



Introduction to Materials Science

Thapar Institute of Engineering & Technology
(Deemed to be University)

Bhadson Road, Patiala, Punjab, Pin-147004

Contact No. : +91-175-2393201

Email : info@thapar.edu

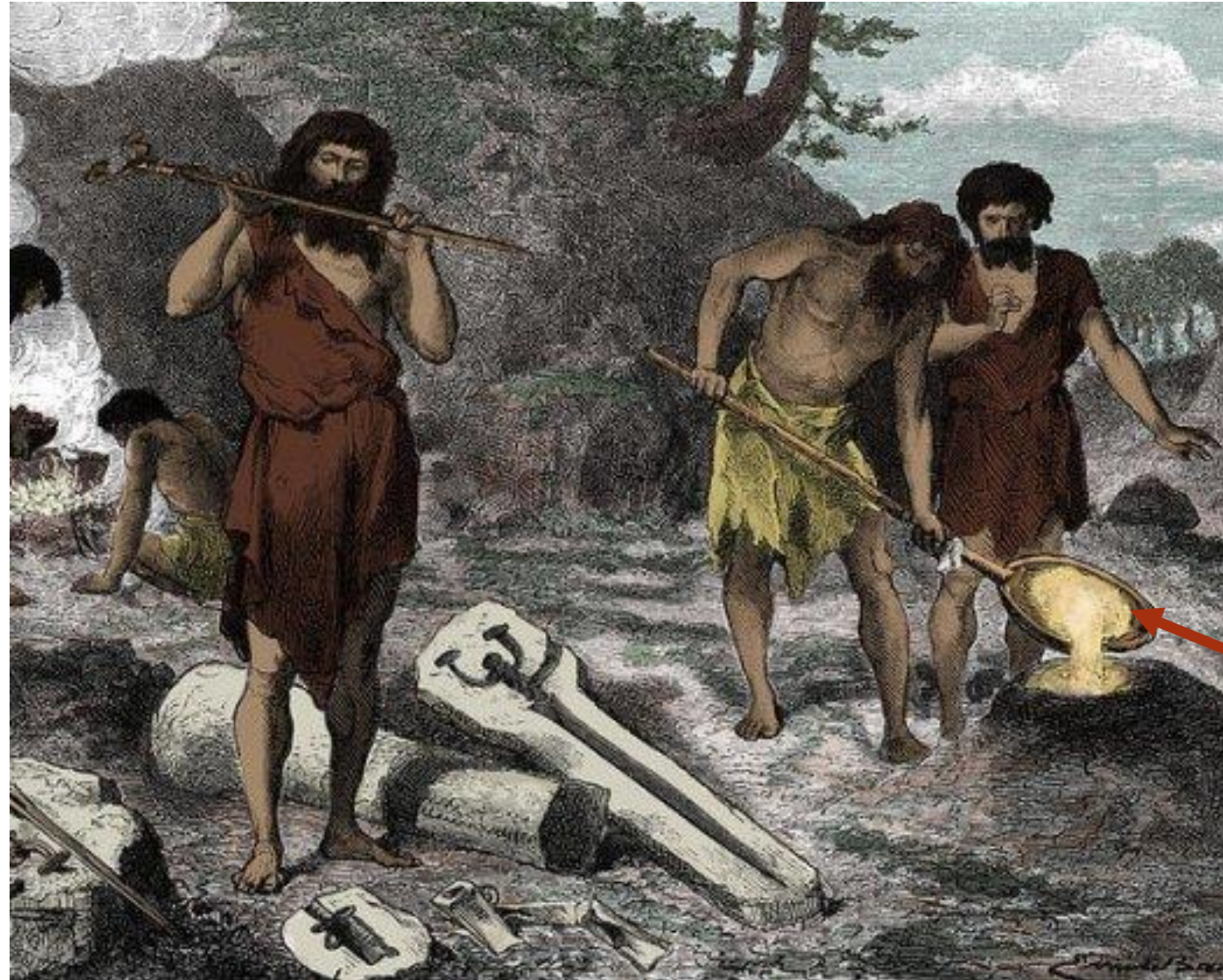


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1. What are Engineering Material?
2. Why to study Engineering Materials?
3. How they are important to us?

