



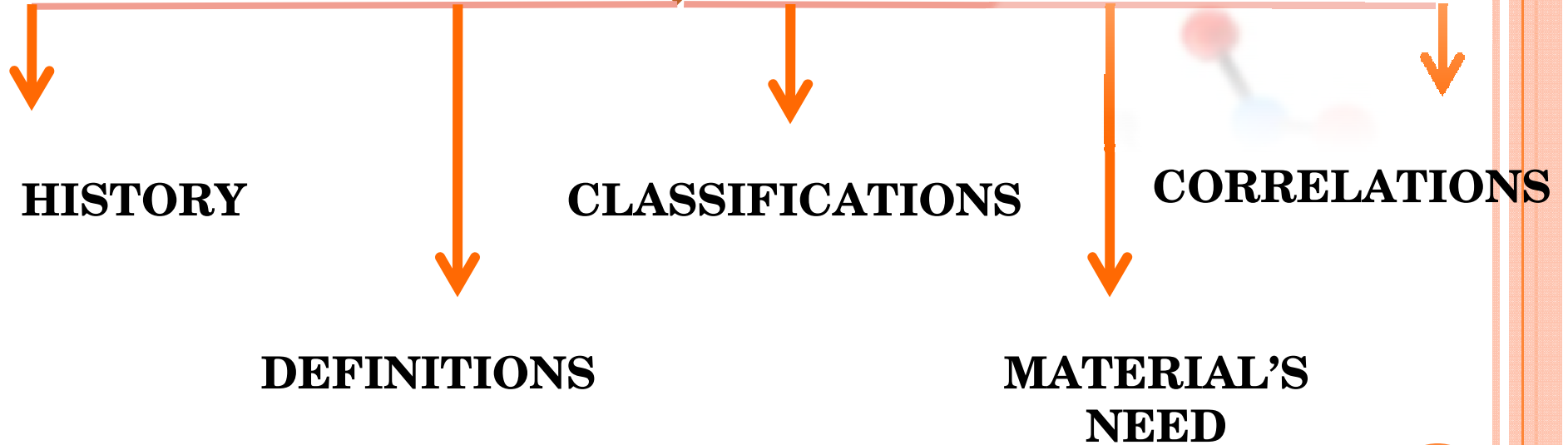
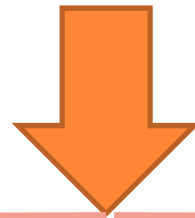
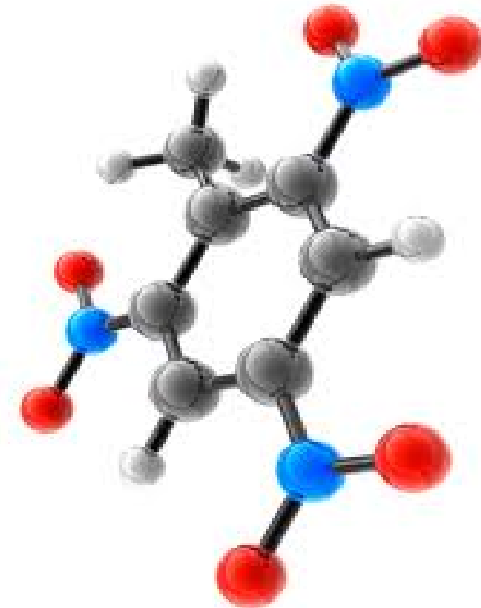
# **MATERIAL SCIENCE AND ENGINEERING**

BY:

