Additive Manufacturing & 3D Printing News Roundup (July 5–18, 2025)

Industry News (Launches, Investments, M&A)

M&A: German machine tool giant TRUMPF is divesting its Additive Manufacturing division, selling the entire metal 3D printing business to Munich-based private equity fund LEO III (managed by DUBAG) [1]. The carve-out will form a new Schio, Italy-headquartered company focused on end-to-end metal AM solutions (design, production, automation, and sales). All TRUMPF employees in the AM unit across Italy, Germany, and the US will transfer to the new firm, which will initially continue using the TRUMPF TruPrint brand [2] [3]. This move lets TRUMPF refocus on core businesses while the new company aims to become a leading integrated metal AM provider. (Notably, sector consolidation continues: Nano Dimension **completed its acquisition of Markforged** for $116 million [4], and Japan's Sodick recently bought metal printer maker Prima Additive, as earlier announced.)

IPO: California-based medtech startup **Carlsmed** (known for its AI-driven, patient-specific spinal implants) filed to go public on Nasdaq, aiming to raise ~$101 million [5]. The company plans to sell 6.7 million shares (ticker "CARL") at $14–16 each. Carlsmed booked $32 million revenue in the last 12 months and will use the IPO funding to scale production of its 3D printed titanium spine fusion devices across more hospitals [6]. The move underscores growing investor confidence in 3D printed healthcare solutions as Carlsmed's personalized implants (cleared by FDA with Breakthrough Device designation) see successful outcomes in hundreds of patients with <2% revision rates [7] [8].

Partnerships & Expansions: Several strategic collaborations were announced to accelerate AM adoption. **Sandvik** and Dutch OEM **Additive Industries** formed a powder supply partnership to improve metal powder handling in Additive Industries' MetalFab systems [9] [10]. Sandvik will pre-fill the MetalFab's sealed Powder Load Tool hoppers with qualified alloys (like IN718, 316L, Ti-6Al-4V) under inert, traceable conditions at its production site, enabling safer, streamlined powder logistics for MetalFab users [10] [11]. In post-processing, UK-based **AMT PostPro** partnered with reseller **TriMech Group** to distribute automated post-print finishing systems (for support removal & surface smoothing) across North America [12]. TriMech's broad presence will provide sales and support for AMT's machines in the U.S. and Canada, helping more manufacturers adopt efficient post-processing. In software, workflow developer **Authentise** is bundling its AM management tools with **Autodesk Fusion 360** for an integrated digital manufacturing offering [13], combining design and production data to streamline end-to-end workflows. On the operations side, UK utility company **United Utilities** reported it is **integrating 3D printing into daily operations** after a successful "Printfrastructure" pilot, using AM to produce spare parts for wastewater treatment equipment and reduce downtime [13]. Meanwhile, Chinese OEM **Farsoon** marked a milestone of **150+ sales** of its large-format metal 3D printers worldwide [14], and cold spray specialist **Impact Innovations** revealed it has **100+ cold spray AM systems installed** across 30 countries – both signs of scaling industrial adoption. These developments highlight robust investment, consolidation, and collaboration trends as the AM industry matures.

New Product & Technology Announcements

Software & Platforms: 3D file marketplace **MyMiniFactory** launched a new **Premium Merchant Program** to attract makers impacted by Etsy's ban on unlicensed 3D prints [15] [16]. For $25/month, independent 3D print sellers can get verified as licensed producers on MyMiniFactory, which grants them access to over 150,000 designs and ensures automatic royalty payments to original designers. The program aims to create a fair ecosystem for creators and makers by curbing design piracy and enabling a sustainable income stream (early uptake has been strong) [17] [18]. In education tech, **UltiMaker** (the merged Ultimaker/ MakerBot) **unveiled "MakerBot Nebula," an AI-driven learning platform** for 3D printing in K–12 classrooms [19]. Nebula provides interactive curricula and projects tailored to students, using AI to adjust lessons and help teachers integrate 3D printing into STEM education. This initiative seeks to lower the barrier for schools by combining cloud-based lesson plans with the MakerBot ecosystem, inspiring the next generation of makers. Additionally, materials engineering firm **QuesTek upgraded its ICMD software** to support new titanium alloys [20]. The update lets users model Ti-alloy behavior (phase microstructure evolution under various heat treatments and cooling rates) and predict grain morphology in 3D printed parts [21]. By simulating how process parameters affect Ti-6Al-4V and other alloys, ICMD helps engineers develop printable titanium materials with optimized strength, ductility, and fatigue properties faster and with fewer experiments.

