



# ONDOKUZ MAYIS ÜNİVERSİTESİ

Ondokuz Mayıs  
University

Prof. Dr. Omer Andac



# Infrastructure

We have a research laboratory devoted for the coin cell Li ion battery.

MBRAUN LABstar Glovebox

Gamry Reference 600 Potentiostat

Neware Coin Cell Battery Tester CT-4008-5V10mA-164  
Double Range Cycler

BTS-5V1mA 8 Channel Battery Analyzer (0.005 -1 mA,  
upto 5V)

Precision electrode disc cutter with 3 set cutting die,  
16mm, 19mm, 20mm

Hydraulic Crimper for All Types of Coin Cells



# Infrastructure

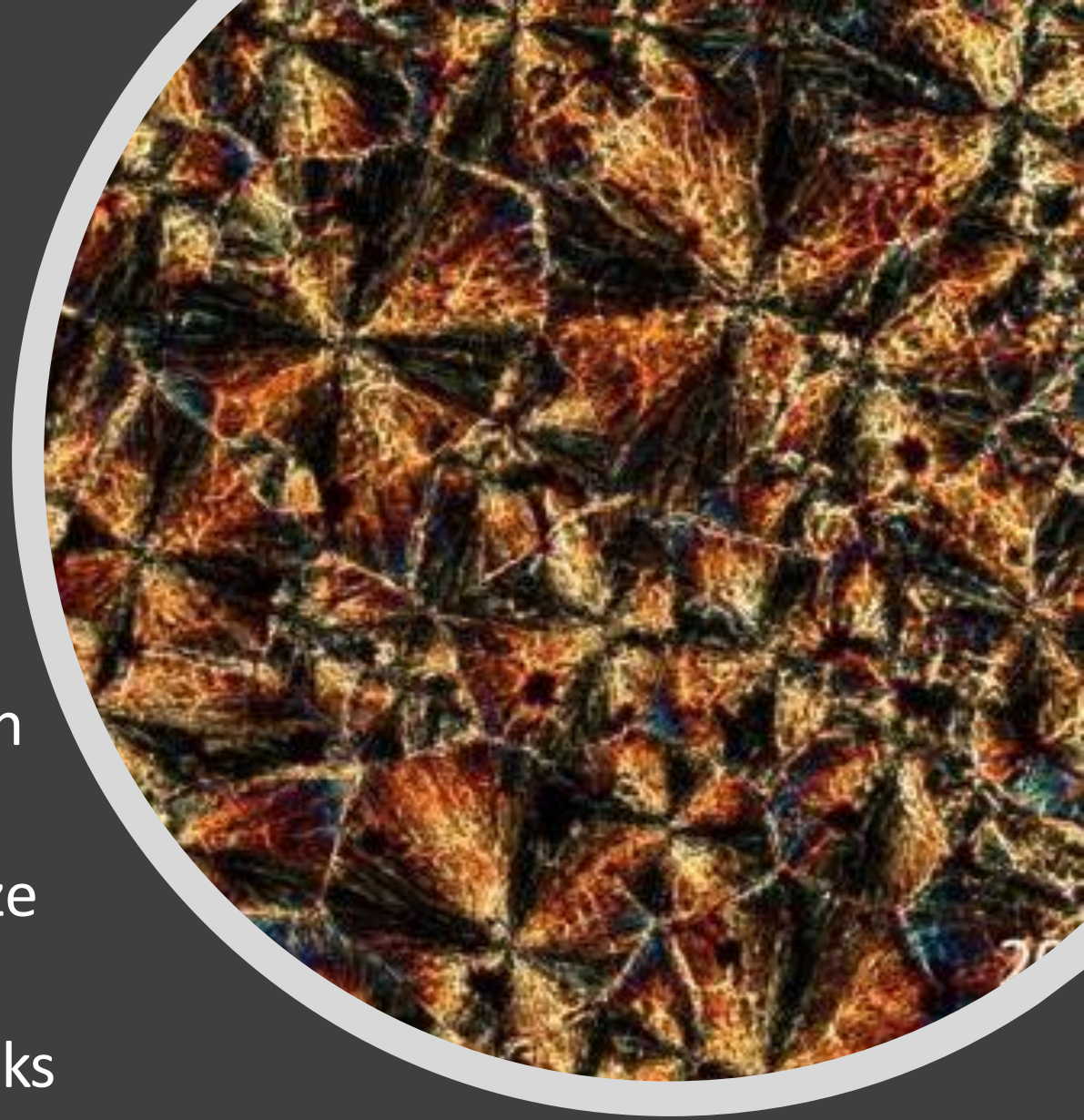
Our University has a central laboratory that is equipped with

- JEOL-JSM-7001F SEM with SE, BSE, EDX, WDX and STEM
- Leica EM UC7 Cryo Ultramicrotome
- RIGAKU Smartlab XRD
- NT-MDTNEXT AFM
- TA INSTRUMENTS SDT Q600
- TA INSTRUMENTS DSC Q2000
- TA INSTRUMENTS DMA Q800



# Capabilities

- We are able to prepare cathode and membrane materials.
- Our group is focused on The Solid polymer electrolytes for 4<sup>th</sup> generation bateries.
- We can make coin cell and characterize its properties.
- Technology readiness level of our works ranges from 2 to 6 for the coin cell.





# Battery Related Activities

TUBITAK Project No: 315M236.

Title: The Synthesis and Characterization of Solid Poly(ethylene oxide) Nanocomposite Electrolyte Materials with Nano-sized Metal Organic Frameworks (Nano-sized MOF) and Ionic Liquids. (Completed)

Patent application: TR 2018/12534  
Polymer nanocomposite electrolyte membrane for Li ion batteries



## Battery Related Activities

OMU Project: Simulation Study of the Lithium Ion Transport in Solid Polymer Electrolytes (Ongoing)

OMU Project: Solid electrolyte interphase (SEI) formation on Solid Polymer Electrolytes (Ongoing)



# Project proposals

Single-ion conducting polymer electrolytes for 4<sup>th</sup> generation Li Ion batteries.

In this project, solid-state electrolyte 3D framework with continuous lithium-ion conducting channels will be formed.

## Group Members

Prof. Dr. Omer ANDAC, Solid state chemist, Inorganic chemist,

Experienced on phase diagram of ceramics, polymeric coordination compounds and functional polymers. Expert on electron microscopy, X-ray diffraction and potentiostats



## Group Members

Prof. Dr. Muberra ANDAC,  
Analytical chemist

Experienced on potentiometric  
sensors, membran preparation and  
characterization, and nanoparticle  
synthesis and characterization

## Group Members

Ass. Prof. Dr. Engin BURGAZ,  
Polymer Scientist

Experienced on polymer  
electrolytes, polymer blends  
and polymer nanocomposites,  
and their characterizations.

# Contact

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