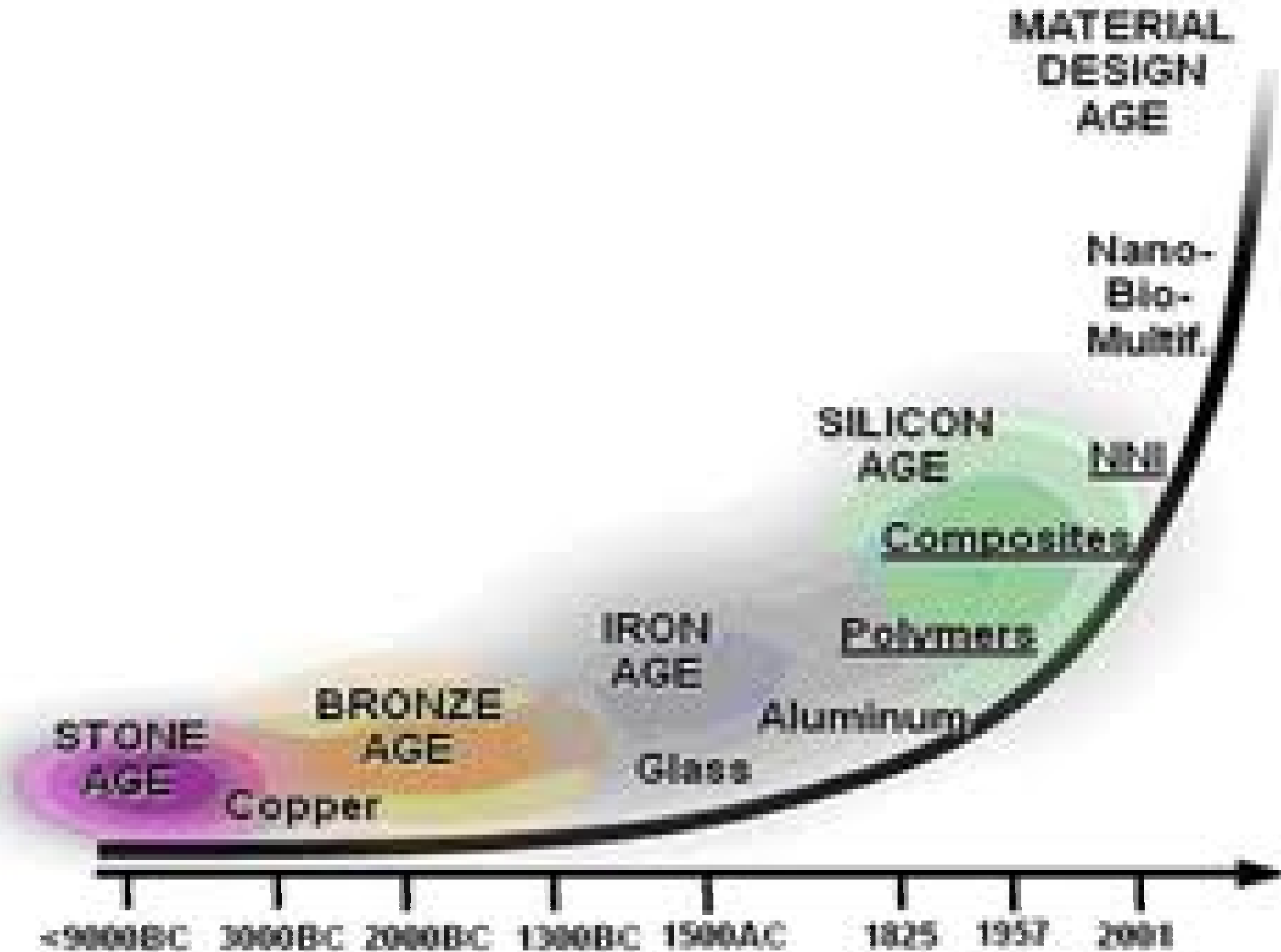
ENGR. MS TAYYABA BANO

LECTURER MED

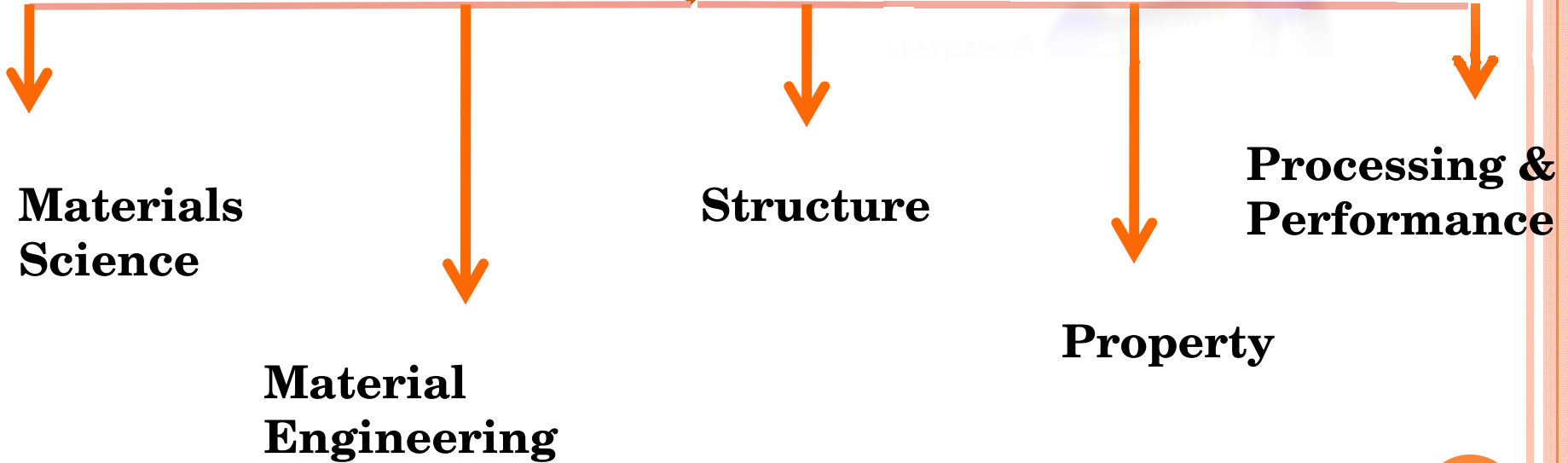
