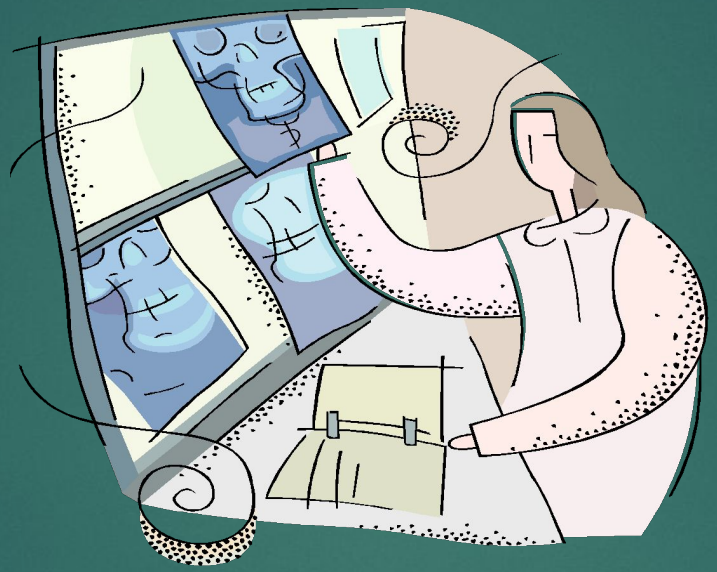
# process equipment for medical textile industry



