

Iliya Baktash



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Karaj, Iran



2001-02-16

Professional Summary

Piping Engineer with an M.Sc. in Mechanical Engineering and hands-on experience in piping design, modeling, and stress analysis support for industrial projects. Proficient in AVEVA PDMS, SolidWorks, AutoCAD, and CAESAR II, with strong capability in producing isometrics and piping layouts aligned with ASME B31.3 standards. Experienced in P&ID review, line list revisions, MTO preparation, and piping support design, collaborating effectively with multidisciplinary teams to deliver compliant and constructible piping solutions.

Education

Iran University of Science and Technology

Master of Science Degree in Mechanical Engineering Energy Conversion (Sept 2023-Sept 2025)

Grade: 16.57/20.00

Iran University of Science and Technology

Bachelor's Degree in Mechanical Engineering (Sept 2019-Sept 2023)

Grade: 17.54/20.00

Work Experience

Mechanical Engineer (PI, QC, ME)

Kerend Control Aban (Tavazon Farab Workshop)

Full Time 2025- Present

Design Engineer & Piping Engineer

TTS Group

Full Time 2023 – 2024

Projects

Tabriz Petrochemical Company (TPC) Wastewater Treatment

Kerend Control Aban (KCA), Tabriz, Iran | 2025 – 2026

- Preparing Hydrotest Spec. for all the PVC, PE, SS, and CS Pipe. (PI, QC)
- Generating Piping Support Drawing for the SS, CS, PE, and PVC pipes and tagging all the supports based on the equipment and skids. (PI)
- Transmitting the Critical line list based on the after pump or heat exchanger pipes and analyzing them in CAESAR II. (PI)
- Generating the Stress Analysis Design Criteria to find the lines required stress analysis report. (PI)
- Revising the line list of the TPC, based on the new revision of P&ID (PI)
- Preparing Manual Valve List (BBV, BV, BFFV, GV, GLV, PRV, PSV). (PI)
- Designing and constructing Dosing Pump Skids for the RO and UF Backwash using SolidWorks. (ME)
- Stress Analysis of the dosing pump skids based on AISC using SolidWorks Simulation. (ME)
- Controlling the thickness of the 3-layer painting method based on the painting procedure spec. (QC)

Arfa Steel Company Wastewater Treatment

Kerend Control Aban (KCA), Ardakan, Iran | 2025 – 2026

- Preparing Painting Procedure, Inspection and Test Plan, and Welding Procedure. (QC)
- Generating Equipment Assembly Drawing for the equipment plan and its foundation using AutoCAD. (ME)
- Transmitting the line list of the project based on the revised P&ID. (PI)
- Designing Pump Supports for the RO and UF feed Pumps using SolidWorks. (ME)
- Stress Analysis of the Pump Supports for optimization based on AISC. (ME)
- Controlling the thickness of the 3-layer painting method based on the painting procedure spec. for RO and UF Skids. (QC)

Sari Waste-to-Energy Power Plant Piping Design

TTS Group, Sari, Iran | 2023 – 2024

- Designed and modeled piping runs for process and utility systems using AVEVA PDMS, ensuring integration with plant equipment such as pumps and valves.
- Generated isometric drawings via Isodraft, verifying alignment with P&IDs and project specifications.
- Prepared nozzle orientation drawing for static equipment.
- Modeling Piping, Equipment, and Structure based on the P&ID drawing, Plot plan, and mechanical drawings.
- Designed piping around mechanical equipment, including boilers, pumps, heat exchangers, and vessels.
- Prepared piping plan drawings via AVEVA PDMS Draft module and AutoCAD.

Waste Separation Conveyor System

TTS Group, Sari, Iran | 2023 – 2024

- Simulating and 3D Modelling 12 Line Conveyors using Sidewinder and SolidWorks for Sari Waste Separation System.
- Finite Element Analysis for the structure of conveyors using SolidWorks Simulation.
- Estimating the Power Required, Drum and Idler Diameter, and Belt Tension for a Conveyor using MATLAB Programming.
- Generating bill of materials, cutting plans, and constructing drawings for the conveyor system in Sari.

Skills

Piping Design & Analysis

- **AVEVA PDMS:** Proficient in 3D piping modeling, equipment integration, and Isodraft for generating fabrication-ready isometric drawings.
- **CAESAR II:** Skilled in preparing PCF files from PDMS/Isodraft and reviewing stress analysis outputs to support ASME B31.3 compliance.
- **Fluid Flow & Analysis:** Experienced with AFT Impulse (water hammer analysis), PIPENET (fluid flow simulation), Pipe Flow Expert (pipe sizing and optimization), and ANSYS (Fluent, Mechanical).
- **Piping Standards:** Familiar with ASME B31.3, ASME B31.1, ASME B36.10, ASME B36.19, ASME B16.11, AISC, and API 610 for piping design and stress analysis.

CAD & Engineering Software

- **SolidWorks:** 3D modeling of mechanical components and FEA.
- **AutoCAD:** 2D drafting for piping layouts and P&ID development.
- **Microsoft Office:** Excel (Material Take-Offs, data analysis), Word (technical reports), PowerPoint (presentations), Project (scheduling).

Professional Skills

- **Collaboration:** Worked with process, stress, and layout teams to align piping designs with project requirements.
- **Technical Documentation:** Prepared Piping Material Specifications (PMS), Material Take-Offs (MTO), and stress analysis reports.
- **Problem-Solving:** Optimized piping routes and supports to enhance constructability and reduce design iterations.

Languages

- **English: Advanced, Full Proficiency**
- **Persian: Native**
- **French: Pre-intermediate**

Honors and Awards

Offered direct admission for PhD in Energy Conversion Engineering at Iran University of Science and Technology.

Offered direct admission for Master's in Energy Conversion Engineering at Iran University of Science and Technology.

Ranked among the top 10 percent of all Bachelor's students in Mechanical Engineering at Iran University of Science and Technology.