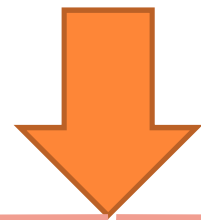
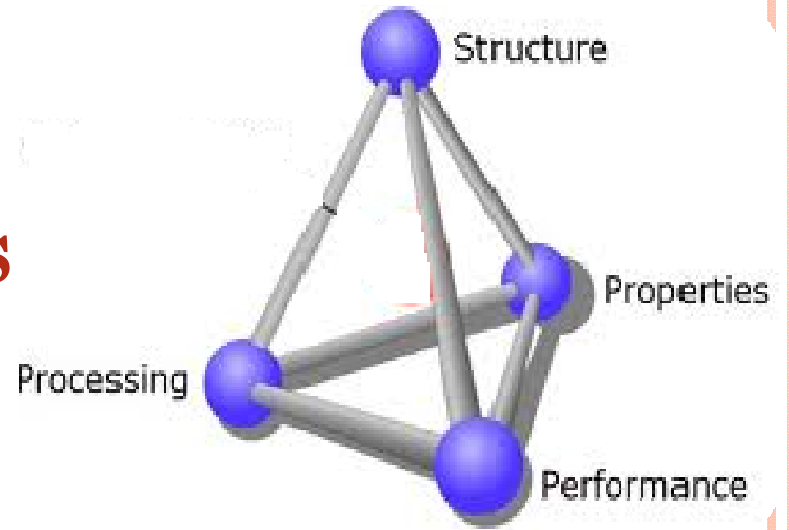
# AN INTRODUCTION



