

### **Mechanical Engineering Department Expert lecture (28<sup>th</sup> February, 2026)**

An expert lecture was successfully organized under the aegis of the R&D Cell of the Institute in association with the Department of Mechanical Engineering, HBTU Kanpur. The event witnessed active participation from approximately 80 students, including B.Tech, M.Tech, and Ph.D. scholars, along with 12 faculty members. The lecture featured two distinguished experts:

- **Prof. P. M. Pandey, IIT Delhi**, delivered an insightful talk on “**Additive Manufacturing: Recent Advances and Future Perspectives**”. He elaborated on emerging trends, technological advancements, and the growing industrial relevance of additive manufacturing.
- **S. B. Yadav, Ex-Scientist, DMSRDE Kanpur**, presented on “**Composite Materials for Armour in Defence Applications**”. His lecture focused on the development, properties, and applications of advanced composite materials in defense systems.

Both sessions were highly informative and provided valuable exposure to cutting-edge research and industrial applications in modern mechanical engineering. The lectures also encouraged interaction, with students and faculty engaging in meaningful discussions with the speakers. The event proved to be a significant academic enrichment activity for the department, enhancing the knowledge base of participants in emerging and strategic areas of engineering. The final programme flyer and the pictures of the sessions are provided below for record and verification.



# **HARCOURT BUTLER TECHNICAL UNIVERSITY**

**Research & Development (R&D) Cell**

**In collaboration with**

**Department of Mechanical Engineering**

*Presents*

**EXPERT LECTURES BY**



**Dr. Pulak Mohan Pandey, IHFC Chair, Professor (HAG),  
Department of Mechanical Engineering, Indian Institute  
of Technology Delhi. Former Director, BIET Jhansi**

