Sofia Marchetti

STAFF CHEMICAL ENGINEER

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SUMMARY

Staff chemical engineer with 8 years in high-purity electronic chemicals, owning purification processes that supply semiconductor fabs at parts-per-trillion metal limits. Sets technical direction for scale-up and process control, and leads design of experiments and statistical process control across 3 production lines.

SKILLS

Scale-Up • Design of Experiments • Statistical Process Control • Distillation • Ion Exchange • Contamination Control
Root Cause Analysis • Python • HAZOP • Technical Leadership

EXPERIENCE

Staff Chemical Engineer 01/2023 - Present

Sonoran Electronic Materials Chandler, AZ

Senior technical role at a plant making ultra-high-purity acids and solvents for chip fabs.

- Establish the purification strategy for a new electronic-grade sulfuric acid line rated at **25,000** tons a year.
- Conduct design of experiments on distillation and ion exchange steps that cut trace metals 60% below customer limits.
- Review process designs, HAZOPs and MOCs for 3 lines as the plant's final technical sign-off.
- Resolve customer quality complaints with root cause analysis, closing 14 fab cases without losing an account.

Senior Chemical Engineer 06/2020 - 12/2022

Mesa Advanced Materials Mesa, AZ

Maker of photoresist strippers and wet clean chemicals for semiconductor customers.

- Scaled 4 stripper formulations from 20-liter lab batches to **10,000-liter** production.
- Introduced statistical process control on 35 critical parameters, lifting Cpk above 1.33 on every one.
- Cut filtration cost $380K a year by qualifying a second filter supplier with customer approval.
- Wrote 6 technology transfer packages for a sister plant in Texas.

Process Engineer 06/2018 - 05/2020

Mesa Advanced Materials Mesa, AZ

Process support for blending and packaging lines.

- Supported **2** blending and packaging lines serving 9 semiconductor customers.
- Built Python scripts to pull ICP-MS lab data into control charts, saving 6 analyst hours a week.
- Trained 20 operators on cleanroom handling and contamination control rules.

EDUCATION

Master of Science 05/2018

Arizona State University Tempe, AZ

Chemical Engineering

CERTIFICATES

Certified Six Sigma Black Belt 04/2021

American Society for Quality (ASQ)