


1L-13 METAL-ORGANIC MATERIALS AND BIOSENSOR LABORATORY

Department	Department of Chemistry	
Laboratory Responsible	Prof. Dr. Yunus ZORLU	yzorlu@gtu.edu.tr
Research Team	Prof. Dr. Yunus ZORLU	yzorlu@gtu.edu.tr
	Prof. Dr. Mahmut DURMUŞ	durmus@gtu.edu.tr
	Res. Asist. Elçin Ezgi AHİ	eahi@gtu.edu.tr
	Res. Asist. Dilek ÖZTÜRK	dilekozturk@gtu.edu.tr
Contact Information	Adress: Gebze Technical University, Faculty of Science, Department of Chemistry Lab. 1L-13, 41400 Gebze-Kocaeli	Phone 0262 605 3119
General Information	<ul style="list-style-type: none">• Design, synthesis and characterization of metal-organic frameworks (MOF), hydrogen-bonded organic frameworks (HOF), and covalent organic frameworks (COF) structures for gas storage / gas separation / sensor / optical / catalyst / magnetism / proton conductor applications.• Recent studies are conducted on the synthesis of one-dimensional (1D), two-dimensional (2D) and three-dimensional (3D) coordination polymers.• The preparation of materials for the detection of biological and chemical analytes and the development of nanomaterials, the development of fluorescence and electrochemical sensor systems are among the topics studied in the research laboratory.	
Applications	<ul style="list-style-type: none">○ MOF, HOF and COF design, synthesis and characterization○ Chemical crystallography○ Research and applications of biosensors○ Development of fluorescent materials and synthesis of carbon nanoparticles○ Electrochemical analysis	
Laboratory Photo		
Equipment	<ul style="list-style-type: none">○ Temperature programmable oven (Ecocell EC C091896)○ Binder Oven○ Velp Heater○ Vacuum oven○ Evaporator (Heidolph)○ Heated magnetic stirrers (Heidolph)○ Balance (Pioneer PA214C)○ Ultrasonic bath (United levely tool)○ pH meter (AZ)○ Vortex (Velp Scientifica)	

	<ul style="list-style-type: none">○ Centrifuge (Daihan Scientific)○ Shaker (Daihan Scientific)○ Dropsens (Methrom)
Projects	Tübitak Ardeb 1001 (2018-...) The synthesis of metal-organic frameworks constructed from structurally rigid porphyrin-based ligands determination of their surface area and investigation of the potential for storing gases such as hydrogen (H ₂) and carbondioxide (CO ₂) 445894 TL