In Bronze age

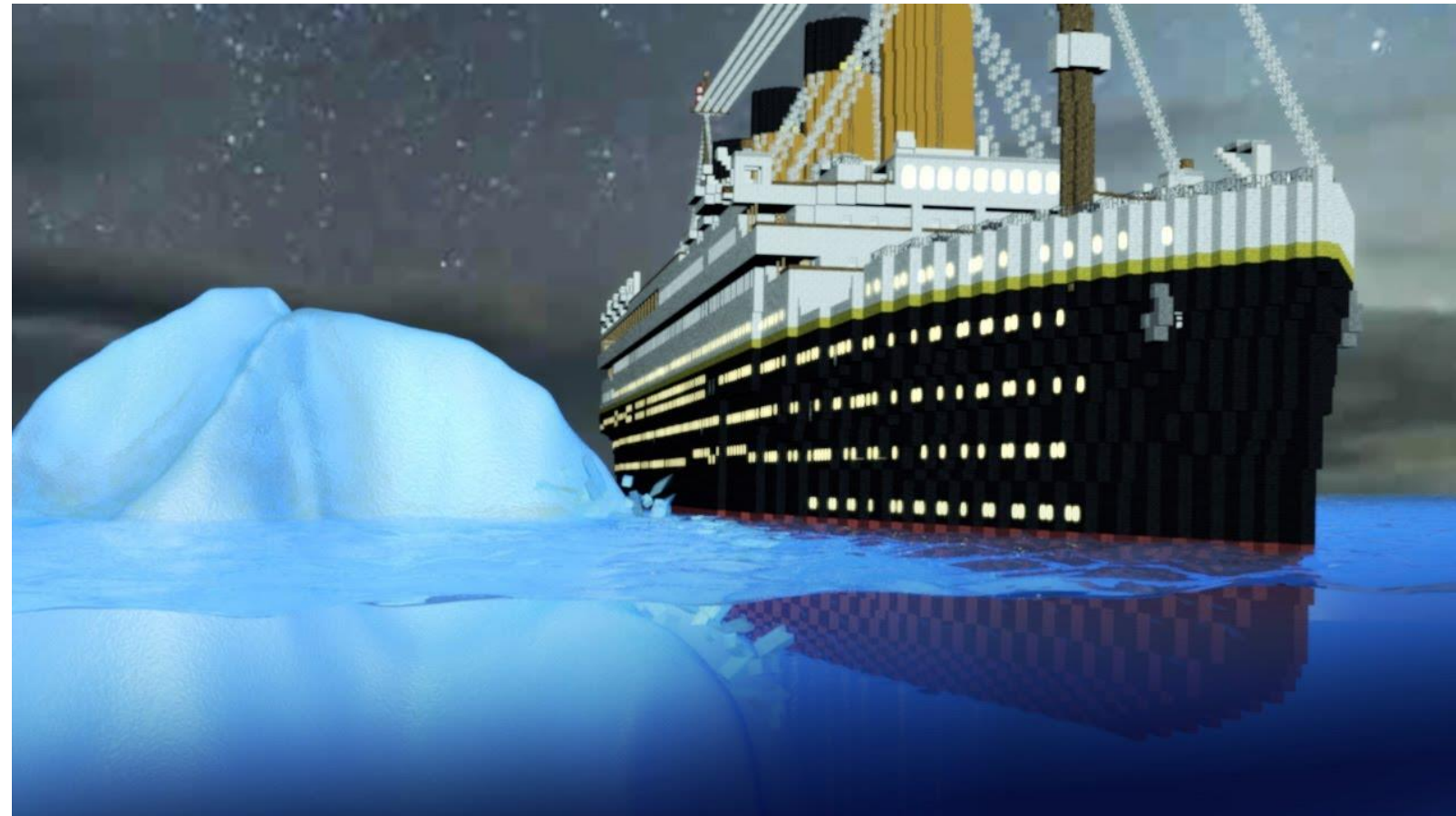
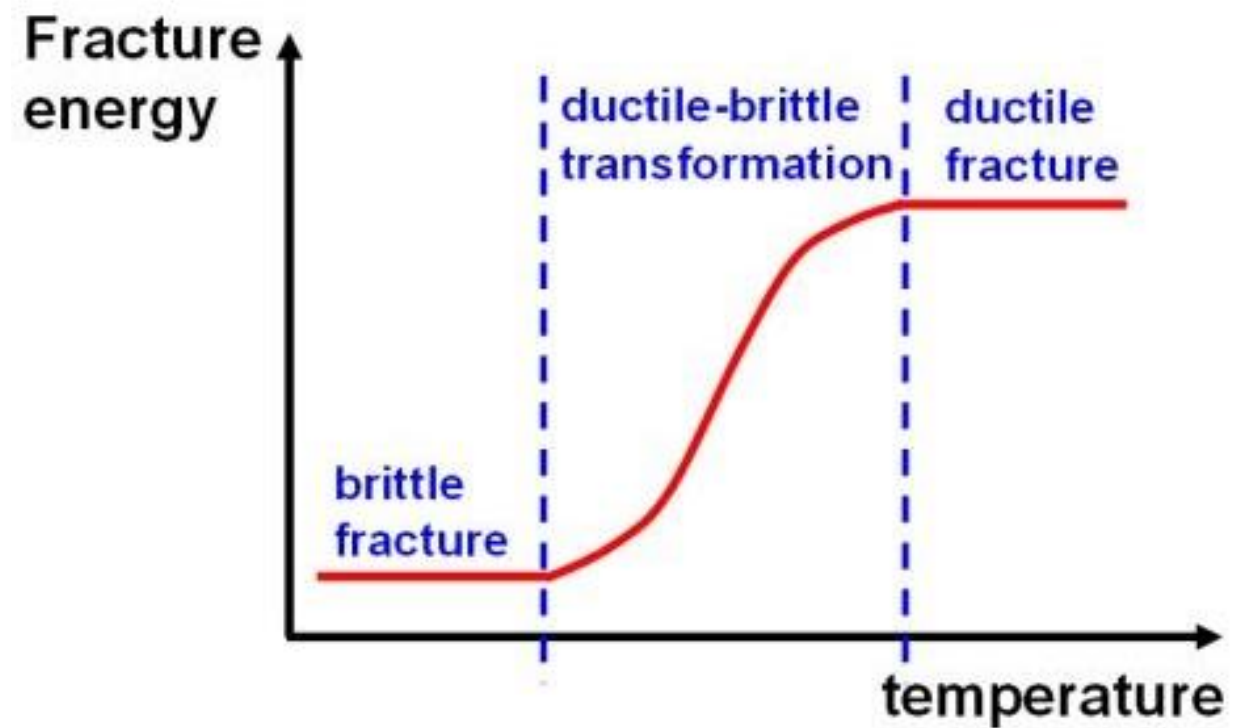
Around 10000 BC, our ancestor knows materials processing