**Topic: "Additive Manufacturing: Recent Advances and  
Future Perspectives"**



**Dr. S. B. Yadav, Ex. Scientist G, DMSRDE Kanpur**

**Topic: "Composite Materials for Armour in Defence  
Applications"**



**Venue: Seminar Room (Mechanical Engineering)**

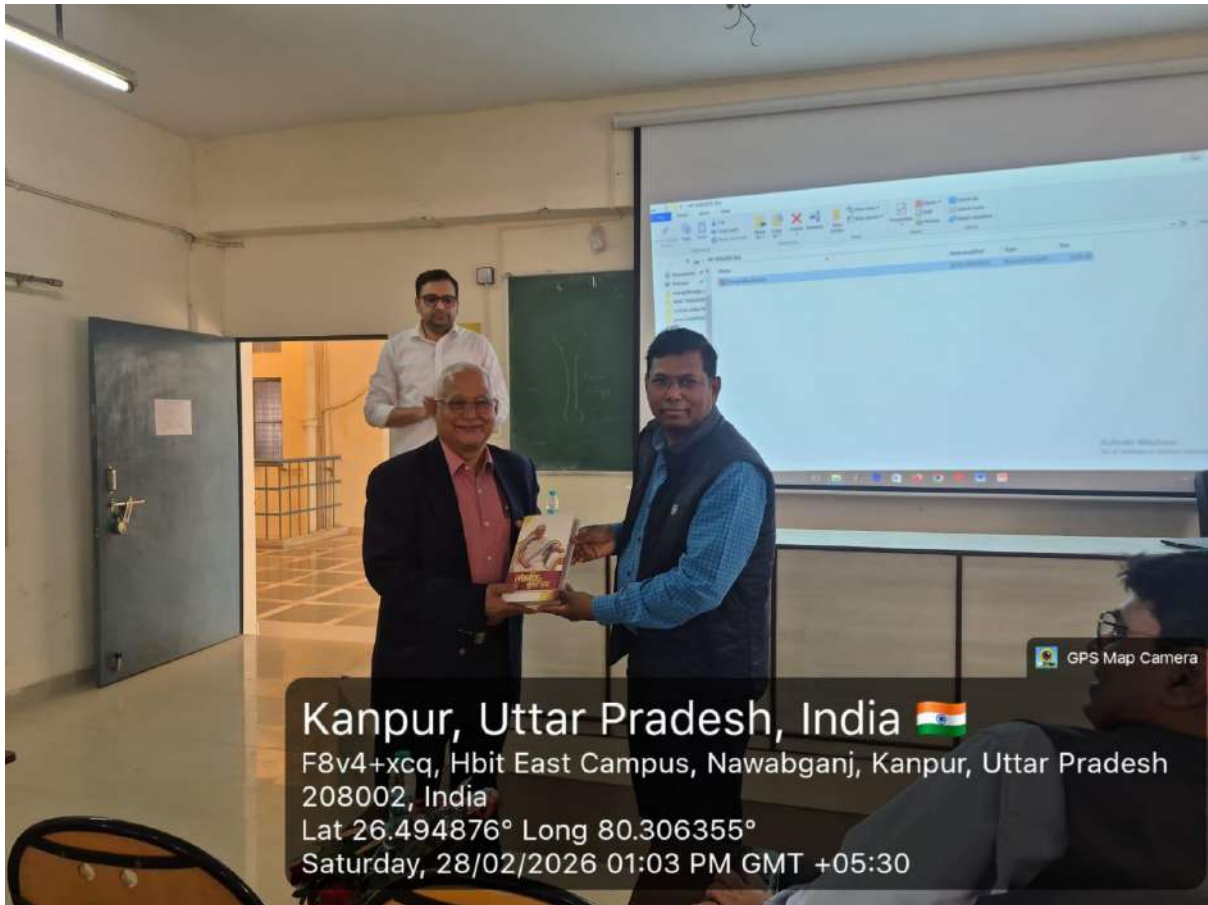
**28<sup>th</sup> February, 2026**

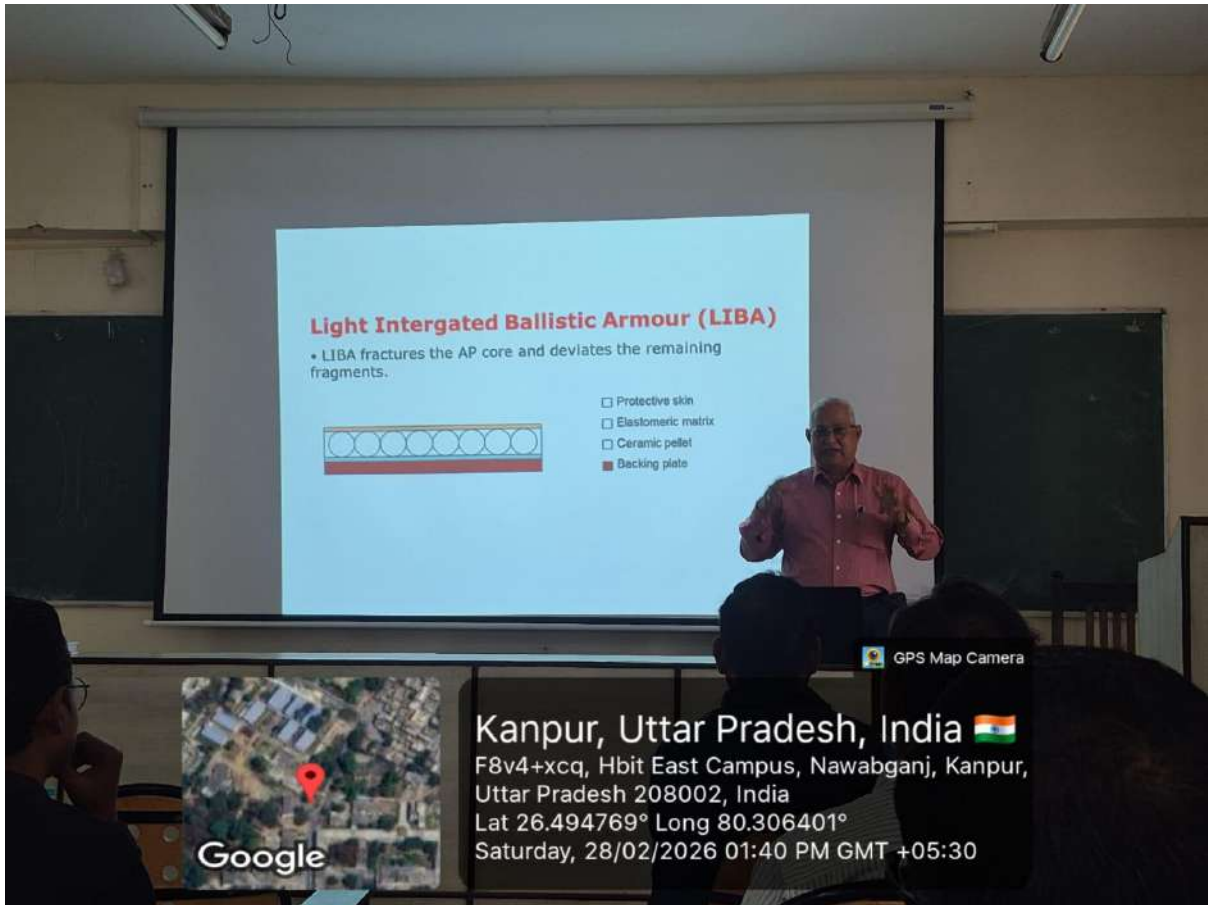
**11:00 AM – 02:00 PM**

**Organizers**

**Dr. Vinay Pratap Singh (HOD, ME & DSOE)  
Dr. Nishant Kumar Singh (Assoc. Dean R&D)**

**Dr. Rajesh Kumar Verma (Dean, R&D)  
Dr. Rohit Kumar (Nodal Officer, R&D)**





MBT Arjun

GPS Map Camera

Google

**Kanpur, Uttar Pradesh, India** 🇮🇳  
 F8v4+xcq, Hbit East Campus, Nawabganj, Kanpur,  
 Uttar Pradesh 208002, India  