Materials & Accessories: High-performance filament offerings continue to expand. U.S. manufacturer **3DXTECH** introduced a **reformulated Obsidian CF v2** carbon-fiber nylon specifically for Markforged printers [22]. After customer feedback that the first version fell short, the new Obsidian™ CF is engineered to be a true one-to-one substitute for Markforged's Onyx material – delivering comparable strength, print quality, and reliability at a lower cost [23] [24]. 3DXTECH reports that Obsidian v2 has been validated for consistent performance and even works with Bambu Lab's AMS, giving users more third-party material choices. Chinese filament maker **Polymaker** also rolled out **Fiberon PA612-ESD**, a carbon-nanotube-filled nylon aimed at electronics manufacturers [25] [26]. This ESD-safe material withstands 157 °C and offers high strength and stiffness with less moisture sensitivity, making it ideal for printing anti-static jigs, fixtures, and

PCB assembly tools [27] [28]. By blending properties of PA6 and PA12, Polymaker targets the growing demand from companies using desktop printers for functional production parts beyond basic PLA [29] [30]. On the hobbyist side, a creative maker launched the **AeroDry 2.0 filament dryer** on Kickstarter – a modular, fully 3D printable dry box system for keeping spools moisture-free [31] [32]. Users 3D print the stackable chamber components and add off-the-shelf fans and heaters to build a custom dehydrating storage tower. The AeroDry 2.0 can scale to hold from 1 kg up to 12 spools with active heated airflow through each chamber, allowing continuous printing with consistently dry filament [33] [34]. The campaign quickly met its funding goal, underscoring maker community interest in DIY accessories that improve print quality.

Regulatory & Standards Developments

Medical Device Approvals: In a significant regulatory win, **3D Systems** and partner **TISSIUM** obtained **FDA approval for a 3D printed nerve repair implant** [35]. The device, **COAPTIUM® CONNECT**, is a bioresorbable, suture-free scaffold that joins severed peripheral nerves, enabling regenerative healing without traditional sutures. It's fabricated via a custom 3D printing process pairing TISSIUM's biomorphic polymer with 3D Systems' bioprinting technologies, and this approval marks the first FDA-cleared 3D printed solution for nerve damage, offering surgeons a novel way to reconnect nerves while preserving tissue integrity [35] [36]. Up north, Canada's regulator Health Canada gave clearance to Ottawa-based startup **Nanochon** to launch the **first-in-human trial of a 3D printed knee cartilage implant** [37]. Nanochon's device, a lattice scaffold designed to regenerate damaged joint cartilage, will soon be tested in patients after promising preclinical results. These green lights signal growing regulatory confidence in additive manufacturing for critical implants, provided companies demonstrate safety and efficacy. (On the standards front, no major new additive standards were issued during this period, though industry groups continue to work on certification programs launched earlier in the year.)

Key Academic & Research Findings

Infrastructure Repair: A team from UMass Amherst and MIT demonstrated that **cold spray additive manufacturing can rehabilitate aging bridges on-site** [38] [39]. In a field trial in Massachusetts, engineers used a mobile cold spray system to deposit layers of steel onto a corroded bridge beam, successfully restoring its thickness and structural strength [38]. The proof-of-concept showed that bringing the "printer" (a high-velocity metal powder spray) to the bridge, rather than doing repairs in a shop, could reinforce infrastructure with minimal traffic disruptions [39]. After a few years, the treated beam section will be analyzed to assess powder adhesion and durability in real-world conditions, but initial results indicate this could be a faster, cheaper way to extend the life of deteriorating bridges [40] [41].

