PIAM3D

Pakistan Institute of Additive Manufacturing

Transforming Ideas into Reality

Complete Additive Manufacturing Solutions

AUTOMOTIVE INDUSTRIAL AEROSPACE CONSUMER GOODS HEALTHCARE

The Full Solution

We provide a complete and integrated additive manufacturing workflow. At PIAM3D facilities support every stage of production, including 3D scanning, CAD designing, metal, polymer and ceramic additive manufacturing, post-processing, electropolishing and quality assurance.

With modern equipment and skilled staff, we offer reliable, efficient, and precise solutions for a wide range of applications in aerospace, medical and automotive industries. Whether developing prototypes or producing functional parts, PIAM3D enables a smooth transition from concept to final product.

CONCEPT . DESIGN . MANUFACTURING . DELIVERY

3D Printing 1

At PIAM3D we offer SLM, FDM, SLA and Bider jet-based advanced Metal, Polymer and Ceramic 3D printing for quick prototypes and functional parts. We transform your ideas into high-quality finished products.

3D Designing & Rev Engg 4

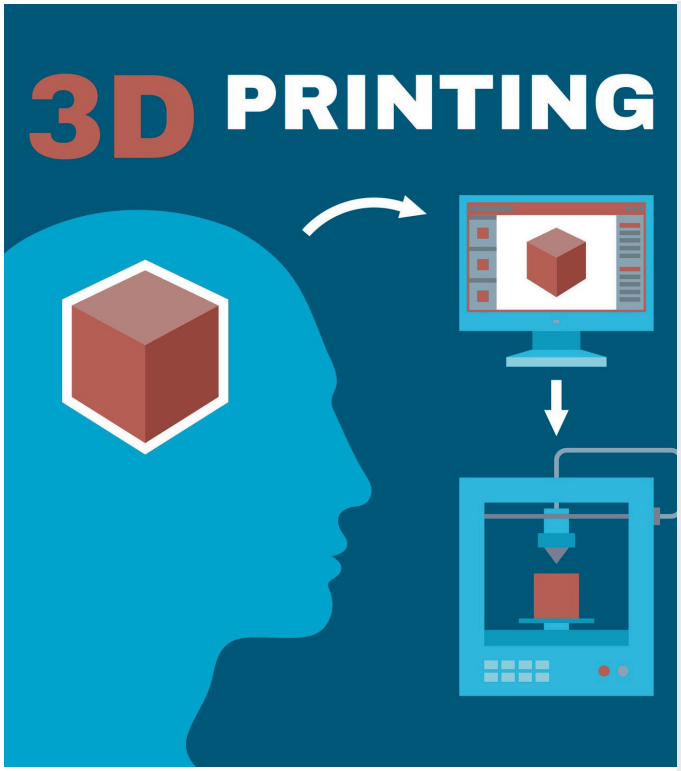
With our skilled team, PIAM3D offers CAD designing and reverse engineering to convert scanned data or raw ideas into accurate, production-ready DFAM models optimized for additive manufacturing.

2 **3D Scanning**

We offer high-precision 3D scanning using advanced multi laser scanning technologies. Our facility enables accurate digitization of complex geometries for inspection, redesign, restoration and smooth integration into 3D printing workflow.

3 **Post Processing**

We offer a range of post-processing services including heat treatment, EDM cutting, sanding, shot peening, paint coating, and electropolishing. We refine AM components to achieve the required strength, finish, and functionality.



Understanding the Role of Advanced Additive Manufacturing

In modern engineering and manufacturing environments, organizations often structure their operations into tiers to ensure efficiency, reliability, and high-quality output.

Tier 1 involves the production of core components, including critical parts and assemblies used in demanding industrial, aerospace, automotive, and biomedical applications.

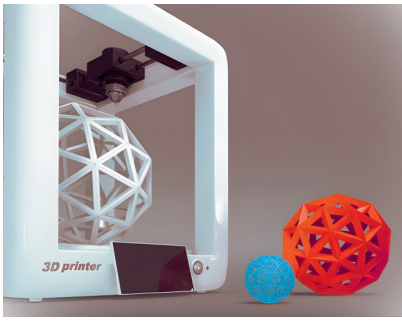
Tier 2 involves creating the tooling, fixtures, molds, and support structures essential for assembling and protecting core components. PIAM3D's additive processes enable rapid, high-precision fabrication of these elements.