 Lat 26.494756° Long 80.306286°  
 Saturday, 28/02/2026 01:30 PM GMT +05:30

Composite Materials: Particle-III

Particle-reinforced    Fiber-reinforced    Structural

- Elastic modulus,  $E_c$ , of composites:
  - two approaches.
  - upper limit: "rule of mixtures"  

$$E_c = V_m E_m + V_p E_p$$
  - lower limit:  

$$\frac{1}{E_c} = \frac{V_m}{E_m} + \frac{V_p}{E_p}$$
- Application to other properties:
  - Electrical conductivity,  $\sigma_e$ : Replace  $E$  in the above equation with  $\sigma_e$ .
  - Thermal conductivity,  $k$ : Replace  $E$  in above equation with  $k$ .

Data:  
 Cu matrix: 350 GPa  
 tungsten particles: 300 GPa

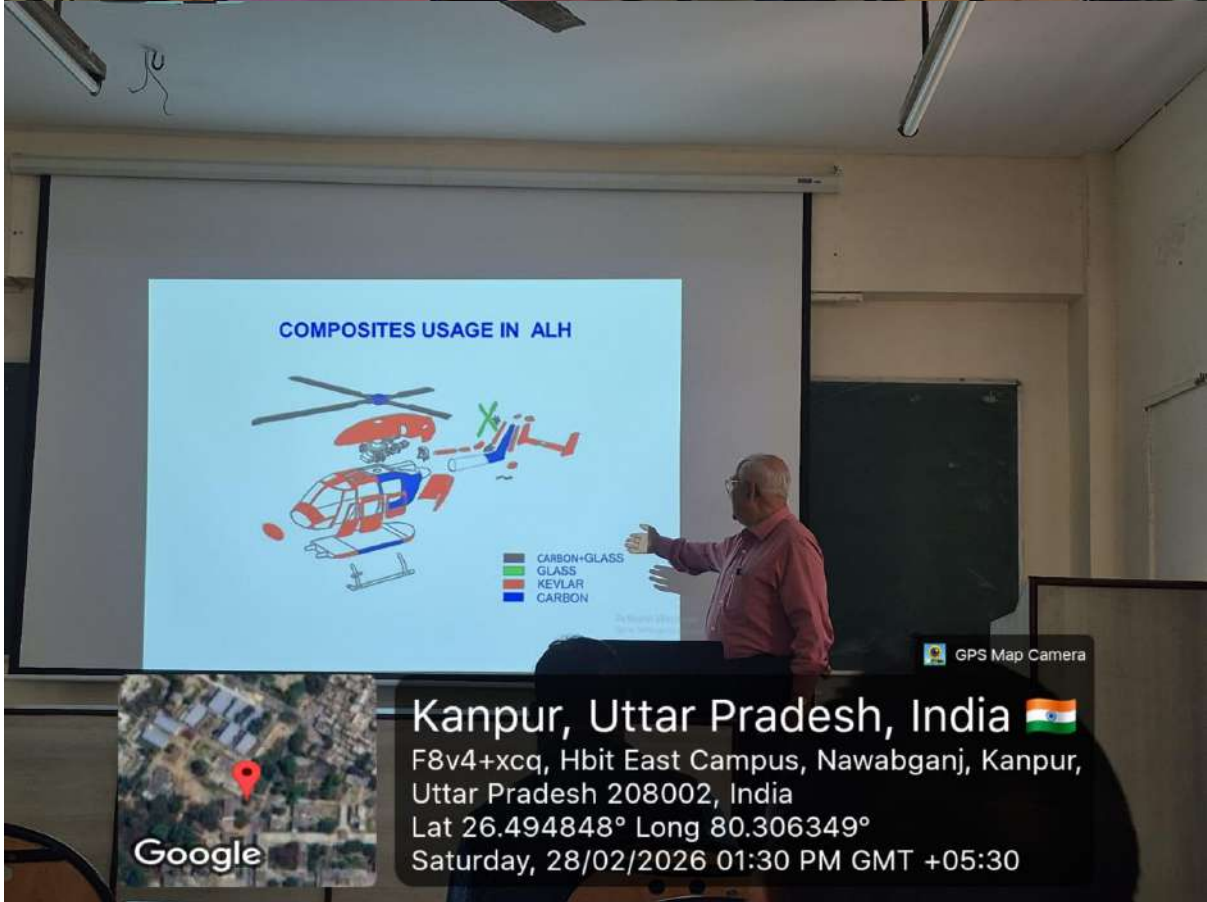
0 20 40 60 80 100 vol% tungsten (W)

