



The Pakistan Academy of Engineering

36th Symposium: “Prospects of Additive Manufacturing in Pakistan”

scheduled on Saturday, June 21, 2025

Presidential Address

Respected Speakers,
My dear fellow Engineers,
Honourable Guests,
Ladies and Gentlemen!

SALAMUN ALA MANIT-TABA’AL-HUDA

It is my honour and privilege to address this esteemed gathering at the symposium on "Prospects of Additive Manufacturing in Pakistan." We stand at the crossroads of an industrial transformation, where additive manufacturing (AM) is redefining production processes, reshaping global economies, and enabling technological breakthroughs in multiple sectors.

Additive manufacturing, commonly known as 3D printing, has evolved from a prototyping tool into a cornerstone of **Industry 4.0**. The global AM market is projected to reach **\$57.1 billion by 2028**, driven by aerospace, automotive, healthcare, and consumer goods applications. Countries such as the **United States, Israel, China, Germany, and Japan** are leading in AM adoption, investing heavily in research and commercialisation.

With **advancements in material science**, including polymers, metals, ceramics, and composites, AM is now enabling mass production, supply chain resilience, and sustainable manufacturing. The U.S. leads in industrial AM adoption, with **China, Japan, and Germany** also advancing rapidly.

The **Asia-Pacific AM market** was valued at **\$4.3 billion in 2023** and is forecasted to reach **\$11 billion by 2028**. **China dominates** this sector, focusing on large-scale AM applications. **Japan and South Korea** are pioneering high-precision technologies, while **India** is expanding its AM ecosystem through government-backed initiatives.

A key industry trend is the shift from **proprietary closed-loop systems to open-material platforms**, reducing costs and promoting innovation. Hybrid manufacturing—combining AM with traditional machining—is also improving efficiency and scalability.

Despite global growth, **Pakistan's AM sector remains in its infancy**. Its adoption is primarily limited to **universities, research institutions, and small-scale service providers**. **GIKI, NUST, and a few other institutions** have made commendable progress, but industrial-level implementation is minimal due to:

- **High initial investment costs**
- **Limited availability of advanced AM materials**
- **Lack of skilled workforce**

- Limited industry awareness and adoption
- Absence of a structured AM policy framework

Currently, Fused Deposition Modeling (FDM) and Stereolithography (SLA) are the most widely used AM technologies in Pakistan, mainly in healthcare and jewellery. However, Selective Laser Sintering (SLS) and Direct Metal Laser Sintering (DMLS) are virtually absent.

Pakistan must embrace additive manufacturing as a driver of economic growth, import substitution, and industrial self-reliance. Together, we can position Pakistan as a leader in advanced manufacturing technologies.

I extend my sincere gratitude to the esteemed speakers for their valuable contributions to this symposium. Together, let us pave the way for a future where Pakistan stands at the forefront of scientific and industrial innovation.

Thank you, Ladies & Gentlemen.