# HISTORICAL BACKGROUND



# BASIC DEFINITIONS





Processing

Structure

Properties

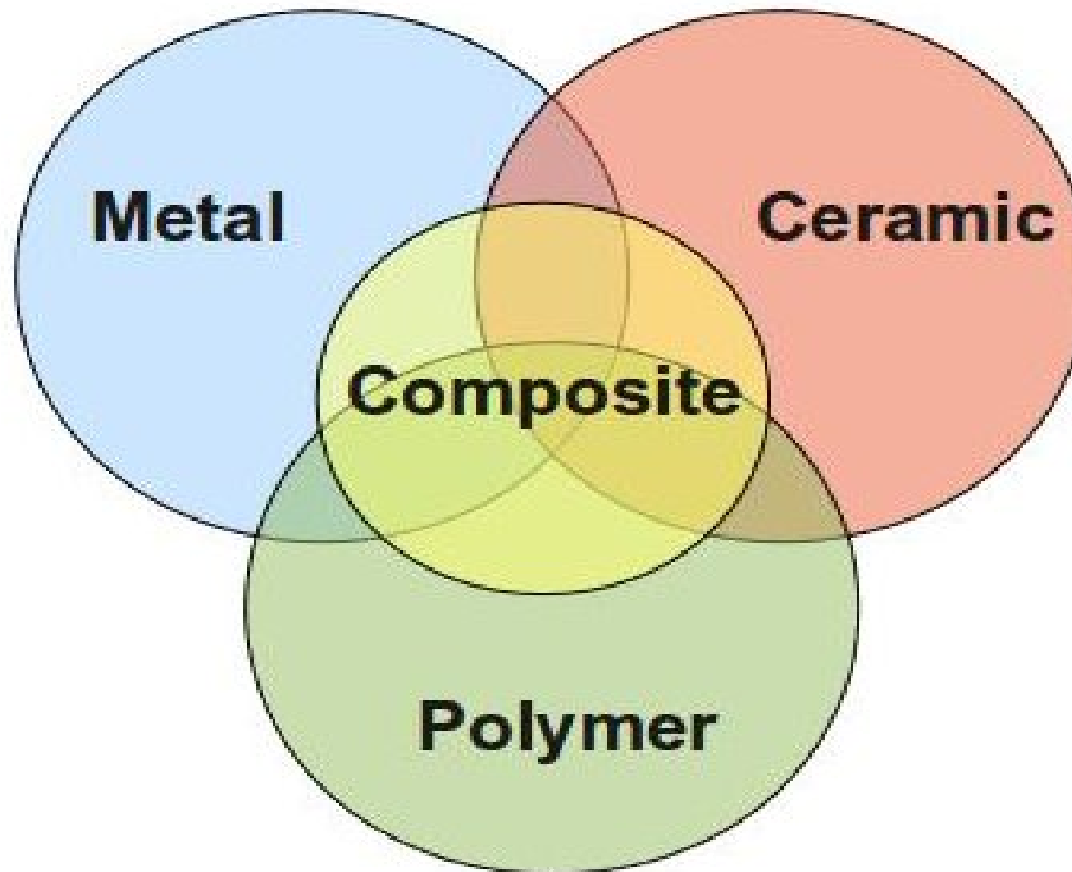
Performance

- Properties
- Processing

**That's Materials Engineering!**



# CLASSIFICATIONS





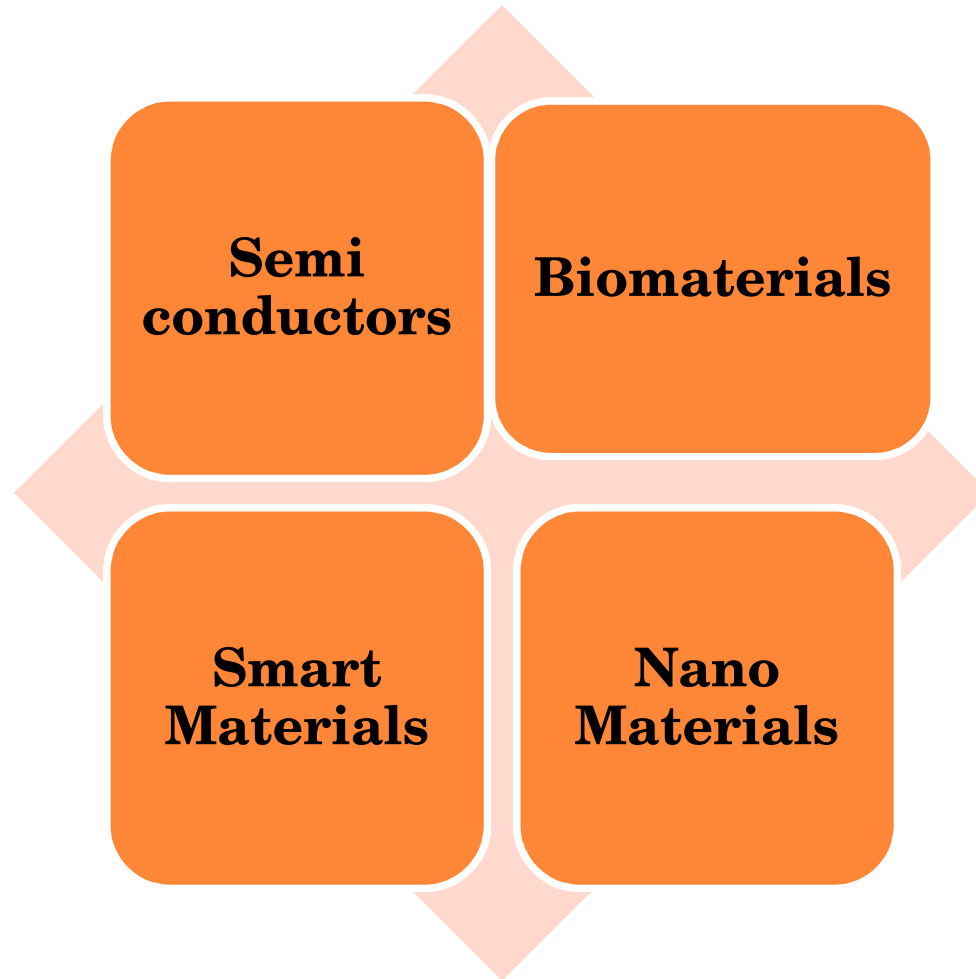
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Boeing 787 Dreamliner  
(50% composites by weight)

- Carbon laminate
- Carbon sandwich
- Other composites
- Aluminum
- Titanium

