



Pushpa Gujral
SCIENCE CITY

THE SCIENCE OF **WOW**

BASICS OF WORKING AND PRINCIPLE OF 3D THEATRE

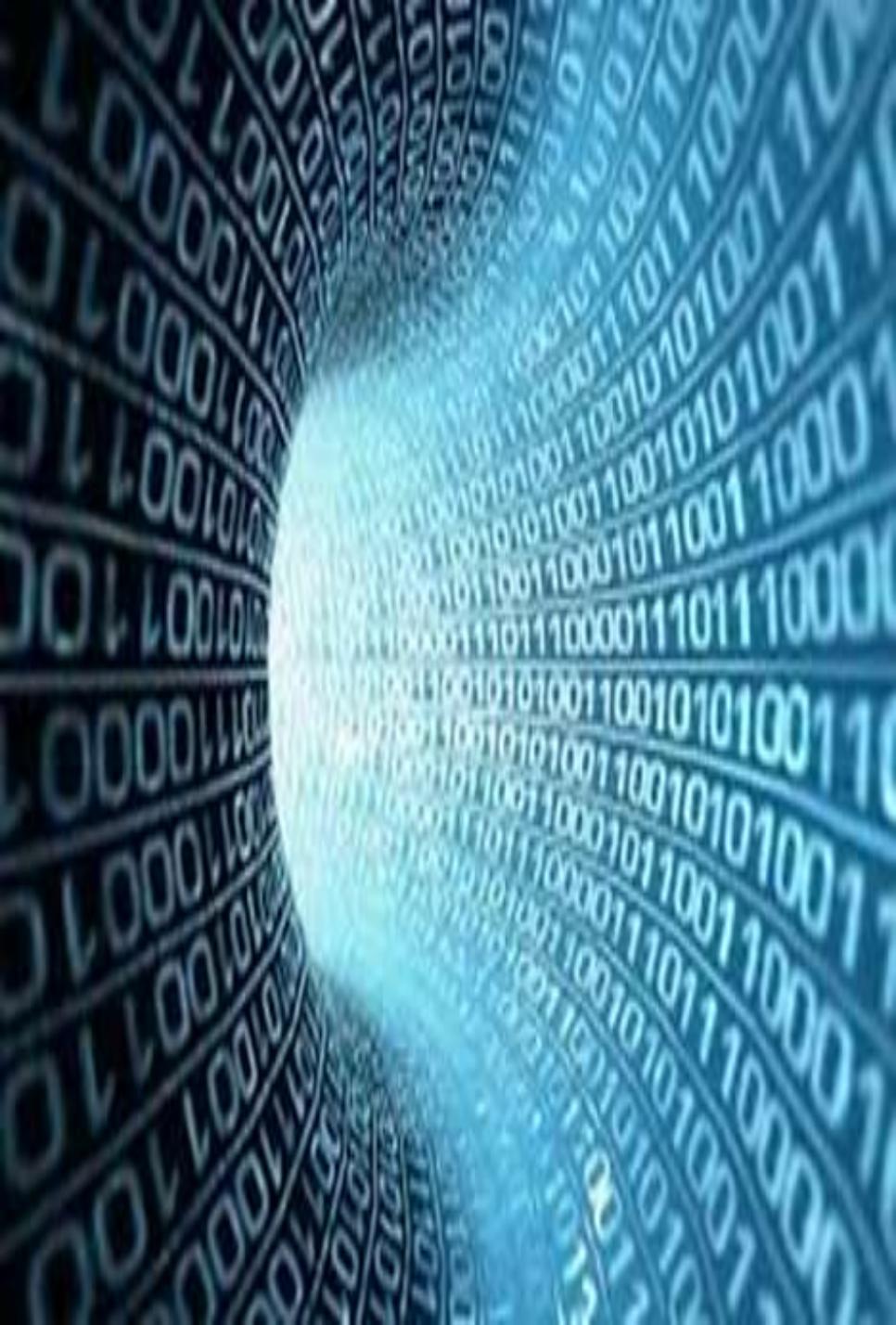


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3D Technology



- ▶ 3D stands for three dimensional technology.
- ▶ A picture that has or appears to have height, width and depth is **three-dimensional (or 3-D)**.
- ▶ A picture that has height and width but no depth is **two-dimensional (or 2-D)**.
- ▶ 3D technology is basically an illusion of depth. It is a virtual representation system that tries to create or reproduce the moving object in third dimension.



How can we see a 3D movie?



- ▶ In Science City, we use linear polarized glasses to produce 3d effect.
- ▶ Two images are projected superimposed onto the same screen through orthogonal polarizing filters (Usually at 45 and 135 degrees).
- ▶ The viewer wears linearly polarized eyeglasses which also contain a pair of orthogonal polarizing filters oriented the same as the projector.
- ▶ As each filter only passes light which is similarly polarised and blocks the orthogonally polarized light, each eye only sees one of the projected images, and the 3D effect is achieved.