Tier 3 encompasses engineering activities such as design, analysis, testing, and validation to ensure that products from Tiers 1 and 2 meet performance and safety requirements.

At PIAM3D, these capabilities support a wide range of sectors by providing high-precision additive manufacturing, digital inspection, and engineering services under one roof.

CAPABILITIES

In many advanced engineering sectors, producing complex components in low volumes is essential. PIAM3D provides a range of additive manufacturing services supported by modern technology and experienced technical staff. From precision scanning and CAD design to metal and polymer 3D printing and post-processing, we enable the development of high-quality parts with accuracy and efficiency. Our workflow supports applications in aerospace, automotive, medical, and industrial domains where reliable performance and precise manufacturing are critical.



Metal Additive Manufacturing

Our metal additive manufacturing uses advanced SLM technology to produce high-quality parts with excellent accuracy and mechanical performance. We create functional prototypes, low-volume production components, and complex geometries not feasible with conventional methods.

Metals

Alloys of
- Titanium
- Aluminum
- Nickle
- Stainless Steel

Equipment

SLM Technology

Build sizes (mm)
- 415×415×400
- 300×300×370
- Ø195×220

Applications
- Aerospace
- Automotives
- Biomedical implants
- Functional Prototypes
- Customized Tools
- Light weight and Consolidated Parts

3D Scanning and Rev Engineering

Our 3D scanning and reverse engineering services capture accurate digital models using advanced 3D Scanners. We convert physical parts into precise CAD data for redesign, validation, and manufacturing. And QC ensures the quality.

Equipment	Specs
3D Scanner, Creaform	Accuracy: 30 µm Resolution: 50 µm Part Size: 0.1-4 m
3D Laser Scanner, Scan Tech	Accuracy: 20-30 µm Resolution: 20 µm Part Size: 1-5 m
3D Scanner, Artec	Accuracy: 50 µm Resolution: 100 µm Part Size: Min 5 mm
Surface Profiler	Range: 350 µm Resolution: 8 nm Trav Len: 1.25-12.5 mm
Micro CT	Spacial Res ≤ 2 µm Part Size: 1-500 mm

Applications
- Metrology
- Reverse Engineering
- Restoration
- Digital Inventory
- Roughness Measurement
- NDT

Training, Internships & Consultation

PIAM3D offers specialized trainings in DfAM, internships, BS final year project, MS Research, technical workshops, and expert consultation services to support industry, academia, and innovation-driven organizations.

Polymer and Ceramic 3D Printing

At PIAM3D polymer additive manufacturing uses FDM, SLA, SLS, and composite printing to produce precise, reliable parts. We create functional prototypes, lightweight components, and complex geometries for diverse applications.

Polymers
- ABS
- PEEK
- PLA
- PC
- Nylon
- PVA
- SiC
- Gypsum
- Fused Silica

Equipment

FDM Technology

Build sizes (mm)
- 610×508×508
- 223×223×305
- 320×132×154

SLS Technology

Build size (mm)
- 360×360×600

SLA Technology

Build size (mm)
- 380×380×250

Binder Jet Technology

Build sizes (mm)
- 254×281×203
- 800×500×400

Applications
- Composite Moulds
- Casting Patterns
- Biomedical implants
- Functional Prototypes
- UAVs Components

Post Processing

Post-processing at PIAM3D enhances the strength, surface quality, and overall functionality of additively manufactured parts, preparing them for real-world applications.

Services	Equipment
Electro-Polishing	**Dry Electro-polishing** Capacity (mm) 500Ø×250, ~1µm Ra
Shot Peening	**Shot Peening Machine** Capacity(mm) 900×600×700 Pressure: 5-7bar
Heat Treatment	**Environmental Furnace** Capacity(mm) 420×500 Temperature 1150
CNC Wire Cutting	**EDM Machine** working Size (mm) 596×880×500 Wire Thickness: Φ0.12 ~ Φ0.18 mm

Applications
- Surface Finishing
- Dim Accuracy
- Stress Relieving
- Annealing
- Descaling

Our In House Equipment

Our Collaborations

Pakistan Institute of Engineering and Applied Sciences

Pakistan Institute of Additive Manufacturing (PIAM3D), NCP

Shahdara Valley Road, Islamabad-Pakistan

+92-51 9006230, +92-51-9006202 +92-51-9006298 info-piam3d@ncp.edu.pk