

# Tuğser YILMAZ



Materials Science and Engineering MSc student at Koç University. Focused on electrochemistry especially electrocatalysis and battery. Eventual career goal is to become fully qualified engineer in 2D materials and integration of industry. Experienced in many material characterization techniques. Passionate to learn. Very curious about science.



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3<sup>rd</sup> May, 1999



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## EDUCATION

2022 – present

### Koç University

MSc in Materials Science and Engineering (100% Eng.)

- GPA of 3.34 /4.00

2017 – 2022

### Istanbul Technical University

BSc in Metallurgical and Material Engineering (100% Eng.)

- GPA of 3.59 /4.00
  - 3<sup>rd</sup> in the ranking
- Bachelor Thesis: Coating and characterization of Diamond-like Carbon (DLC) thin films

## SKILLS



MS Office

ThermoFisher

SCIENTIFIC Avantage



OriginLab



ImageJ



AutoCAD



Match!

## WORK EXPERIENCE

Oct 2022 – present



### Graduate Research and Teaching Assistant – Koç University / İstanbul

- Researcher at Boron and Advanced Materials Application and Research Center (KUBAM)
  - 2D Transition metal borides (MBenes) and its electrocatalytic application
  - Effect of Al deintercalation from MoAlB on Li-ion battery
- Teaching Assistant at General Chemistry 101/102 courses

Sep 2021 – June 2022



### Undergraduate Student – Istanbul Technical University / İstanbul

- Undergraduate student at Physical Vapor Deposition Laboratory
  - Synthesis and characterization of DLC films by doping metals such as titanium, molybdenum, and boron/nitrogen.

Dec 2021 – May 2022



### Engineering Intern – Türk Havaçılık Uzay Sanayii / Ankara

- Composite lay-up and autoclave processes
- Visual and non-destructive testing
- First article inspection and quality assurance report
- Possible errors in composite

Aug 2021 – Sep 2021



### Quality Assurance Intern – Bolt Bağlantı Elemanları A.Ş. / Bursa

- Surface treatment (phosphate, rinsing and lime bath)
- Wire drawing
- Machining and cold bolt forming machine
- Mechanical testing

July 2021 – Aug 2021



### Furnace & Batch Intern – Türkiye Şişe ve Cam Fabrikaları A.Ş. / Bursa

- Production of glass packages from raw materials to end product.
- Blend recipe preparation of different glass types used in glass packages.
- Glass forming methods such as PB, BB, and NNPB.

## PROJECT AND CONFERENCE

May 2024 / European Materials Research Society 2024 Spring Meeting

- Efficient Synthesis of Mo<sub>2</sub>AlB<sub>2</sub>: A Key Precursor in the Production of 2D MoB as a Promising Material for Catalytic Applications

October 2022 – present

- Synthesis and characterization of MAB phase and its transformation to the 2D transition metal boride called as MBene.
- Electrocatalytic performance of the MBene and its composite with Ni contains MOF.
- Effect of Al deintercalation from MoAlB and performance on Li-ion battery.

March 2022 – June 2022 / Environment & Ethics in Metallurgical &Material Process

- Recycling of Li-ion batteries with an approach of pyrometallurgy, hydrometallurgy and electrometallurgy

March 2022 – June 2022 / Problem Solving Techniques, Design and Project Management and Innovation

- Zinc Coating by Batch Hot-Dip Galvanizing on Steel Wire Rope
- Diamond like carbon Coating by PVD on Razor Blade

March 2021 – June 2021 / Quality Engineering

- Quality of Steel Wire Rope Strand (FMEA, QFD, Quality Plan)

March 2021 / Participant at TEI Aviation Engines School

- Investigation of gas turbines, piston engine and their designs.

## CHARACTERIZATION

## EXAM RESULTS

## LANGUAGES

### Hands on Experience

- XRD
- XPS
- UV-Vis/DRS
- FT-IR
- PL Spectroscopy
  
- SEM
- TEM
- EDX

**ALES:** 87,6  
**YÖKDİL:** 81,25

**Türkçe:** Native  
**English:** B2

## SOCIETIES

- Sep 2017 – June 2022** ITU Metallurgical and Material Engineering Student Club  
**Nov 2019 – June 2020** ITU Ultimate Frisbee Team  
**Nov 2020 – June 2021** ITU Branding Club