COMPARISON OF INDUSTRIAL 3D PRINTING TECHNOLOGIES

	SLA Stereolithography	**SLS** Selective Laser Sintering	**SLM** Selective Laser Melting	**DLP** Digital Light Processing	**FDM** Fused Deposition Modeling	**FGF** Fused Granulate Fabrication
MATERIALS	UV-curable photopolymers	Polyamide (Nylon), TPU, PP, fiber/glass-reinforced polymers	Metals: stainless steel, titanium, aluminum, Inconel	UV-curable photopolymers (similar to SLA)	Thermoplastics (PLA, ABS, PETG, PC, etc.)	Thermoplastic granulates (PP, ABS, PA, fiber-reinforced, etc.)
ADVANTAGES	Very high resolution, smooth surfaces	Strong parts, no support structures needed	Extremely strong, dense parts; suitable for functional components	Faster exposure, very high detail	Low cost, easy to use, wide material range	High throughput, very economical, granulate recycling possible
DISADVANTAGES	Brittle parts, limited UV/weather resistance	Rough surface, requires post-processing	High energy consumption, expensive equipment	Similar to SLA; limited exposure area	Lower surface quality, limited accuracy	Low resolution, rough surface, limited standardization
DIMENSIONAL ACCURACY	Very high (~ 25 - 50 µm)	Medium (~ 100 µm)	High (~ 20 - 50 µm)	Very high (~ 25 - 50 µm)	Low to medium (~ 100 - 300 µm)	Low (~ 300 - 1000 µm)
SURFACE FINISH	Very smooth	Rough, powdery	Good to excellent (after post-processing)	Very smooth	Layer lines visible, rough	Very coarse, visible extrusion lines
MECHANICAL STRENGTH	Medium (brittle)	High (isotropic, functional parts)	Very high (metallic properties)	Medium (similar to SLA)	Medium to low (anisotropic, direction-dependent)	High (especially with fiber reinforcement)
PART COST	Medium to high	Medium	High	Medium	Low	Very low (especially for large parts)