

Sri Sathya Sai College for Women, Bhopal

CHEMISTRY NEWSLETTER 2023-24

# CHEMOSPARK



"नमस्ते शारदे देवी काश्मीरपुरवासिनि  
त्वामहं प्रार्थये नित्यं विद्यादानं च देहि मे !!!"

## PATRON

Dr Pratibha Singh ,Director

Dr Archana Srivastava,Principal

Dr. Neena Arora, Head of Department

## FACULTY

Dr Kiran Shandilya

Dr. Pooja K. Chaggar

Dr. Varsha Saxena

Mrs. Supriya Singh

## EDITORS

Dr.Varsha Saxena

Mrs Supriya Singh

Student Editors (M.Sc. III sem)

Ms Shreya, Ms Anjana,

Ms Shrija, Ms Kanchan



# CHEMSPARK



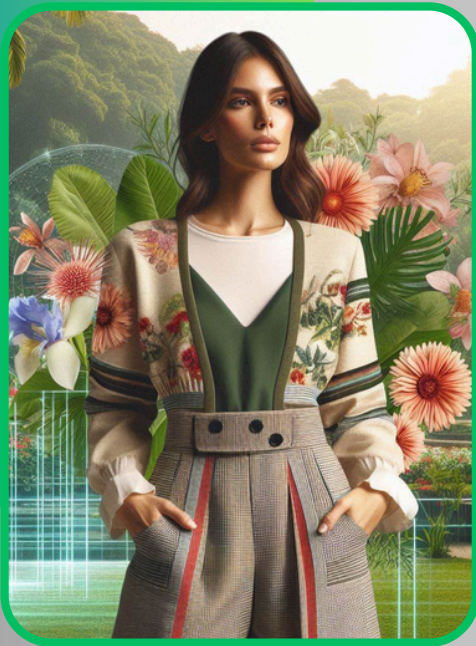
## COVER STORY

### FAST FASHION : DARK SIDE

It's time to rethink our relationship with fast fashion. This term refers to the quick production of low-cost clothing by large retail brands. It's time to say goodbye to quick fashion and welcome a lifestyle that's healthier for both the planet and ourselves.

Fast fashion relies heavily on synthetic dyes that contain toxic heavy metals like formaldehyde and the extensive use of pesticides in cotton farming. Petroleum-based fibers like polyester add to environmental harm, contributing to microplastic pollution that affects marine life and our food chain.

Misleading terms like "stone-washed" and "pre-shrunk" often give the impression that harmful chemicals are fully washed out during garment production. In reality, heavy metals such as antimony, cadmium, lead, mercury and chromium are commonly used in dyeing and printing processes



### Buy Less, Choose Well, Make it last

.For more sustainable fashion choices, organic cotton offers an alternative. Grown without harmful pesticides it supports soil health, biodiversity and human well-being. Linen, made from flax, is another eco-friendly option requiring less water and fewer pesticides than cotton. Additionally, alpaca fiber is a sustainable and ethical choice; alpacas are low-impact animals that tread lightly on the environment, helping to reduce soil erosion.

#### BLUESIGN

The Bluesign certification system evaluates the use of chemicals, materials, processes, and finished textiles against five sustainability criteria: resource productivity, consumer safety, water emission, air emission, and occupational health and safety. Bluesign APPROVED fabrics are tested for consumer safety against a long list of chemicals. This certification ensures that textiles are produced using sustainable practices evaluating the entire supply chain.