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3D films have existed since 1915, but were restricted to a niche in the motion picture industry because of costly hardware, production and Display processes.

3D films were prominently featured in the 1950s in American cinema, and later became popular worldwide in the 1980s and 1990s

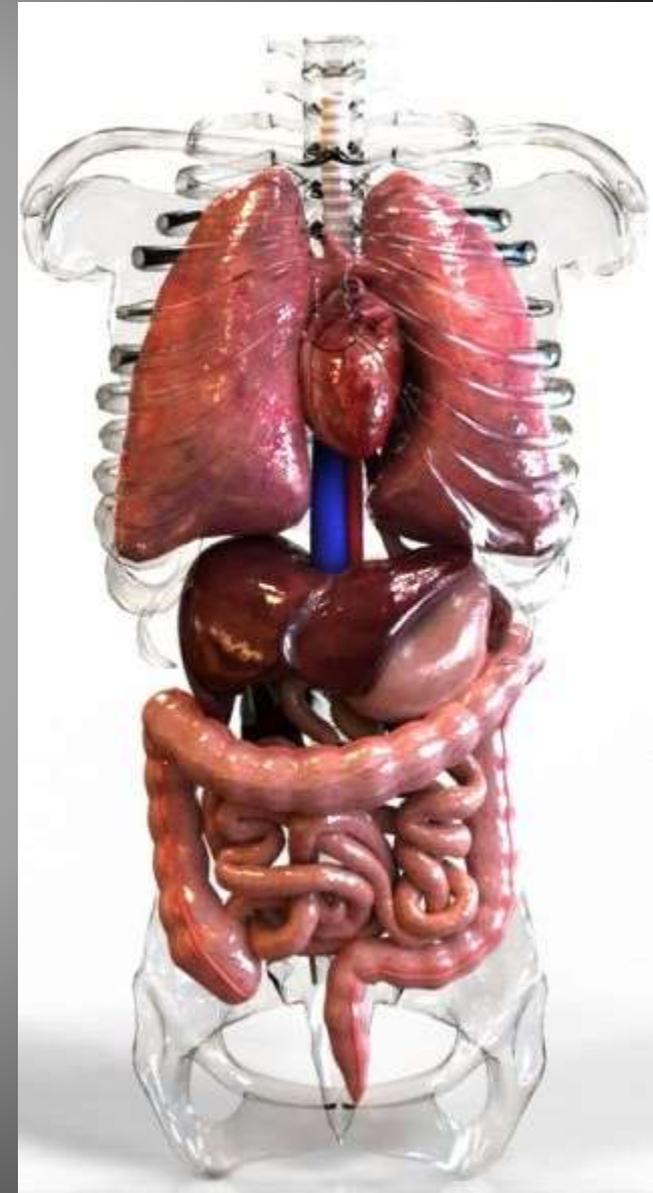
How Does 3D work ?



- ❑ Human beings have incredible depth perception.
- ❑ Since our eyes are slightly set apart, each eye looks at objects slightly differently. Therefore, our retinas (layer of our eyes upon which light is received) form two different 2-dimensional images. These images are instantly joined together by our brain to form a 3-dimensional picture. **This is known as stereopsis or stereoscopic vision.**
- ❑ 3D movies are shot with 2 lenses placed adjacent to each other, (resembling the human eyes).
- ❑ Visual effects are created using computer-generated imagery (CGI)
- ❑ In the cinema, both sets of images are projected together onto the screen. Our eyes merge those two images into one, 3-dimensional picture.
- ❑ Traditionally, each lens of the camera had a different color filter. Red filter for left eye and blue filter for right eye.

Applications of 3D Technology

- ▶ **Education** – To help students to better understand models like in real aspect. Students can print out topography, plant & animal structures, demographic, or population maps, 3D models of molecules, printout 3D models of problems to solve.
- ▶ **Military and Police use** – 3D technology is used in faster product development, customising equipment models and for training purposes.



Applications of 3D Technology



- ▶ **Engineering** – 3D technology is widely used in engineering field to develop and analyse various engineering models and to provide product training with greater details.
- ▶ **Architecture and designs** – use of 3D technology in architecture is to create advanced designs and understand them in more details to make them suitable according to different requirements.
- ▶ **Art and Sculpture**

Applications of 3D Technology

Online shopping sites and applications –
In e-commerce applications or websites provide graphical 3D product representation which is interactive and with a 3D view customers can choose which part of any of the object they'd like to see,

- zoom in or zoom out
- 360 degree view
- View in motion

All of these features are easily accessible.



- Feel the excitement of watching 3D movies at PGSC on:
- **Drug Resistance**– Where you can see the journey of antibiotics in our body.
 - **Artherosclerosis**– Where you can see how fats, cholesterol and other substances are build up in and on the artery walls.
 - **Prehistoria**– Where you can see journey of origin of life on earth.
 - **Magic Master**– where animals like snake, rats come close to you (and might even scare you)

Keep watching our website for latest shows

THANKS



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