Advanced Photonics: Researchers at SUTD in Singapore developed a technique for **3D printing glass nanostructures that reflect almost all visible light** [42] [43]. By formulating a novel photocurable "Glass-Nano" resin (organic polymer mixed with silica precursors), they printed photonic crystal lattices via two-photon polymerization. Subsequent heat treatment at ~650 °C shrank and converted the polymer to pure silica glass with features as fine as 260 nm [43]. The resulting 3D nanostructures formed a 20-layer diamond-like photonic crystal that achieved near-100% reflectance across the visible spectrum [43] [44] – a remarkable result, since glass (a low-index material) usually isn't nearly so reflective at that scale. This research, published in *Science*, suggests new possibilities for all-dielectric mirrors and optical components. The team is now exploring how 3D-printed hybrid-index nanostructures could reduce losses in photonic devices [45].

Biofabrication for Space: Scientists at Texas A&M University are pioneering a **synthetic lichen material for autonomous construction on Mars** [46] [47]. The system combines cyanobacteria and fungi in symbiosis – mimicking natural lichens – to bind Martian soil into solid structures without human intervention. In a recent paper, the TAMU team showed that their engineered microbes can secrete biopolymers that **cement regolith particles together** using only Martian soil simulant, water, air, and sunlight [48] [49]. Unlike past approaches that needed constant nutrient supply or human labor, this self-growing material could continuously produce bricks or habitat components *in situ*. The project, funded by NASA's NIAC program, is also working on a regolith-based bio-ink that could be fed into 3D printers on Mars [49] [50]. Such research addresses the huge challenge of building infrastructure off-Earth and could complement mechanical methods (like sintering regolith with focused sunlight, as Chinese researchers are doing) to enable long-term lunar or Martian outposts.

Cultural Heritage & Sustainability: Innovative uses of AM are tackling niche problems. For example, architectural researchers at Virginia Tech devised a modern take on ancient cooling methods by creating **3D printed clay partitions for passive indoor cooling**. The team 3D printed hollow cylindrical columns from earthenware clay, then filled them with water and sand to act as evaporative coolers. As warm air passes through the porous, water-filled columns, evaporation absorbs heat and can lower the ambient air temperature by up to 10 °F [51] [52]. Thermal imaging tests on different column designs showed how geometry and surface textures influence cooling performance [53]. The aesthetically pleasing terracotta wall (inspired by traditional *muscatese* evaporative windows and *zeer pot* coolers) doubles as decor while reducing reliance on energy-intensive AC systems [54] [55]. This sustainable design could be scaled into interior partitions or functional art installations that passively improve comfort in hot climates.

Notable Applications Across Sectors

Aerospace: China achieved a milestone in propulsion by **flight-testing a fully 3D printed turbojet engine** [56] [57]. The state-owned AECC firm produced a 353 lb-thrust jet entirely via additive manufacturing and topology optimization, then successfully flew it to 4,000 m altitude in Inner Mongolia [56]. This is China's first additively manufactured turbojet to be validated in flight, and engineers were able to integrate complex internal geometries that would be impossible to make via casting or forging [58]. The weight-optimized AM design points to a new approach for developing light, high-performance engines, potentially helping China reduce dependence on imported turbine tech [59] [60]. While this was a UAV-scale engine, it demonstrated that a flightworthy design can be printed and flown; the next challenges will be scaling production, ensuring material quality, and meeting rigorous aerospace certification standards [61] [62]. In the private sector, additive rockets are advancing too – U.S. startup New Frontier Aerospace hot-fired its 3D printed **Mjölnir** rocket engine (a full-flow staged combustion design), and South Korea's INNOSPACE set up a fully integrated AM engine production line, cutting its rocket engine part count by 90% [63] [64].