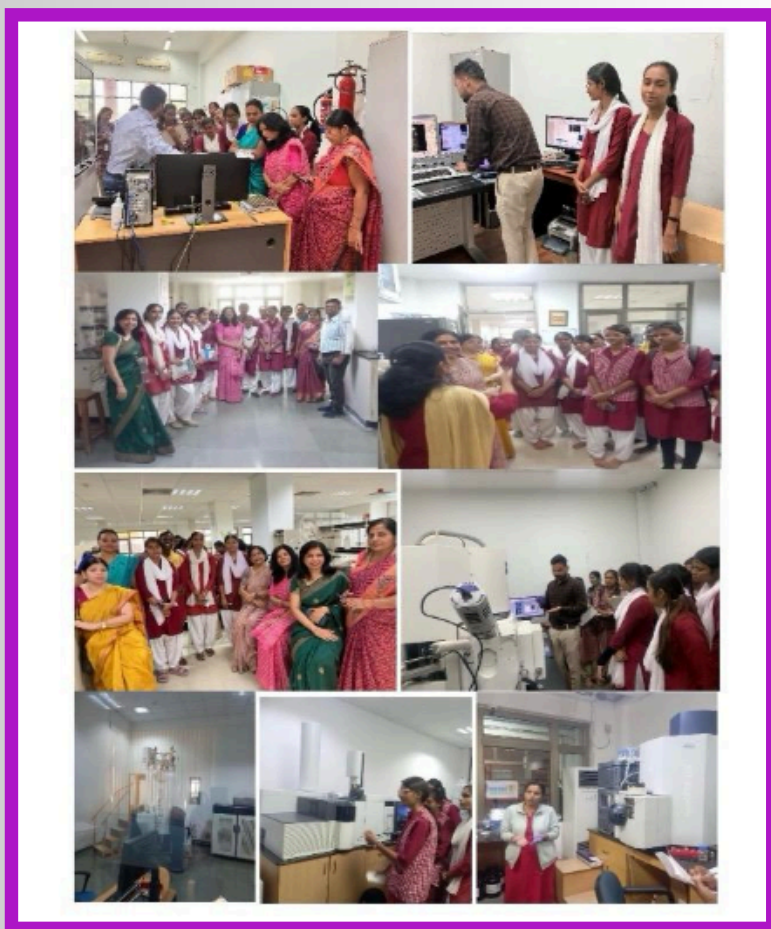
# CHEMSPARK

## Departmental Activities 2023-24

Visit to IISER, Bhopal  
on 17-10-2023.

16 students, lab technician  
and 5 faculty of chemistry  
department visited IISER  
central instrumentation  
facility.

Students were excited to see  
latest research instruments.  
They asked several questions  
while interacting with  
scientists there.



Visit to Regional  
Science Centre, Bhopal  
on 22-08-2023.

Students of science faculty  
visited Regional Science Centre  
& attended lecture on  
"Chandrayaan-3" mission by Dr.  
Anil Bharadwaj, Director, National  
Physical Laboratory, Ahmedabad,  
on 22.08.23. Later, the students  
also visited the robotics lab



# CHAMPARK

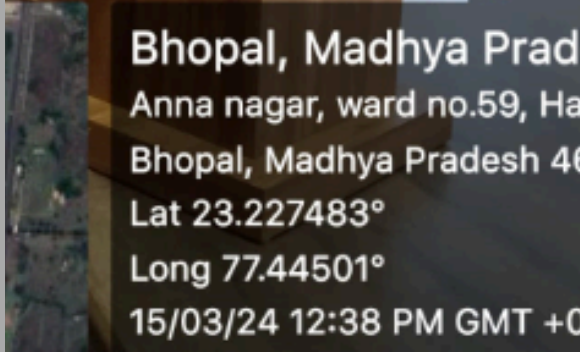
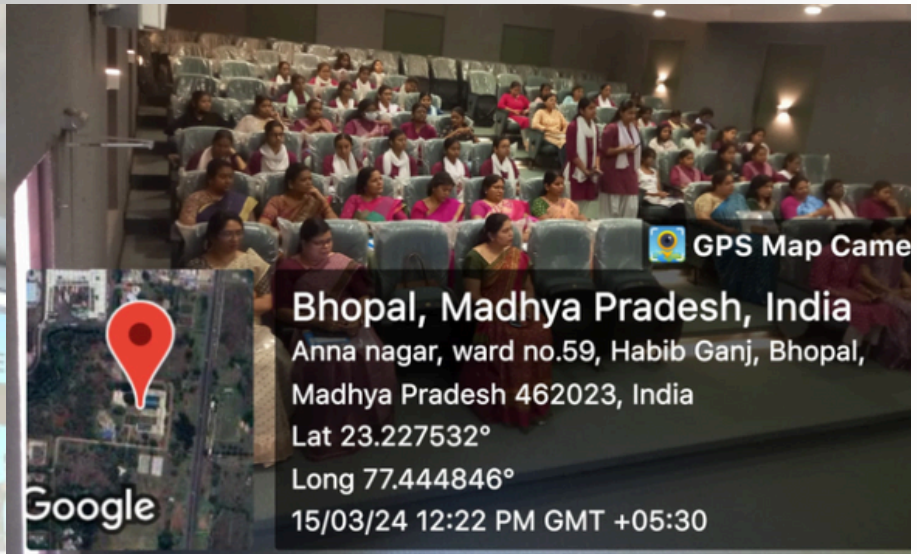


16 October - 16 students and 2 faculty (Dr Neena Arora & Dr Kiran Shandilya ) went for an educational visit to Pt. Khushilal Ayurvedic, unani college, Homeopathy college



## Workshop on Career in Science 15-03-24

. Dr Archana Singh, Principal scientist, AMPRI and Dr Paramita Das, Asstt. Prof, IISER enlightened the students with vast and diverse information about careers in science and various fellowships available for girls in both India and abroad.