Bronze

Why TITANIC SANK?

Temperature decreases → Ductile to Brittle



How to prevent corrosion in ships?



Corrosion causes around \$5000 Bn USD loss per year to global economy.

In Electronics Industry

Miniaturization of electronic devices is possible only due to semiconductors

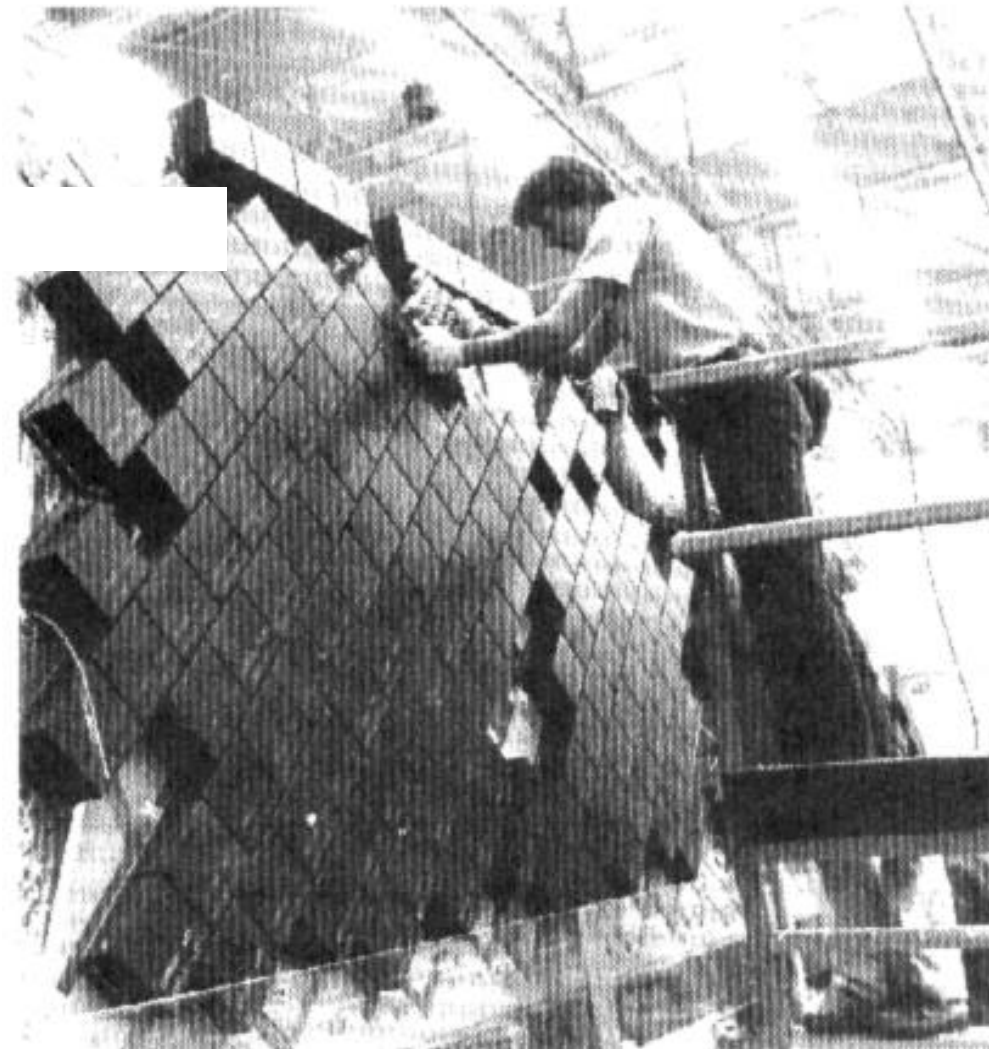


