

Atakan Özcan

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PROFILE

M.Sc. student in Materials Engineering at RWTH Aachen University, specialising in energy materials, with a background in metallurgical engineering. Hands-on cleanroom experience in electron-beam lithography, LPCVD growth and SEM/TEM characterisation, including independent tool operation and process parameter optimisation. Data-driven analysis in Python, plus FEM modelling in COMSOL and ANSYS. Six Sigma trained in structured problem-solving, root-cause analysis (8D) and continuous improvement under IATF 16949. Seeking to apply this to high-volume semiconductor manufacturing.

EXPERIENCE

Max Planck Institute for Solid State Research Feb 2026 – Jun 2026
Student Research Assistant Stuttgart, Germany

- Fabricated plasmonic nanoparticles through a full lithography workflow: PMMA coating, EBL patterning and lift-off
- Characterised nanostructures by SEM to verify fabrication quality and structural accuracy and EELS by STEM
- Performed spectroscopic ellipsometry to determine film thickness, refractive index (n) and extinction coefficient (k)
- Analysed experimental data obtained from STEM in Python using structured, reproducible workflows

Forschungszentrum Jülich GmbH Apr 2025 – Jan 2026
Student Research Assistant Jülich, Germany

- Derived electrical double layer theory (Gouy–Chapman and Bikerman models) from statistical field theory
- Implemented numerical ODE solutions in Python using NumPy, SciPy and pandas

Baykar Technology Oct 2022 – Dec 2022
Intern, Technical Project Department Istanbul, Turkey

- Designed and revised UAV components in CATIA

Electrical Unifil Automotive (EFI) Mar 2022 – Jun 2022
Intern, Supplier Quality Department Turkey

- Prepared technical error reports and drove 8D structured root-cause analyses to closure
- Supported IATF 16949 quality processes and continuous improvement, collaborating with suppliers and across internal departments

EDUCATION

RWTH Aachen University Apr 2024 – Present
M.Sc. Materials Engineering (Energy Materials) Aachen, Germany

- Thesis: tribology of NiCr–Cr₃C₂ HVOF/laser-cladding hybrid coatings on copper for continuous casting

Yıldız Technical University Sep 2018 – Feb 2023
B.Sc. Metallurgical and Materials Engineering Istanbul, Turkey

- Thesis: heteroepitaxial growth of monoclinic Ga₂O₃ on 4H-SiC in an LPCVD reactor; growth-parameter study and structural characterisation

SKILLS

Fabrication	Electron-beam lithography (EBL), cleanroom processing, tool operation, LPCVD, thin-film deposition, thermal evaporation, PMMA, lift-off
Characterisation	SEM, TEM/STEM, EELS, spectroscopic ellipsometry, defect and pattern inspection
Materials	Semiconductors, thin films, nanomaterials
Programming	Python (NumPy, SciPy, pandas, scikit-learn), MATLAB
Software	COMSOL, ANSYS, AutoCAD, CATIA, SolidWorks, $\LaTeX$, Microsoft Office
Methods	Design of experiments, statistical data analysis, structured problem-solving, continuous improvement
Standards	Six Sigma, 8D, IATF 16949, ISO 9001
Languages	Turkish (native), English (IELTS 6.5), German (A2, working toward B1)

CERTIFICATIONS

NanoIC Spring School on Advanced CMOS, imec • Spain–Turkey Advanced Engineering Program (Graphene and Quantum Applications) • RWTH Aachen German Language Course