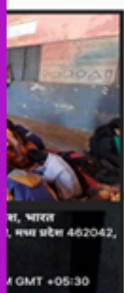
## Teachers Training Orientation under Tide Turners Plastic Challenge (UNEP) in Collaboration with WWF ON 24-01-2024



# CHEMSPARK

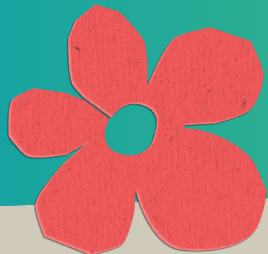
## Guest lecture and Extension Activity

July-2023: Dr. Neena Arora invited as Session chair for Technical Session-II, in 4th International Conference on interdisciplinary approaches in Science, Engineering and Technology organized by Department of Applied Science, Sagar Institute of Research & Technology - Excellence, Bhopal on 27-28 July, 2023.



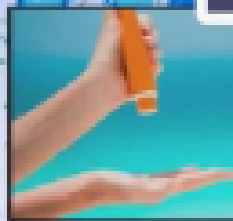
January 2024 - Dr Pooja Kaur and Mrs. Supriya Singh visited Godgram Chotakheda school and anganwadi with students on 25.01.24. and delivered lecture on Health and hygiene to make them aware about environment and society

# Creative brilliance by students



## THE WORKING OF A SUNSCREEN

Before Going Out On A Sunny Day, we Use Sunscreen. Behind The Working Of A Sunscreen, Has A Chemistry Background. The Sunscreen Uses A Combination Of Organic And Inorganic Compounds To Act As A Filter For Incoming Ultraviolet Rays.



Sunblocks Scatter Away UV Light; So That It Is Unable To Penetrate Deep Into The Skin. Sunblocks Contain Complex Chemical Compounds Like Zinc Oxide Or Titanium Oxide, Which Prevent The UV Rays To

UV penetration into the layers of the skin



By-Uzma Khan, B.Sc. 1st year

**ZOOMING AROUND IN CARS/BIKES??**  
Diesel + Petrol  
**Fuel Purification**  
Centrifugation → 1  
Washing → 2  
Filtering → 3  
Settling → 4  
Vacuum drying → 5  
Quilcline → 6  
Synthetic Zeolites

**CULINARY WIZARD!**  
VANSHIKA KULSHRESTHA BSC BIOTECH 1<sup>st</sup> yr  
 $C_{12}H_{22}O_{11}$   
NaCl  
 $CH_3COOH$

**FIRE EMERGENCY? FIRE EXTINGUISHER**  
CO<sub>2</sub> ✓ ✓ ✓

**SCRUBBING AWAY GRIME**  
Detergent & Bleach

**WANT LUSH PLANTS? FERTILIZER**  
RAW H<sub>2</sub>O → TREATED H<sub>2</sub>O  
Dirt → Bacteria → Chlorine

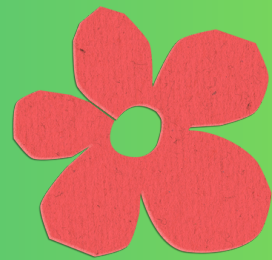
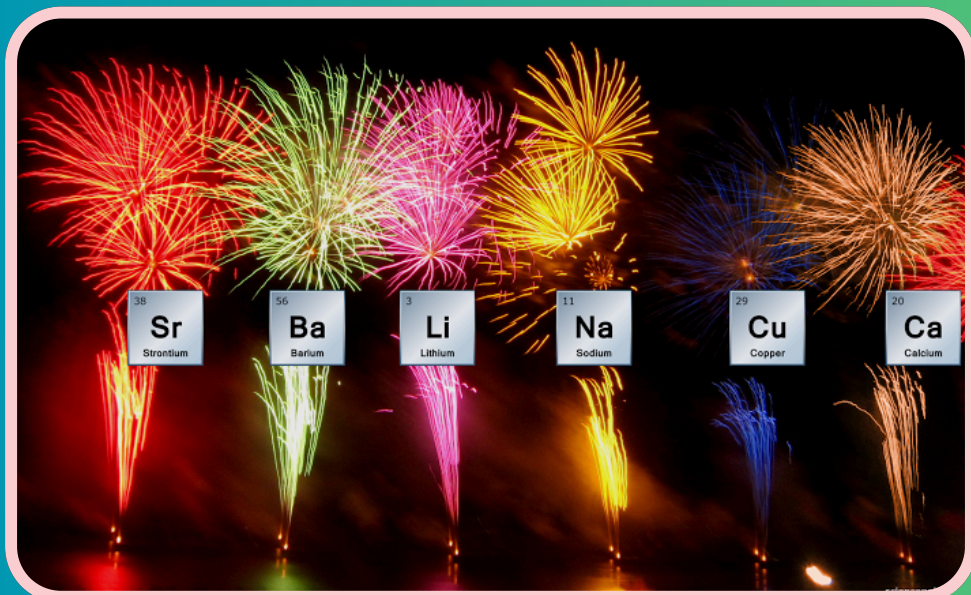
**SKIN CARE ROUTINE?**  
• Glycolic Acid, Bakuchiol  
Helps clear pores of smooth out fine line as uneven skin texture!!!  
• Vitamin C, Niacinamide  
Brightens & Hydrates the skin  
• Azelaic Acid  
Tackles hyperpigmentation, rosacea, or acne concerns!!!