# ADVANCED MATERIALS



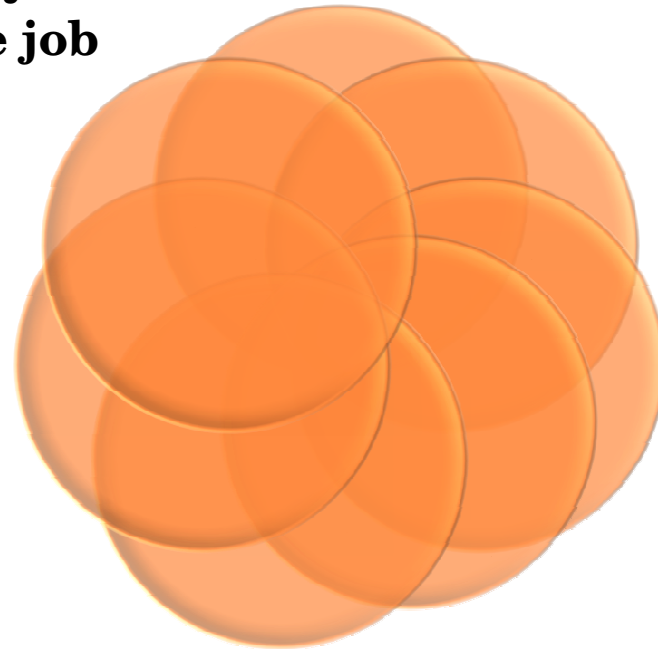


# CURRENT MATERIAL NEED

- Materials for Nuclear Facilities
- Lighter and Stronger Materials  
for Transport
- Solar Cells
- Batteries
- Recycling

## **SUMMARY**

**Use the right  
material for the job**



**Understand the  
relation between  
properties,  
structure and  
processing**

**Recognize new  
design  
opportunities  
offered by material  
selection**

Thank  
You