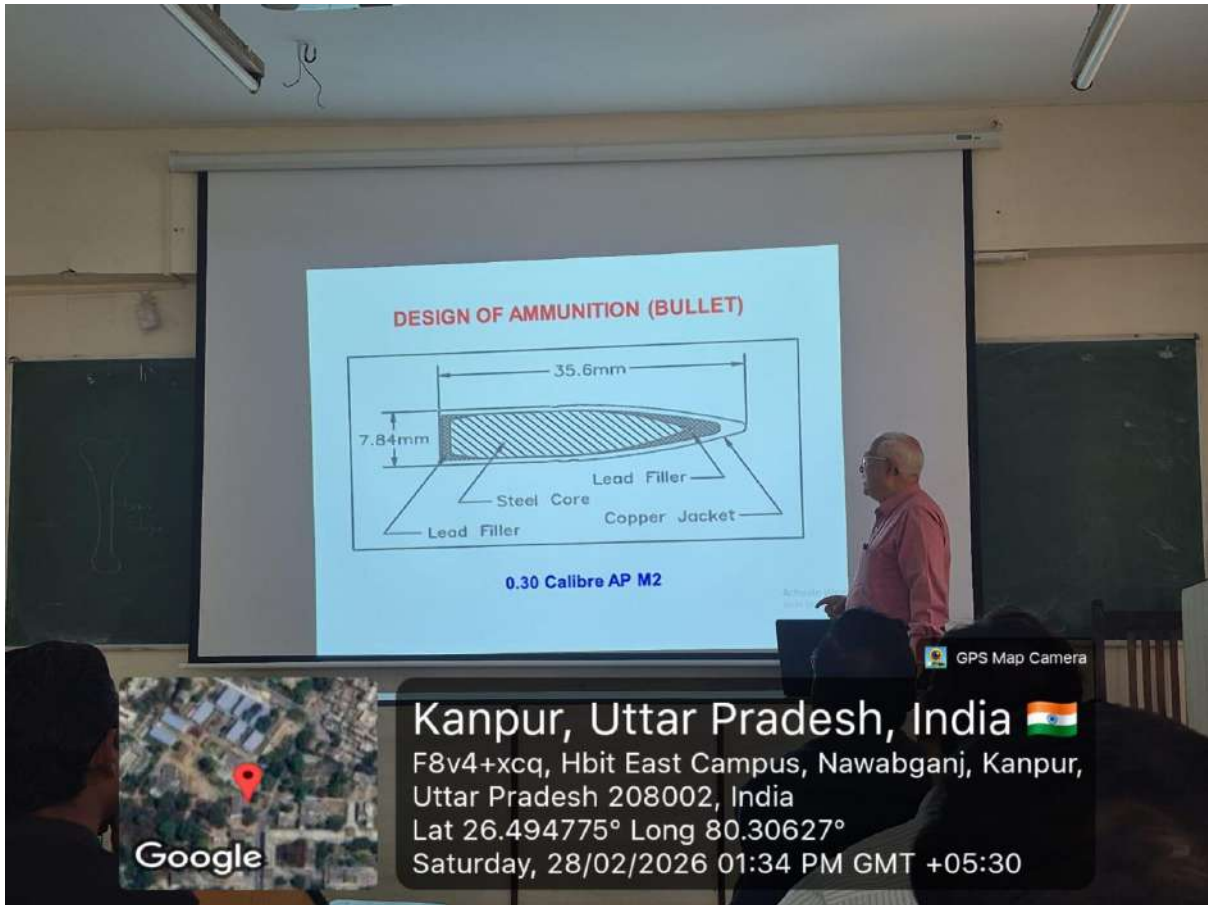
150 200 250 300 350  $E_c$  (GPa)

