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PRESENTATION ON

PYROTECHNIQUES-SOUND GENERATING

CUFS 2416 EXPLOSIVE AND POST BLAST INVESTIGATION

B.SC. FORENSIC SCIENCE (SEM 6)

SCHOOL OF FORENSIC SCIENCES
BHUBANESHWAR CAMPUS

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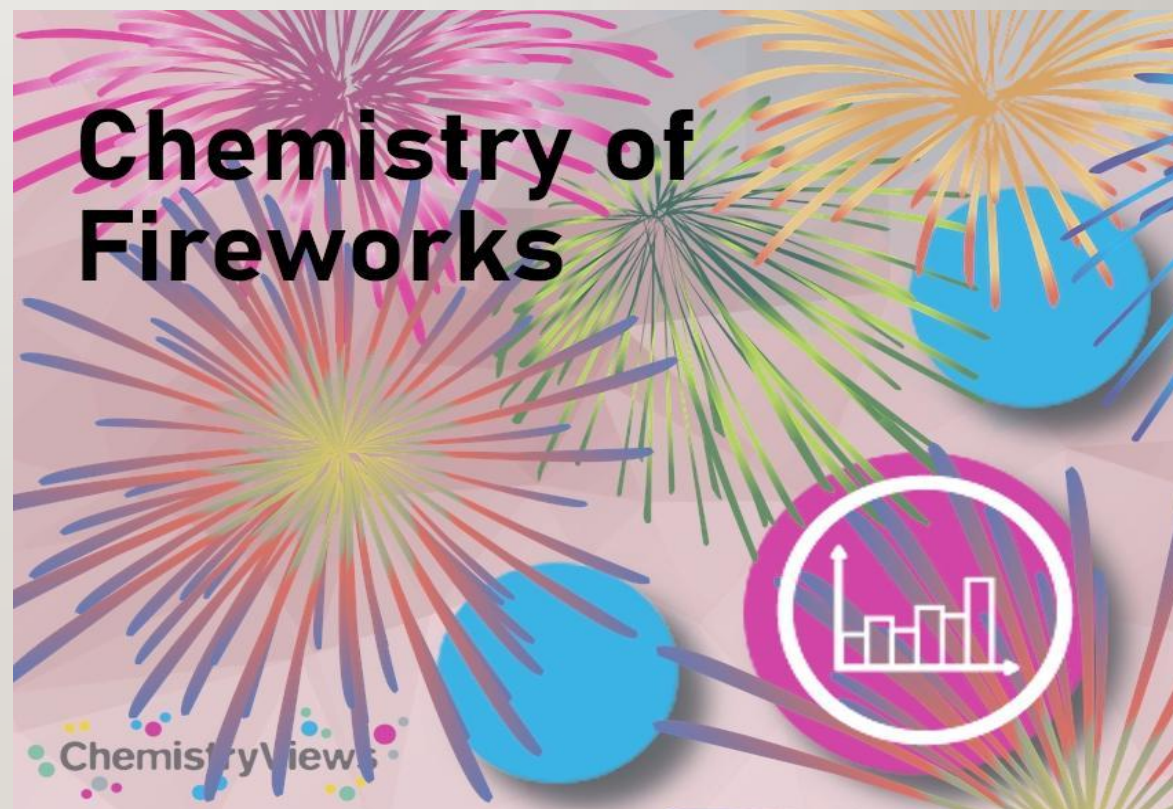


Figure: chemistry view of fire works.

A – WHAT ARE PYROTECHNIQUES ?

- A pyrotechnic composition is a substance or mixture of substances designed to produce an effect by heat, light, sound, gas/smoke or a combination of these, as a result of non-detonative self-sustaining exothermic chemical reactions.
- An effect which undergoes a chemical reaction, used to produce visible or audible effect by means of Combustion, Deflagration and Detonation.

B – PYROTECHNIQUES-SOUND GENERATING.

- As the gases produced by the above reaction have a very small volume to expand, which is a result of careful engineering maintains a high pressure on the gases which at last produces an explosive sound when the pressure of gases exceeds the forces holding the cartridge. This results in the loud bang produced by the firecrackers.
- As we all are aware that not all firecrackers produce the same sound. By controlling the shape of the firecracker cartridge and chemicals inside the tube, we can control the sound made by the firecrackers.

PYROTECHNIQUES-SOUND GENERATING.

- As we know different chemicals have a different reaction time. The reaction times to the chemical being burned can be either fast or slow.
- Slow reacting chemicals are behind the vibrating sound. On the other hand, fast reaction gives an explosive sound.
- On the basis of their arrangements and chemical reactions the sound generate and it varies from one chemical to another.

TYPES OF SOUNDS GENERATED BY PYRO TECHNIQUE (FIREWORKS)

- Whistling sounds
- Crackling noise
- Loud bangs



figure:

Pyrotechnic [gerbs](#) used in the entertainment industry



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SOUNDS GENERATE.

- Lead oxide ,noise In the fire cracker comes from lead oxide ,which turns into lead atoms as the fire cracker explode .
- These lead atoms vaporize and the vapor makes the sound.
- Benzoate burn one layer at a time, and this is slower than the speed of sound ,this emits the gas produce in spurts in the empty half of narrow tube which vibrates and makes a whistling sound .

COMMON USES

- Fire works
- Oxygen candles
- Simulation of battle noise and effects (military purposes)
- Gas pressure blasting in mining , quarrying.



Figure: image of firing crackers

REFERENCES

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THANK YOU.