**CHEMISTRY IN EVERYDAY LIFE**

## INTERESTING FACTS ABOUT CHEMISTRY

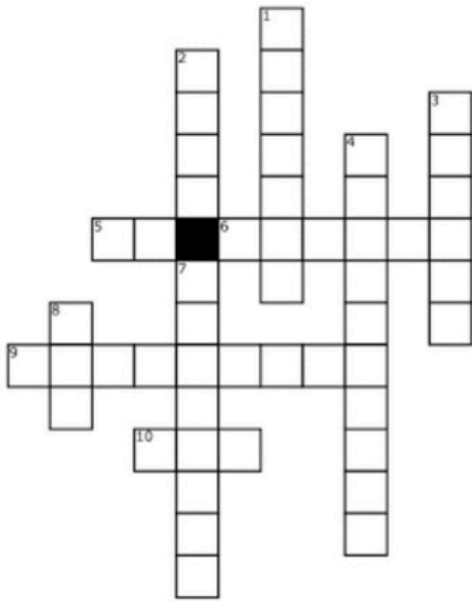
- Mixing sufficient quantity of salt into a full glass of water, the water level will go down as salt have a capacity to retain water.
- Unlike many substances, water expands as it freezes.
- Air behaves as liquid at temperature of 190 degrees centigrade.
- Many radioactive elements actually glow in the dark.
- "J" is the only letter which is not found in the periodic table.
- Dynamite contains peanuts as a part of its ingredient.
- Lemons have more sugar than strawberries.
- We cannot taste anything without saliva.

Made By -  
Aysha Siddiqui (B.Sc. 1st year)



# FUN FACTS

## Chemistry CrossWord



### Across

5. What is the chemical symbol of Magnesium?
6. Who made the billiard ball model of the atom?
9. What is the name of the Element Ge?
10. How many electrons does Helium Have?

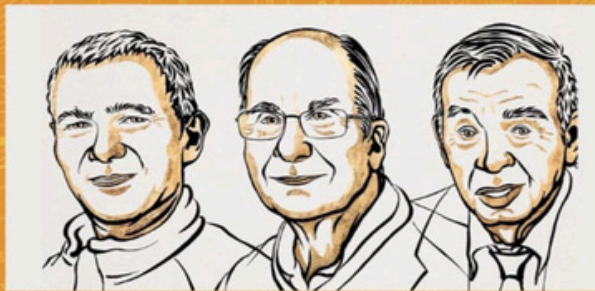
### Down

1. What overall charge does an atom have?
2. what is the name of the element Au?
3. How many neutrons does Calcium have?
4. Who invented the billiard ball model?
7. Who came up with the idea of neutrons?
8. How many protons does neon have?

## Chemistry Word Search

V	G	P	M	O	L	E	C	U	L	E	I	L	U
P	L	A	S	M	A	S	S	N	U	M	B	E	R
R	A	H	L	D	V	N	N	U	R	V	K	R	W
R	S	R	M	I	O	N	I	C	E	B	A	S	E
A	O	O	E	E	I	T	B	P	A	X	V	A	L
D	L	X	N	B	S	I	N	H	C	M	O	L	E
I	U	I	D	J	I	S	H	A	T	W	G	C	M
O	T	D	E	L	E	O	A	S	I	W	A	H	E
A	I	A	L	X	R	T	Y	E	O	O	D	E	N
C	O	T	E	F	W	O	Y	J	N	G	R	M	T
T	N	I	E	I	K	P	A	A	L	L	O	Y	G
I	C	O	V	A	L	E	N	T	R	O	P	Y	F
V	G	N	G	C	O	M	P	O	U	N	D	J	B
E	P	H	G	J	R	C	H	M	W	A	C	I	D

ACID	COMPOUND	ISOTOPE	OXIDATION
ALCHEMY	COVALENT	LAVOISIER	PHASE
ALLOY	ELEMENT	MASS NUMBER	PLASMA
ATOM	ENTROPY	MENDELEEV	RADIOACTIVE
AVOGADRO	IBN HAYYAN	MOLE	REACTION
BASE	IONIC	MOLECULE	SOLUTION



Awarded the prize for the discovery and synthesis of **quantum dots**, nanoparticles so small that their size determines their properties.

Quantum dots now illuminate computer monitors and television screens based on QLED technology. They also add nuance to the light of some LED lamps, and biochemists and doctors use them to map biological tissue.

**PRIZE AMOUNT:**  
**11 million Swedish kronor,**  
to be shared equally between the three laureates.