GPS Map Camera

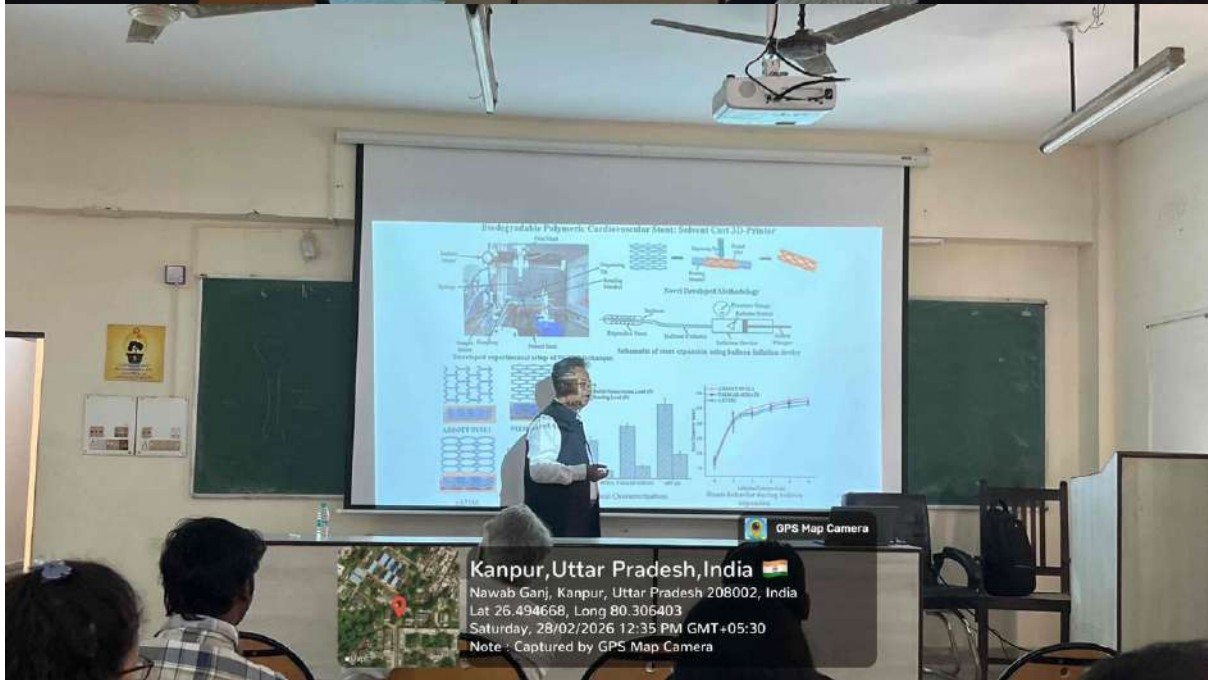
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 Lat 26.494867° Long 80.306319°  
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**Kanpur, Uttar Pradesh, India** 🇮🇳  
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**Kanpur, Uttar Pradesh, India** 🇮🇳  
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 Lat 26.494658, Long 80.306403  
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 Note - Captured by GPS Map Camera

