

TARKAN TAŞKIN

Additive Manufacturing Lead | Metal LPBF (SLM) & Polymer SLS | DfAM | Design & Project Manager

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Military service: completed · Driving license: Class B

PROFESSIONAL SUMMARY

Additive manufacturing lead and design manager with 5 years of hands-on metal and polymer AM production at ETİM A.Ş., covering the full chain from DfAM and build preparation to heat treatment, post-processing, CNC finishing and AS9100-based quality management. Runs a twin-laser SLM 280 2.0 (LPBF) and an EOS P396 (SLS) for aerospace, automotive and industrial customers, with build experience in nickel superalloys (Inconel 718/625), Ti6Al4V, steels, Co-Cr and copper alloys.

Inventor on 3 registered Turkish patents for additively manufactured components, 2 of them also published internationally (WO2024151233A1, WO2024158354A1). Currently completing an MSc in applied statistics, bringing statistical process analysis and CAE/FEA to AM qualification work. 14 years of CAD/CAM/CAE training experience (Siemens NX, CATIA, SolidWorks, ANSYS).

CORE COMPETENCIES

- **Metal AM / LPBF:** SLM 280 2.0 twin-laser (2x400 W) operation, build preparation, support strategy, process troubleshooting, parameter development (AlSi10Mg)
- **Polymer AM / SLS:** EOS P396 production planning, nesting, cost modeling and scheduling
- **AM materials:** Inconel 718, Inconel 625, Ti6Al4V, AlSi10Mg, AISI 316L, 17-4PH, 1.2709 / M300 maraging steel, F75 Co-Cr, copper alloys
- **Post-processing:** stress relief and aging heat treatment in argon atmosphere, depowdering and surface finishing (AM Solutions S1/M1), sandblasting, wire EDM part removal (ONA AF35)
- **Machining & CAM:** 5-axis milling (DMG MORI DMU 50), turning (CTX beta 800 TC), Siemens NX CAM, SolidCAM
- **Design & simulation:** Design for Additive Manufacturing (DfAM) with nTopology, lattice/TPMS structures, AM process analysis with Oqton Amphyon, reverse engineering, FEA (Ansys Workbench) and CFD (Ansys Fluent)
- **Quality & management systems:** internal auditor for AS9100 Rev.D, ISO 9001, ISO 27001, ISO 14001 and ISO 45001 (ISO 19011:2018); QMS and ISMS Management Representative; integrated management system implementation, ISO 9001 production documentation (work orders, operation cards, work instructions), OES chemical composition verification against ASTM/EN specifications
- **Project & R&D management:** EU Digital Europe project work-package lead, R&D grant proposals, customer quotation and project delivery

PROFESSIONAL EXPERIENCE

ETİM A.Ş. (Eskişehir Design and Innovation Center) — Eskişehir, Türkiye

Design & Project Manager · Aug 2026 – Present

Head of Design · Jan 2025 – Aug 2026

Design Expert · Nov 2021 – Mar 2025

- Manage metal AM production on the SLM 280 2.0 twin-laser LPBF system: build setup, support design, troubleshooting and plate removal for aerospace, automotive and industrial parts.
- Performed LPBF build simulation using Oqton Amphyon / Netfabb to assess distortion, residual stress and support strategy; used simulation results to optimize part orientation and support configuration before production.
- Correlated predicted deformation with dimensional inspection results from printed parts and iterated support/orientation strategies.
- Plan and cost polymer production on the EOS P396 SLS system; developed in-house cost-modeling and scheduling tools.
- Define post-processing routes: stress relief before plate removal and combined aging for 1.2709/M300 maraging steel, argon-atmosphere heat treatment, depowdering, blasting and wire EDM.
- Program and finish AM parts on 5-axis and turning centers with Siemens NX CAM, including threading strategies for AlSi10Mg and 316L.
- Verify powder and part chemistry with OES analysis against ASTM/EN specifications, including contamination screening and PREN evaluation for 316L.

- Apply DfAM, reverse engineering and FEA to redesign customer components for additive manufacturing; work led to 3 registered patents.
- Serve as Quality Management System (QMS) and Information Security Management System (ISMS) Management Representative; took a direct role in establishing ETİM's AS9100, ISO 9001, ISO 27001, ISO 14001 and ISO 45001 management systems, including production documentation (work orders, operation cards, work instructions).
- Lead Work Package 3 of the EU-funded AI4GTEch Anatolia EDIH project (No. 101269818).
- Lead an R&D project proposal on AlSi10Mg process parameter development for the SLM 280 2.0.
- Prepare technical and commercial proposals for CNC and AM manufacturing customers and manage delivery.

Instructor — Bilişim Eğitim Merkezi, Eskişehir · Jul 2012 – Nov 2021

- Delivered corporate CAD/CAM/CAE training in Autodesk, Dassault Systèmes (CATIA, SolidWorks), Siemens NX and ANSYS for industrial companies.

Guest Instructor — Eskişehir Osmangazi University, Faculty of Engineering & Architecture · Jul 2014 – Dec 2021

- Taught Computer Aided Design I & II, Building Information Modeling, Advanced Portfolio Design, Design Thinking.

Founder — TT Design Studio · Jan 2016 – Nov 2019

- Delivered industrial design, interior design and R&D projects for clients.

Partner, Design & R&D Manager — BİLET Education, Science & Society · Jan 2015 – Jan 2016

- Designed equipment and tools for science experiment centers.

Instructor — Anadolu University, Faculty of Architecture and Design · Jan 2014 – Sep 2016

- Taught Computer Aided Design, Visualization in Digital Environment and Design Studio.

