic Science**

**Convener  
Dr. Shailendra  
Yadav**

**Keynote Speakers,  
Invited Speakers and  
Delegates from 7+  
Countries**

**After The Grand Success of IC-ASTSDGs-2024**





Current Research in Green and Sustainable Chemistry 4 (2021) 100114

Contents lists available at ScienceDirect

### Current Research in Green and Sustainable Chemistry

journal homepage: [www.elsevier.com/journals/current-research-in-green-and-sustainable-chemistry/2686-0865](http://www.elsevier.com/journals/current-research-in-green-and-sustainable-chemistry/2686-0865)

#### Natural products as environmentally safe and green approach to combat Covid-19

Dheeraj Singh Chauhan<sup>a,b</sup>, Shailendra Yadav<sup>c</sup>, M.A. Quraishi<sup>d,\*</sup>

Citations: 16

Cite score: 11.6 (Scopus Indexed)

Current Research in Green and Sustainable Chemistry 5 (2022) 100260

Contents lists available at ScienceDirect

### Current Research in Green and Sustainable Chemistry

journal homepage: [www.elsevier.com/journals/current-research-in-green-and-sustainable-chemistry/2686-0865](http://www.elsevier.com/journals/current-research-in-green-and-sustainable-chemistry/2686-0865)

#### Environmental benign synthesis of some novel biologically active 7-hydroxy-4-methyl coumarin derivatives

Shailendra Yadav<sup>a,\*</sup>, Sushma Singh<sup>a</sup>, Chitrasen Gupta<sup>b</sup>

Citations: 18

Cite score: 11.6 (Scopus Indexed)

## Green Chemistry



### CRITICAL REVIEW

Check for updates

Cite this: DOI: 10.1039/d3gc05207a

#### Principles and theories of green chemistry for corrosion science and engineering: design and application

Chandrabhan Verma<sup>a</sup>,<sup>\*</sup> Dheeraj Singh Chauhan<sup>a,b</sup>, Ruby Aslam<sup>c</sup>, Priyabrata Banerjee<sup>a</sup>, Jeenat Aslam<sup>b</sup>, Taiwo W. Quadri<sup>c</sup>, Saman Zehra<sup>a</sup>, Dakeshwar Kumar Verma<sup>a</sup>, Mumtaz A. Quraishi<sup>d</sup>, Shikha Dubey<sup>a</sup>, Akram Alfantazi<sup>e</sup> and Tahir Rasheed<sup>f</sup>

Citations: 59

IF: 9.3

Results in Chemistry 10 (2024) 101743

Contents lists available at ScienceDirect

### Results in Chemistry

journal homepage: [www.sciencedirect.com/journal/results-in-chemistry](http://www.sciencedirect.com/journal/results-in-chemistry)

#### A review on sustainable synthesis methods, characterization and applications of inorganic metal complexes: Recent advances and future approaches

Shailendra Yadav<sup>a,b,\*</sup>, Sankatha Prasad Sonkar<sup>a</sup>, Kanha Singh Tiwari<sup>a</sup>, Mrityunjay Shukla<sup>a</sup>

Citations: -

IF: 2.5

Journal of Molecular Structure 1334 (2025) 141781

Contents lists available at ScienceDirect

### Journal of Molecular Structure

journal homepage: [www.elsevier.com/locate/molstr](http://www.elsevier.com/locate/molstr)

#### Oxadiazole-2-thione based Co(II) complexes as antiproliferative agents: Synthesis and structural characterization

Ajay Vishwakarma<sup>a</sup>, Alok Shukla<sup>b</sup>, Sankatha P Sonkar<sup>c</sup>, Swati Singh<sup>b</sup>, Diptee Mitra<sup>d</sup>, Ramesh Chandra<sup>e</sup>, Shailendra Yadav<sup>c</sup>, A. Acharya<sup>b</sup>, M.K. Bharty<sup>a,g</sup>

Citations: -

IF: 4.0

Scientific African 26 (2024) e02456

Contents lists available at ScienceDirect

### Scientific African

journal homepage: [www.elsevier.com/locate/sciaf](http://www.elsevier.com/locate/sciaf)

#### Evaluation of thiocarbonylhydrazide derivative as corrosion inhibitor for C1018 carbon steel in 3.5% NaCl + 500ppm HAc solution: Electrochemical, SEM, FTIR and computational studies

Ikenna B. Onyeachu<sup>a,\*</sup>, Dheeraj S. Chauhan<sup>b,\*</sup>, Mumtaz A. Quraishi<sup>b</sup>, Shailendra Yadav<sup>b</sup>, Savas Kaya<sup>c</sup>, Goncagul Serdaroglu<sup>d</sup>

Citations: - IF: 2.7

Results in Chemistry 5 (2023) 100733

Contents lists available at ScienceDirect

### Results in Chemistry

journal homepage: [www.sciencedirect.com/journal/results-in-chemistry](http://www.sciencedirect.com/journal/results-in-chemistry)

#### A brief review on natural dyes, pigments: Recent advances and future perspectives

Shailendra Yadav<sup>a,\*</sup>, Kanha Singh Tiwari<sup>a</sup>, Chitrasen Gupta<sup>b</sup>, Mahendra Kumar Tiwari<sup>c</sup>, Arbaaj Khan<sup>a</sup>, Sankatha P. Sonkar<sup>d</sup>

Citations: 145\*

IF: 2.5

**Highest cited article of University within 2 years**