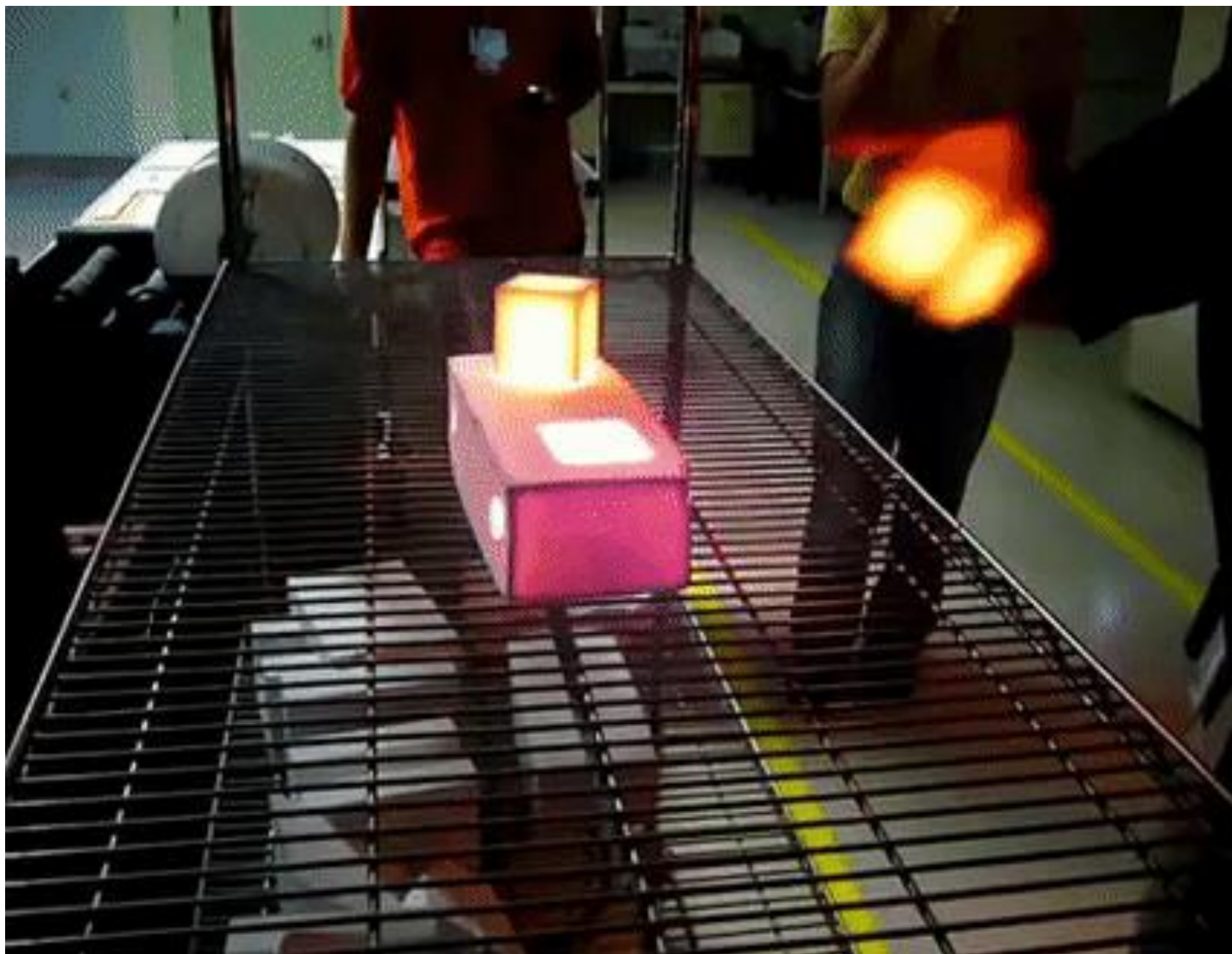
High temperature resistant materials

Space Shuttle Orbiter



- Silica tiles (400-1260°C):
-- large scale application





Why we don't use Steel implants

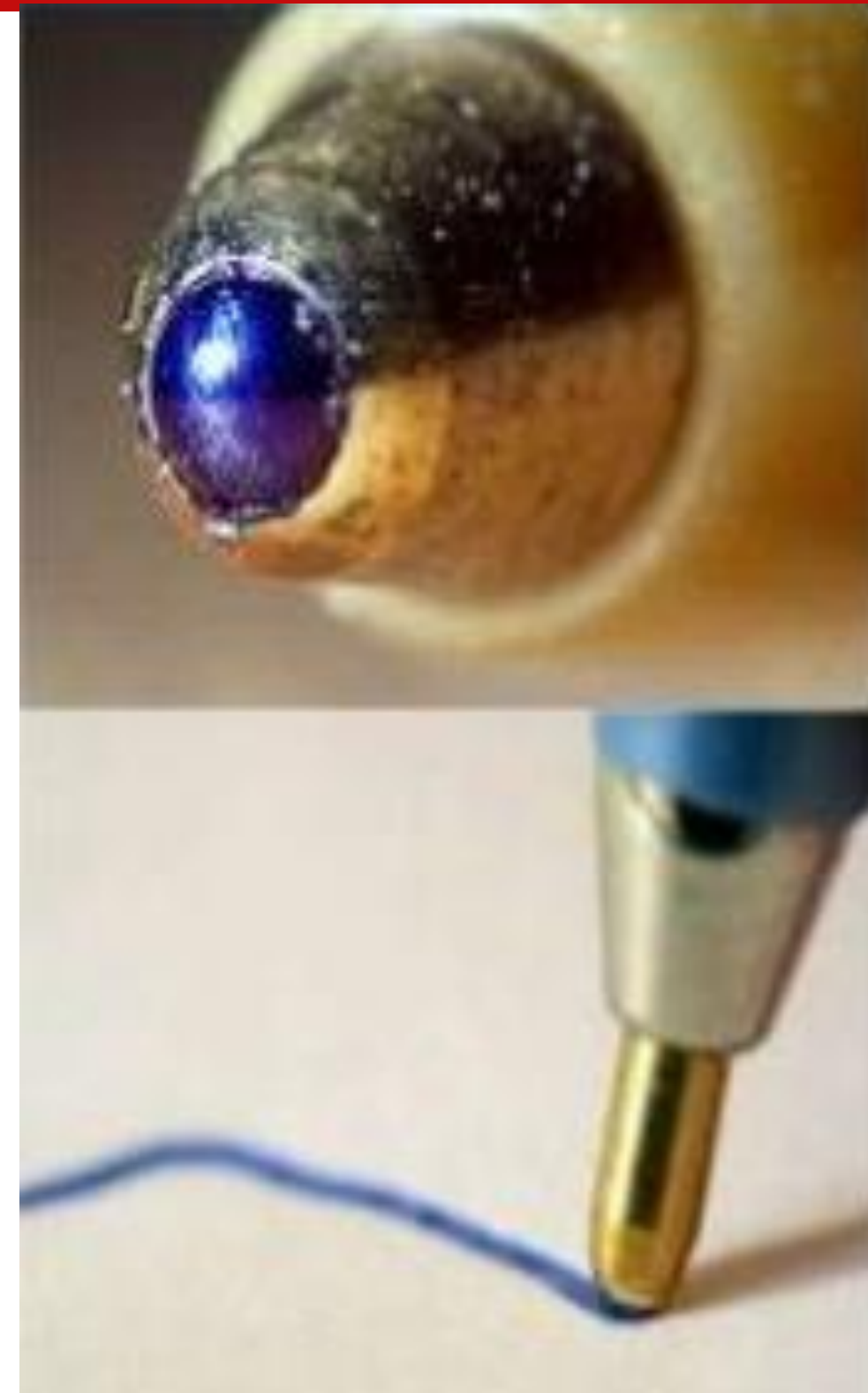


Steel is not biocompatible, will cause corrosion and pose danger to life.

Ball point pen tip are made of brass.

Due to non corrosive, strength, ability to formed easily.

Other body can be made with steel, brass, plastic or any metal.



1. We see materials everywhere in our life.
2. Materials are important and behave in a certain way in a certain conditions.
3. Choice of materials is based upon the applications.