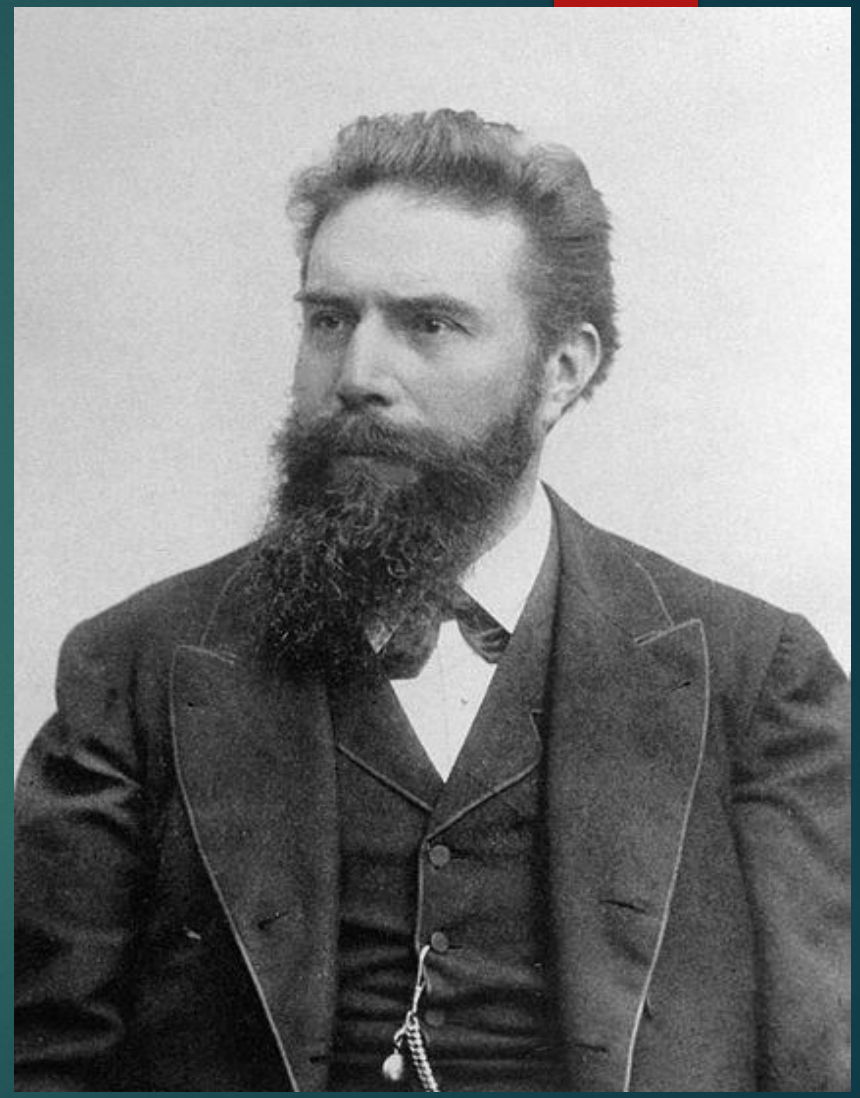
ZHANOV DAMIR

KAZAN NATIONAL RESEARCH TECHNOLOGICAL UNIVERSITY

DEPARTMENT OF PROCESS EQUIPMENT FOR MEDICAL TEXTILE INDUSTRY

# Brief History of X-Ray

Discovered in 1895 by  Wilhelm Konrad Roentgen



<u>Electromagnetic wave</u>

Travels 186,000 miles/sec
Short wavelength
Penetrates solid objects
Reacts with photographic film

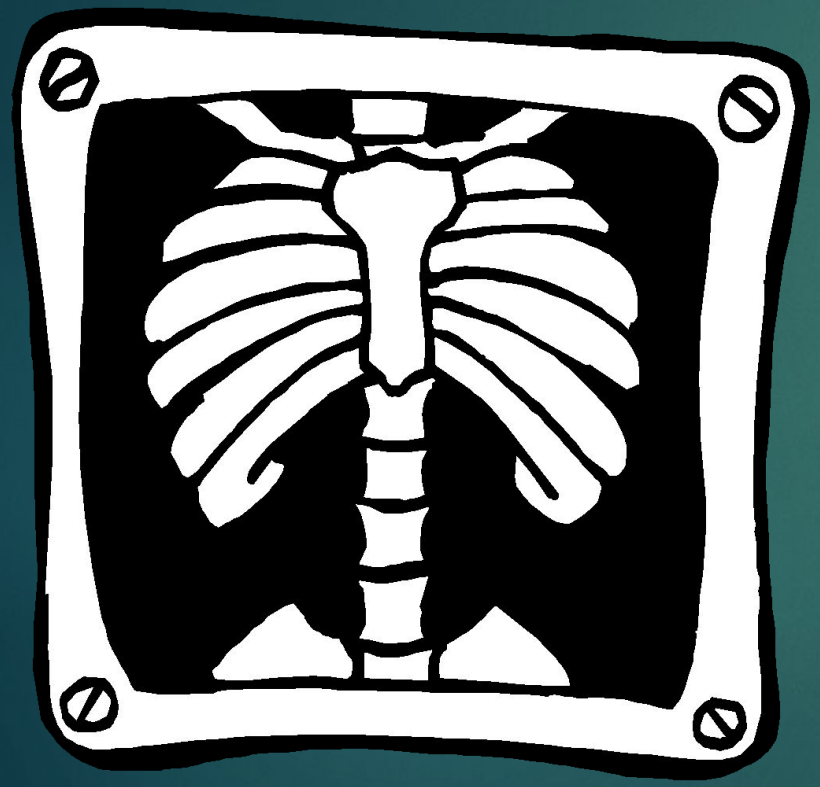
# Fluoroscopy

- It is used for viewing organs or passage of substances through organs

# Computed tomography

Computed tomography (CT scanning) is a medical imaging modality where tomographic images or slices of specific areas of the body are obtained from a large series of two-dimensional X-ray images taken in different directions. These cross-sectional images can be combined into a three-dimensional image of the inside of the body and used for diagnostic and therapeutic purposes in various medical disciplines.

# Radiograph



Bones contain much calcium , which due to its relatively high atomic number absorbs x-rays efficiently. This reduces the amount of X-rays reaching the detector in the shadow of the bones, making them clearly visible on the radiograph.

# Adverse effects

Diagnostic X-rays (primarily from CT scans due to the large dose used) increase the risk of developmental problems and cancer in those exposed. X rays are classified as carcinogenic ones.

# Radiation Safety and Dose

<u>Reducing patient exposure</u>

-Advances in technology

-Assessment of benefit-to-risk ratio

-Prevent serious damage from radiation by limiting radiation dose levels

-Individual dose limits set

**Words can be like X-rays if you use them properly--they'll go through anything. You read and you're pierced.”**
**~ Aldous Huxley**

# Thank you for attention