Space Construction: Researchers in China have developed a method to **3D print building blocks from actual lunar soil**, signaling progress toward future Moon bases. A national lab in Anhui province built a system using focused solar energy and fiber-optic lasers to fuse lunar regolith into solid shapes [65] [66]. In ground tests, their prototype printer successfully melted lunar soil (returned from China's Chang'e missions) and formed standard bricks and complex components out of the material [65] [67]. This achievement proves that **in-situ resource utilization (ISRU)** for construction is feasible – structures can be made on the Moon *using the Moon's own soil*, without transporting cement or feedstock from Earth [68] [69]. The ability to 3D print roads, platforms, or habitat walls from native regolith could drastically lower the cost and complexity of setting up crewed lunar research stations [70] [71]. The Chinese team overcame challenges like efficiently

concentrating sunlight for heating and controlling the process in a lunar-like vacuum. Their work complements other space fabrication research (including biofabrication efforts for Mars at TAMU) and lays groundwork for sustainable off-world construction technologies.

Automotive Restoration: Vintage tractor enthusiasts are leveraging 3D printing to **reproduce obsolete parts** for century-old farm equipment. In the U.S., specialized restorers are 3D scanning broken or missing components of rare tractors and either **printing replacement parts directly or printing molds for castings** [72] [73]. Alex Fuselier of Aumann Auctions uses a tabletop 3D scanner to digitize parts and reprint them as needed, saving digital backups for future use [72]. Likewise, K.R. Hough of Traction Engineering virtually rebuilt a 1920s **"Humpback" Best Model 30 tractor** using a combination of CNC and 3D printed parts [74]. Several pieces (seat, engine block, pistons, etc.) were 3D printed in plastic, then sent to a foundry to be cast in metal [73].

An antique "Humpback" orchard tractor was restored using 3D printed patterns and parts. This hybrid workflow (printing patterns instead of hand-carving wooden ones) dramatically cuts time and cost – though casting can still be pricey for one-off parts, it's often cheaper than traditional pattern making [75]. Enthusiasts note that as metal 3D printing costs come down, they could even bypass casting entirely and print some metal spares directly. Such applications show how AM helps preserve industrial heritage, keeping historic machinery running even when original parts are long out of production.

Consumer Goods: Adidas has fully embraced 3D printing in footwear with the commercial launch of its **CLIMACOOL 3D printed sneakers**. The new CLIMACOOL, developed in partnership with Carbon, features a one-piece lattice structure printed via Digital Light Synthesis for optimal airflow and comfort [76]. Unlike earlier limited-edition 3D printed shoes, this model was mass-produced and globally released in mid-2025, retailing for under $200 – a breakthrough in making 3D printed consumer products widely available [76]. The lattice midsoles and uppers are printed in a single continuous build, eliminating seams and reducing labor. By updating a popular early-2000s Adidas design with cutting-edge 3D printing, the company can offer high-performance, customizable shoes at scale. The success of the CLIMACOOL line (including a newly revealed laced version for better fit) demonstrates how additive manufacturing is moving into mainstream apparel, enabling designs that were impossible to create with traditional shoe molding. Industry observers

note that as print speeds and materials improve, we may see an even broader range of affordable 3D printed consumer goods – from footwear to eyewear and beyond – hitting the market in the coming years.

Medical & Dental: Additive applications are improving patient care through personalization. In Vietnam, surgeons performed a groundbreaking **total femur bone replacement** using a 3D printed implant, restoring mobility to a cancer patient (this world-first surgery was reported just before our roundup period) [77] [78]. In the US, activity is ramping up in orthopedic trials – aside from Nanochon's knee cartilage implant trial, at least half a dozen custom 3D printed spinal and dental implants have entered clinical use or testing this year. Dental labs worldwide are also rapidly adopting AM for clear aligners, crowns, and dentures; for instance, Stratasys reseller **SYS Systems** saw a **350% jump in dental 3D printer sales** in the UK, as dental offices invest in in-house printing systems [79]. From prosthetic limbs to bioprinted tissues, the past two weeks underscored that medical applications of 3D printing are progressing on all fronts – achieving regulatory milestones, demonstrating life-changing patient outcomes, and being integrated into everyday clinical workflows.

Sources: This roundup compiles information from connected industry news sites, company press releases, and research publications. Key sources include 3DPrint.com briefs [80] [9], 3D Printing Industry reports [56] [65], TCT Magazine, Metal AM, and others, as cited throughout.

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