KEY PROJECTS

Additive manufacturing & aerospace

- **Oil–Fuel Heat Exchanger for Aircraft Engines** — DfAM redesign with AM build simulation and iterative CFD analysis (Ansys Fluent); nearly 30% weight reduction and improved thermal efficiency
- **Large-Diameter Cutting Tool Holders by Additive Manufacturing** — joint project with Karcan Kesici Takım and TUSAŞ (TAI)
- **High-Efficiency Heatsink with TPMS Lattice Structures** — metal AM, joint project with KEMSAN; DfAM design with AM build simulation and iterative CFD analysis (Ansys Fluent), nearly 80% weight reduction and improved thermal efficiency up to 30%
- **High-Efficiency Evaporator by Metal Additive Manufacturing** — joint project with TASİS; DfAM design with AM build simulation and iterative CFD analysis (Ansys Fluent), nearly 55% weight reduction and improved thermal efficiency
- **Variable-Resolution DLP 3D Printer Design** — joint project with 3BFAB

Mechanical design & defense

- **Next-Generation Hand Brake Mechanism** — joint project with TASİS Makina
- **Pin Shear Force Determination** — joint project with Rotafilo
- **Virtual Training Equipment for Military Training: Additive Manufacturing and Assembly** — joint project with Savronik
- **OYA Stockman AGV Project** — joint project with Modoya

Quality & institutional development

- **AS9100, ISO 9001 and ISO 27001 Certification Consultancy and Training** — ETİM, funded by BEBKA (Bursa Eskişehir Bilecik Development Agency)
- **Establishment of Eskişehir Design and Innovation Center** — EU IPA-II funded project

PATENTS

- **Ice Maker (Buz Oluşturucu)** — TR 2023/000959, registered 21 Feb 2024 · International: WO2024158354A1, 2 Aug 2024. Ice maker with an additively manufactured body carrying the cooling fluid.
- **A New Water Spraying Apparatus for Ice Machines** — TR 2023/000402, registered 23 Oct 2023 · International: WO2024151233A1, 18 Jul 2024. Nozzle water-distribution system for industrial ice machines.
- **Brake Assembly for Railway Wagons (Vagonlar İçin Bir Fren Tertibatı)** — TR 2022/021372, registered 22 Jul 2024. Wagon brake gear assembly with an additively manufactured housing.

EDUCATION

- **MSc, Applied Statistics (in progress)** — Eskişehir Osmangazi University · Thesis: *CHAID Analysis and Artificial Intelligence Applications*
- **BSc, Mathematics Education** — Anadolu University · 2007 – 2011

TRAINING & CERTIFICATIONS

- **ISO 9001, ISO 14001 and ISO 45001 Internal Auditor Training** · 2026
- **DMG MORI CTX beta 800 TC** — SINUMERIK 840D sl (Operate) / CELOS programming, operation and basic maintenance certificate · Aug 2024
- **DMG MORI DMU 50** — SINUMERIK 840D sl (Operate) / CELOS 5-axis programming, operation and basic maintenance certificate · Jul 2024
- **Oqton Amphyon** (AM process analysis and simulation) — Digimode · Mar 2024
- **AS9100 Rev.D Internal Auditor Training (based on ISO 19011:2018)** — Quality Planet · Feb 2024
- **AS9100 Rev.D Aerospace & Defense QMS Fundamentals and Documentation** — Quality Planet · Nov 2023
- **ISO/IEC 27001 Information Security Internal Auditor Training** · 2023
- **Advanced Additive Manufacturing for Polymer Applications** — EOS Additive Minds Academy · Apr 2023
- **3DEXPERIENCE CATIA – CAM** · Dec 2022
- **3DEXPERIENCE CATIA – Advanced Level** · Dec 2022
- **Operation of System EOS P396** — EOS Additive Minds Academy · May 2022
- **3DEXPERIENCE CATIA – Additive Manufacturing** · May 2022
- **Geomagic Design X Reverse Engineering** · Mar 2022
- **SLM Solutions Advanced Application Training** · Feb 2022
- **SLM Solutions Basic Training** · Feb 2022
- **3DEXPERIENCE CATIA – Fundamentals** · Dec 2021
- **infoTRON smartSCAN R12 Reverse Engineering System** · Nov 2021

TECHNICAL SKILLS & LANGUAGES

- **AM build preparation & process simulation:** Materialise Magics (STL repair, orientation, support generation, nesting), Autodesk Netfabb (build preparation, lattice generation, metal PBF distortion simulation), Oqton Amphyon (AM process analysis and simulation)
- **DfAM, generative design & topology optimization:** nTopology (nTop, lattice/TPMS structures, topology optimization), Ansys Discovery (real-time simulation, topology optimization), Autodesk Fusion 360 (generative design)
- **CAE / Simulation:** Ansys Fluent and Ansys Discovery (CFD, conjugate heat transfer), Ansys Workbench (structural FEA)
- **CAD:** Siemens NX, CATIA (3DEXPERIENCE), SolidWorks, Autodesk Inventor, Fusion 360, AutoCAD, Rhino 3D, Revit
- **CAM & CNC:** Siemens NX CAM, 3DEXPERIENCE CATIA CAM, SolidCAM, SINUMERIK 840D sl / CELOS
- **Reverse engineering:** Geomagic Design X, Geomagic Control X, Hexagon smartSCAN R12
- **Data & programming:** MATLAB, SPSS, advanced Excel and VBA, machine learning
- **Methods:** DfAM, reverse engineering, TRIZ, design thinking
- **Equipment:** SLM 280 2.0, EOS P396, DMG MORI DMU 50, CTX beta 800 TC, ONA AF35 wire EDM, AM Solutions S1/M1, argon heat treatment furnace
- **Languages:** Turkish — Native | English — Professional Working Proficiency (B2) | French — Basic (A2)